

Laboratory Catalog
















2022/23

- Balances
- Pipetting Solutions
- UV/Vis Spectrophotometry
- Titration
- Density Meters
- Refractometers
- pH Meters and Sensors
- Automated Synthesis
- Real-Time Analytics
- Thermal Analysis



Analytical Excellence
Get Reliable Results Efficiently

METTLER TOLEDO

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Innovation in the Lab

Meeting Your Application Needs

METTLER TOLEDO's precision instruments are the foundation of accuracy, speed and quality for research and quality-control labs all over the world. Our comprehensive product range provides you with flexibility and precision in every application. See the product range overview below and discover all the ways we can help you deliver timely, reliable analytical results.

Weighing

We are constantly improving the world of balances. Our complete portfolio of lab balances offers maximum user protection, unparalleled measurement performance, full data security and seamless traceability.



Titration

Our new generation of titration solutions focuses on ease of use and flexibility. Its unique One Click™ user interface keeps training time to a minimum and speeds up workflows. A modular design ensures perfect adaptation to any titration application.



pH Measurement

From basic handhelds to flexible triple-channel meters, we offer a full spectrum of premium pH, conductivity, dissolved oxygen and ion instruments. You can find the right sensor for any application in any industry.



Materials Characterization

We are the technology leader in thermal-analysis instrumentation. Our innovative product range includes DSC, TGA, TMA and DMA, as well as an unmatched, powerful common software platform called STAR®.





Physical Values

Our digital instruments determine parameters such as refractive index and density, as well as dropping, melting, slip-melting, boiling and cloud point. Using optical and calorimetric methods, these reliable instruments are your tools for repeatedly measuring the physical properties of materials.

Pipetting

Our pipettes enhance lab performance and help reduce time-to-market by assuring optimum accuracy and repeatability. Innovative ergonomic designs, including the well-known LiteTouch™ System (LTSTM), minimize fatigue and injuries.

UV/Vis Spectroscopy

Our range of UV/Vis spectrophotometry instruments delivers accuracy and flexibility in all your analytical workflows. From standalone UV/Vis analyses to the creation of robust multiparameter systems, METTLER TOLEDO instruments and accessories have you covered.

Automated Chemistry

We provide the enabling technology, software and expertise to help you build a seamless workflow when transforming bench-scale chemistry into a commercial process. We have set many milestones in the last several decades that have helped our clients significantly enhance their performance and profitability.



New Product Solutions

Research and Development Enabled

Pushing the boundaries of what is possible is essential for great new discoveries in research and development. METTLER TOLEDO offers you measurement tools of the highest precision as well as many innovative techniques that help make sure your research is fast and effective.

We offer equipment to enable everything from ultra-fast materials analysis to high-precision weighing. So whether you wish to perform fully automated organic synthesis, handle liquids ergonomically or meet a processing goal in your lab, we provide you with the essential tools you need.

Peak Performance, Effortless Compliance



Enjoy right-first-time results and be sure of compliance with regulations. XPR analytical balances offer efficient and error-free weighing processes to save you time, money, and materials.

More information on pages
42–43.

► www.mt.com/XPR-Analytical

Automate Large Numbers of UV/Vis Samples



Simplify repetitive tasks and gain more productive lab time. Combine an InMotion™ Autosampler and UV/Vis spectrophotometer for automated measurements of up to 303 samples in a row.

More information on pages
180–181.

► [www.mt.com/
UV-VIS-Automation](http://www.mt.com/UV-VIS-Automation)

Keep Chemical Reactions Safe



The reaction calorimeter RC1mx™ is based on a proven high-performance thermostat design. RC1mx sensors and final control elements create plug-and-play functionality that is controlled by either a state-of-the-art touch interface or iControl™ PC software.

More information on pages
268–269.

► www.mt.com/RC1



Benefit from Accurate Semi-Automated Pipetting



BenchSmart™ 96 is a semi-automated 96/384-well pipettor covering a range of 0.5 to 1,000 μL . High reproducibility and efficiency are achieved thanks to automatic aspiration, dispensing, tip loading and tip ejection.

More information on pages
150–151.

► www.mt.com/BenchSmart96

Effective Quality Control

Solutions for Accuracy and Compliance

Getting reliable results efficiently is key for most quality control laboratories. METTLER TOLEDO's robust and reliable product solutions provide precise results while making operation easier, supporting compliance with standard operating procedures and regulations, and ensuring high-quality results.

Save Effort with Automated Titration



Our compact InMotion Karl Fischer Oven Autosampler allows up to 26 samples to be placed on a rack of only 25 centimeters. Its temperature-scan functionality speeds up the analysis of unknown samples by determining the optimum temperature for heating the sample.

More information on pages 198–199.

► www.mt.com/InMotionKF-Oven

Trust Your Pipettes Save Time and Reduce Risk



Reduce your risk of experimental failure and improve reproducibility between calibrations. SmartCheck™ provides a fast, practical way to verify that a pipette is dispensing accurately. From start to finish, SmartCheck delivers a pass/fail result in less than 60 seconds.

More information on page 164.

► www.mt.com/SmartCheck

Make Faster Decisions About Moisture Content



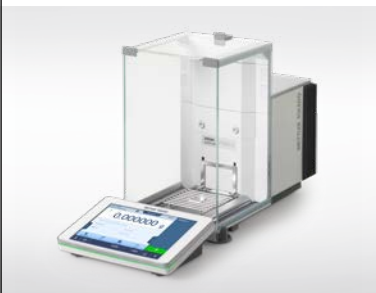
The HX204's QuickPredict™ function predicts the final moisture content in a fraction of the usual measurement time. This enables faster decision-making to speed up your processes while ensuring airtight repeatability and quality. QuickPredict can be added as an option on HS153.

More information on pages 130–141.

► www.mt.com/Moisture



No Compromise with Your Precious Samples!



XPR analytical balances are the right choice for challenging weighing applications such as weighing the smallest sample sizes with exceptional accuracy and a readability of 2 μg . Save time, money and materials, and invest in a balance that consistently delivers results you can trust.

More information on pages
42–43.

► www.mt.com/XPR-Analytical

Broaden Your Knowledge

Laboratory Expertise at Your Fingertips

Our Expertise Library offers plenty of free information on critical laboratory issues. Topics are carefully selected to support the daily activities of lab analysts and managers. In-depth knowledge and expert advice are easily accessible via articles, white papers, webinars and videos on specific topics. New topics are added regularly!

Literature



Benefit from our application database covering all industry segments. Basic introductory or advanced information is available to you in the form of white papers, guides and brochures.

Live and On-Demand Webinars



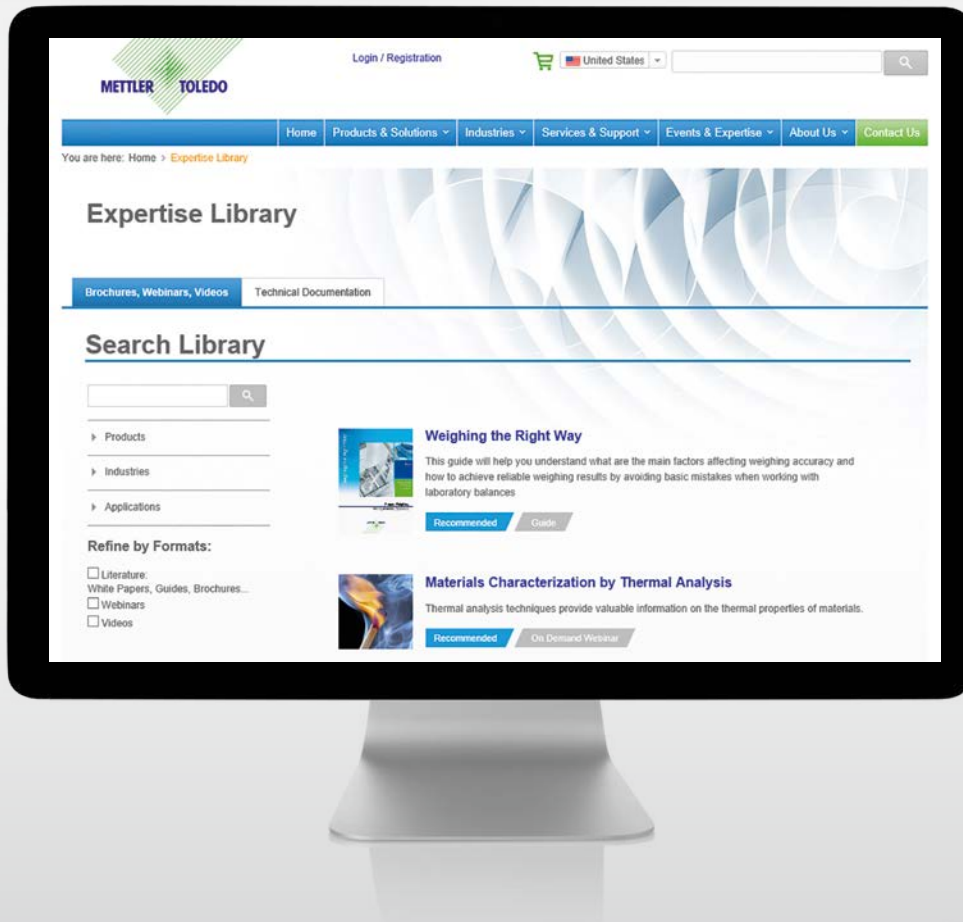
Live and on-demand webinars give you the opportunity to receive specific and relevant information concerning industry trends, applications, product knowledge and best practices.

Journals and Newsletters

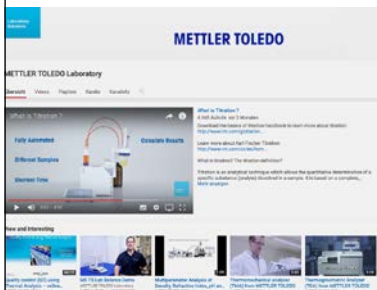


Our newsletters provide you with insights into applications, new products and industry trends. UserCom journals feature examples and applications to help you gain practical knowledge and efficiency.

Get more information
[▶ www.mt.com/Library](http://www.mt.com/Library)



YouTube Laboratory Channel



Experience our range of laboratory products with select videos on our laboratory YouTube channel. Our informative videos offer you a comprehensive overview of product innovations and application solutions.

► www.youtube.com/MTLaboratory

Simplify Daily Routines

One Click Is All You Need

One Click™ is more than just a shortcut. It's an intuitive user-management concept stretching across key METTLER TOLEDO laboratory instruments to help make your daily work in the lab as easy as possible. By defining shortcuts and adding them to the user-specific home screen, you can obtain accurate results at the touch of a button.

Access

The home screen of the instrument shows all key tasks defined by a particular user.

Routine Tasks

Shortcuts allow each user access to all daily operations on their own customizable home screen.

Method Start

If a method key is pressed, the complete routine is started. No further confirmations or configurations are needed.

Back Home

The "home" button on the instrument brings the user to the home screen.





Karl Fischer Titrator



Excellence Titrator



Analytical Balance



Refractometer



Density Meter

pH Meter

UV/Vis Spectrophotometer

Melting Point System



One Common Interface Across All Key Lab Instruments

Most METTLER TOLEDO instruments share the same One Click user interface. This means users of one instrument are already familiar with the operation of other instruments.

Key One Click Benefits:

- Easier and faster task execution
- Users see only the functions/actions they need
- Routine users are not distracted by unneeded functionality
- Operation mistakes are avoided
- SOPs are automatically executed
- Less training is required

See One Click in action in this short video
▶ www.mt.com/One-Click-Titration

One Software Solution Multiple Lab Instruments

LabX™ software digitalizes your lab with automatic documentation, high process security, full SOP user guidance and centralized management of instruments, users and data. With remote networked operation, PCs can be eliminated, creating a leaner lab experience. Administrative work is automated and your paperless lab becomes a reality.

Single Software for Many



Reduce complexity with one software for all your balances, titrators, pH meters, UV/Vis spectrophotometers, density meters, refractometers and melting point instruments. Simplify maintenance and validation efforts and integrate instruments into your overall systems such as LIMS¹ or CDS² with just one interface.

Central Control



With LabX, you control data and process information centrally. You can manage SOP methods, users, instruments and results. View and electronically sign data as it is generated in real time from any connected computer.

Software Services



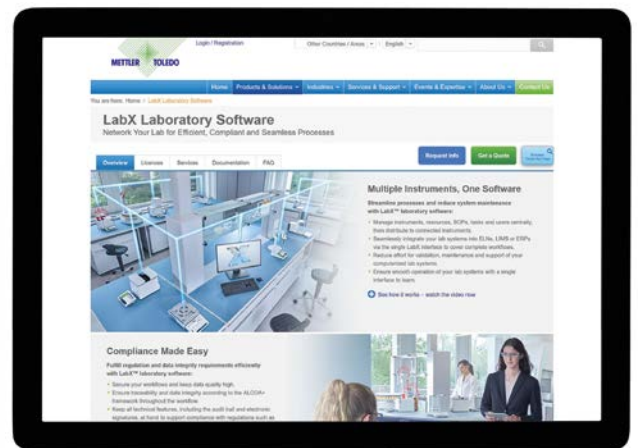
LabX Software Care contracts provide support and access to new LabX releases so you profit from the latest innovations and ensure consistent performance. Choose additional services such as installation, training, validation and workflow development to complete your system.

¹ Lab Information Management System

² Chromatography Data System



LabX Competence and Knowledge Center



Download our white papers and watch LabX in action

www.mt.com/LabX

Digitalize Your Lab

Data and Workflow Management

LabX laboratory software connects multiple METTLER TOLEDO lab instruments. Benefit from increased workflow efficiency, optimal security support and centralized management of instruments, users and data.

Workflow Guidance



Ensure process security with complete step-by-step user guidance on the instrument touchscreen – even without a computer on the lab bench.

Complete Data



Complete data from all instruments is collected centrally for full traceability. Automatic data handling means manual transcription errors are eliminated and administrative work is reduced to a minimum.

Multiparameter Analyses

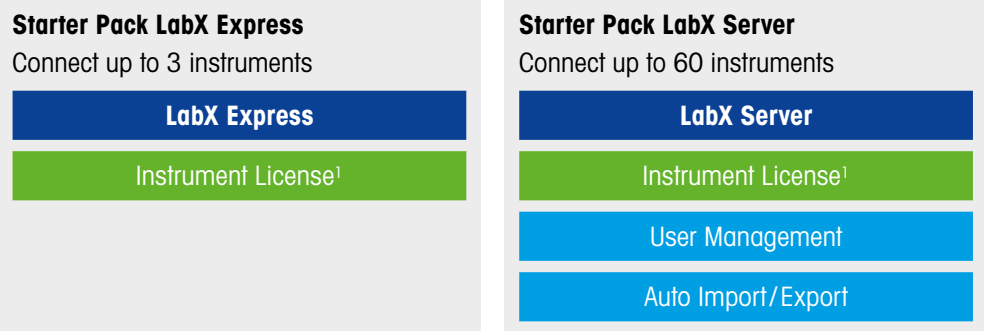


Combine multiple instruments to an automated multiparameter workflow. Increase sample throughput and collect measurement data from all analyses in one place.

Tailor LabX to Your Needs

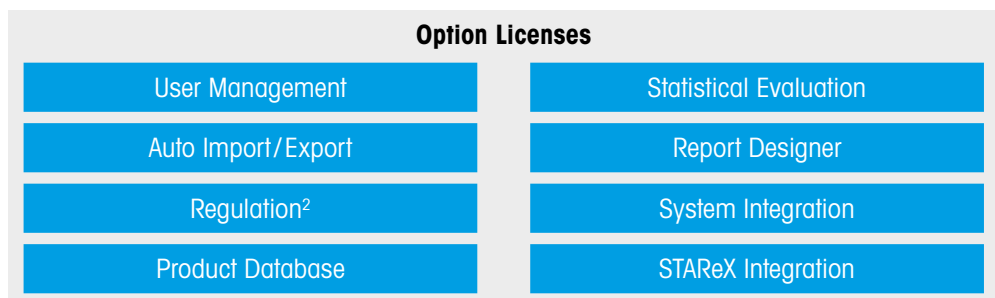
Step 1

Select a Starter Pack according to your first instrument and the number of instruments you want to connect.



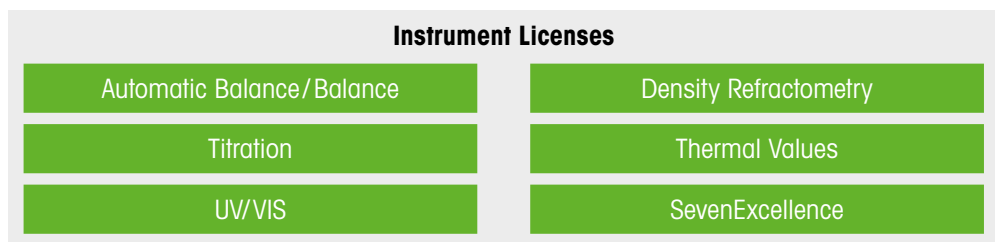
Step 2

Extend your systems with optional packages according to your needs.



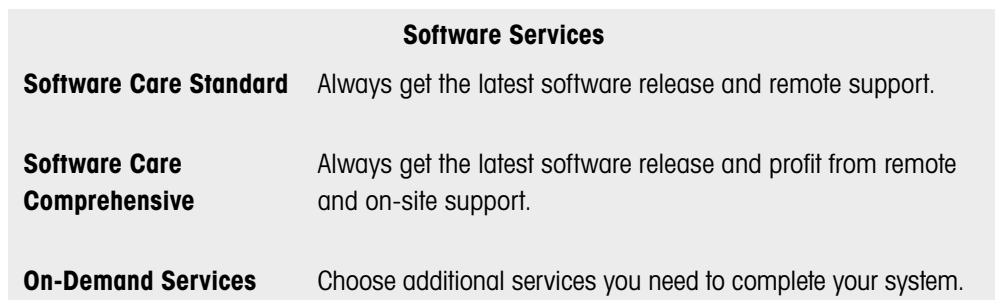
Step 3

Add additional instrument licenses for all of your instruments.



Step 4

Complete your system by choosing additional software services.



¹ Starter Pack Titration includes one instrument license for a titrator and one for a balance

² Includes User Management

Ensure Data Integrity

Security and Traceability with LabX

For laboratories that must comply with GLP, GMP and GAMP regulations, it is important to have documented evidence of activities that can be checked by a second person and available for inspection. Compliance with these regulations can help avoid import bans, product recalls, and even the closing of production plants.

Maximum Security



Full traceability, electronic signatures, enforced SOP methods, and extensive audit trails support laboratories around the globe with data integrity and regulatory compliance. LabX fully supports requirements for ALCOA+, 21 CFR Part 11, EU Annex 11 and ISO 17025.

Be Prepared for Audits



An impending audit is a source of worry for many lab teams. Knowing that you will – at any time – be able to recreate the sequence of events and circumstances which led to a certain result or record can be very reassuring.

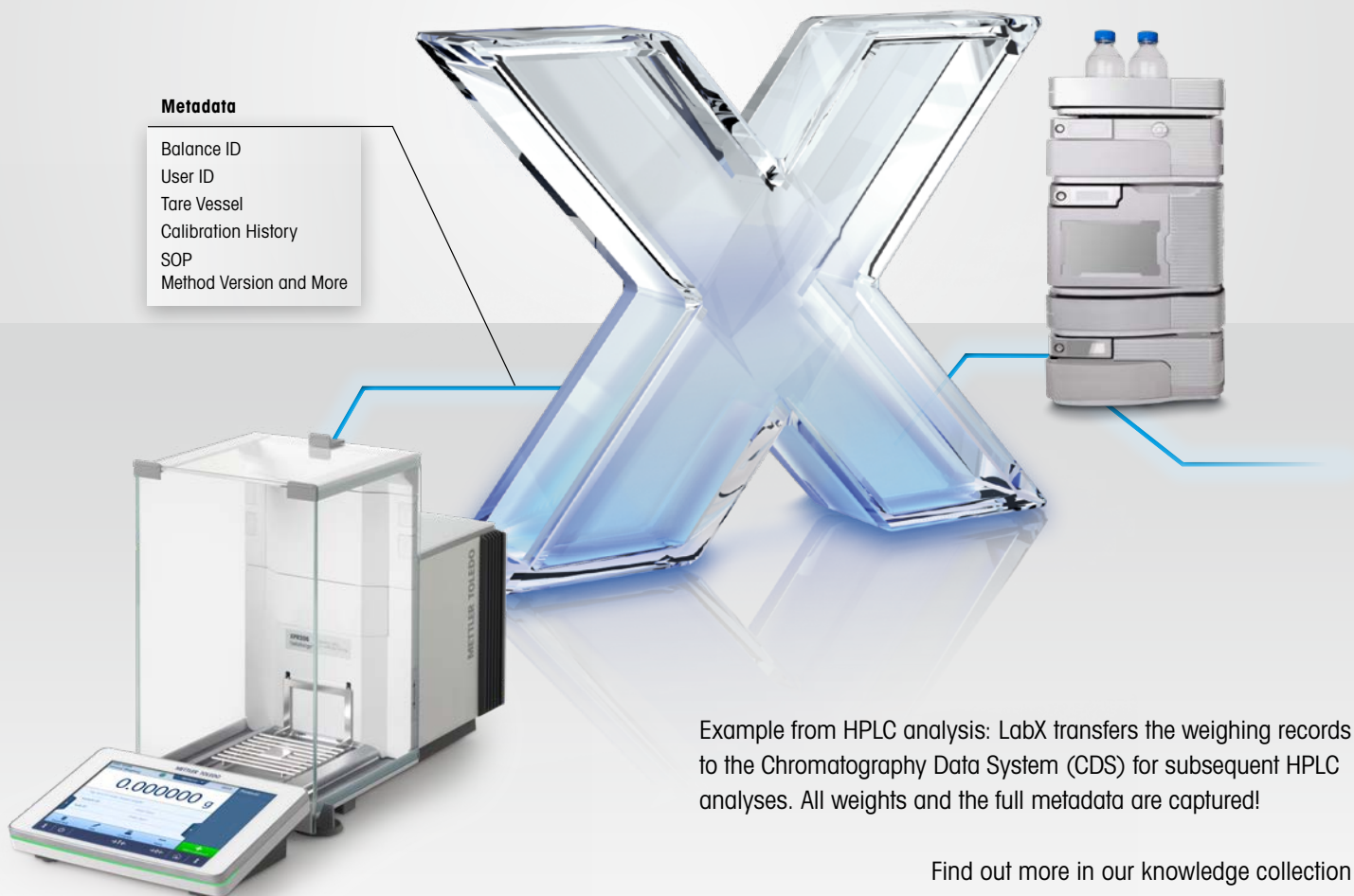
Avoid FDA Warning Letters



Every year FDA warning letters are issued due to a lack of data integrity. The main reason for issuance is incomplete data. LabX prevents such situations from occurring as all metadata is securely stored along with the actual results.



Storing the result is not enough. Each result set has to be complete and contain all relevant metadata. LabX helps achieve data integrity in the laboratory following the ALCOA+ principle.



Find out more in our knowledge collection
► www.mt.com/Lab-Data-Integrity

Accurate Results Day One

The Assurance of Skilled Service

METTLER TOLEDO offers precise and reliable measurement equipment along with the services that help to ensure continuous performance excellence and high measurement accuracy over the lifetime of your instruments.

We understand the challenges of managing a modern lab and continue to support your ongoing requirements for accuracy and productivity. Right from the start, we bring you a high level of service to ensure that even your most complex lab applications are up and running error-free so you can meet demands for accuracy, speed and quality.



Installation and Qualification



Our **three tiers of installation offerings** allow you to choose the level of regulatory compliance that you require, whether you must meet internal quality requirements or work in a highly regulated industry.

Calibration and Certification



Calibration is essential for getting accurate and reliable results. Traceable calibration tools ensure that the device functions according to its operational specifications. A calibration certificate provides the required evidence for quality audits.

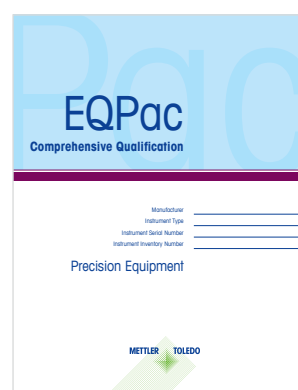
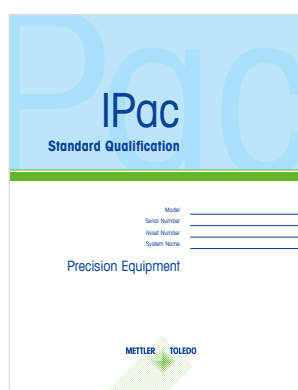
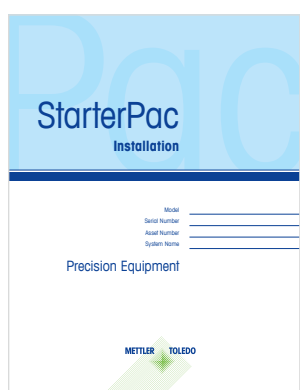
Extended Care



Extended Care provides an added level of assurance for the first 24 months after installation. With Extended Care, you also receive two preventive maintenance visits. Control your budget by avoiding unplanned expenditures throughout your equipment's life.

Installation and Qualification Matched to Your Compliance Needs

Professionally executed installation and qualification are essential to achieving the desired results from your instrument. You will have peace of mind that your equipment performs according to your needs right from the start. METTLER TOLEDO offers a comprehensive range of instrument installation, qualification and certification options to ensure that you can comply with applicable regulatory requirements.

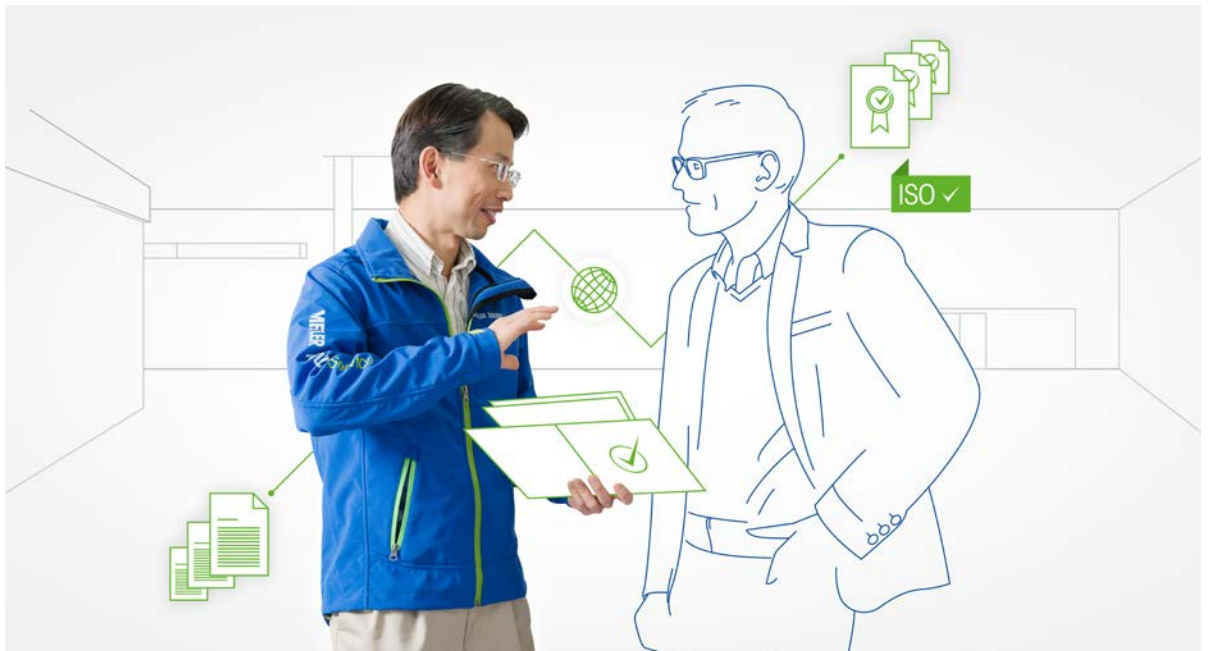


Quick and simple installation and basic operator familiarization.	Professional installation and in-depth user familiarization allows immediate equipment deployment.	
Operational checks to ensure optimal equipment functionality.	Comprehensive functional and metrological tests ensure equipment reliability and accuracy.	
Documentation of installation, setup, configuration and training steps provides traceability.	Documented installation work steps in the framework of IQ/OQ support regulatory compliance, ensure traceability, and provide optimal equipment performance.	Complete documentation of all work steps in the framework of IQ/OQ and PQ fulfill all regulatory compliance needs, ensure traceability, and provide excellent equipment performance.
—	Proposed routine tests and maintenance recommendations for operators ensure consistent performance over the entire lifecycle of the device.	
—	—	Every qualification step is assessed against user requirements or manufacturer specifications.

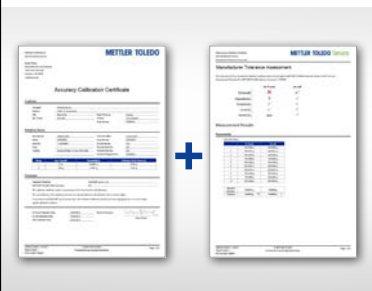
Calibration Offerings

Achieve Accurate Measurements

Calibration is essential for accurate measurement results using your high-precision weighing or analytical equipment. METTLER TOLEDO has a variety of certificates to meet your needs supported by our skilled service technicians around the world.



Calibration Offerings



Our portfolio of fully traceable calibration certificates paired with optional annexes offers a modular solution to adequately assess device performance. All certificates are available in PDF format for electronic storage to meet your regulatory and quality-management needs.

Accredited Processes



ISO/IEC 17025 is rapidly achieving prominence in industries requiring a technically focused standard. METTLER TOLEDO has adapted its service operations to the rigor of ISO/IEC 17025 accreditation so you can benefit from our professional and globally consistent calibration approach.

Harmonized Calibration Tools



To achieve the highest quality and consistency, METTLER TOLEDO service technicians and authorized service providers are equipped with harmonized tools such as MiraCal, our global calibration software.

Preventive Maintenance

Maximize Your Investment

As is the case for all measurement equipment, intensive daily usage causes wear and tear. Additionally, unanticipated environmental factors or use by untrained operators can take a toll. Extended Care keeps your measurement equipment in top shape.

ExtendedCare

Our Extended Care offering includes two preventive maintenance visits. It also covers labor, parts and travel related to equipment failures due to defects in material and workmanship for the first 24 months.

Regular and professionally performed maintenance prevents unexpected breakdown and ensures optimal performance.

Repairs are performed on-site whenever possible without any additional travel charge (does not cover repairs required due to misuse or abuse).



Coverage	Regular Warranty	Extended Care
Duration	12 months	24 months
Preventive maintenance		
Annual inspection and cleaning		•
Annual performance tests to manufacturer standards		•
Adjustments, if necessary		•
Spare parts		•
Coverage in case of technical problem		
First year of warranty	•	•
Additional year of warranty		•
Intervention on site	Only for some equipment, mail-in otherwise	•
Priority for intervention		•
Labor cost included	•	•
Travel cost included		•
Hotline for technical assistance		•

Good Measuring Practices

Improve Your Quality and Lower Your Cost

Reliable and accurate measurements lead to reproducible experiments, robust processes and sustainable quality assurance.

Good Measuring Practices, developed by the world-renowned measuring experts at METTLER TOLEDO, help you find the right instrument for your needs. They also provide advice and training on how to operate, calibrate and maintain your instruments so you are assured of the accuracy and equipment longevity you require for success in the laboratory.





Good Measuring Practices ensure reliable data in your laboratory or production environment, day in, day out.

Good Weighing Practice™ (GWP®)	pages 30–31
Good Pipetting Practice™ (GPP™)	page 162
Good UV/Vis Practice™ (GUVPT™)	page 183
Good Titration Practice™ (GTP™)	page 205
Good Density and Refractometry Practice™ (GDRPT™)	page 231
Good Electrochemistry Practice™ (GEPT™)	page 261
Good Melting and Dropping Point Practice™ (GMDPT™)	page 285
Good Thermal Analysis Practice™ (GTAPT™)	page 297



The Four Principles of Good Measuring Practices

Fit-for-purpose – meeting your specific needs

Risk-based – do only what is necessary

Metrologically proven – developed by the measuring experts

Universal – applicable to every instrument brand



Balances and Automated Weighing

Go Beyond Weighing



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GWP®: Fit-for-Purpose Weighing Equipment	30–31
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Scan this code for more information.

► www.mt.com/Balances

Laboratory Weighing Solutions

Accuracy, Automation, and More

METTLER TOLEDO's weighing and dispensing expertise goes into every balance we manufacture to bring you outstanding performance. By adding the right laboratory software and dedicated accessories, you can create a customized solution for fast, simple and worry-free workflows.



Trust in METTLER TOLEDO's weighing expertise and manufacturing competence.

Accuracy for Your Smallest Samples

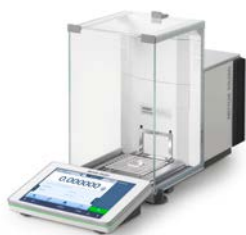
To accurately weigh the smallest of samples, choose from our range of micro and ultra-micro-balances which offer up to 101 million resolution points.



Micro Weighing

Trusted Analyses

Trust in your results with our high performing analytical and automatic balances. They offer the capacity, readability, security features, and built-in applications you need for all your analytical requirements.



Analytical and Automated Weighing

Robust Precision

With readabilities from 0.1 milligram and capacities up to 64 kilograms, plus selected high performance models, we can meet all your precision-weighing needs. Robust and easy to clean, our balances will give you years of reliable, accurate service.



Precision Weighing

Fit-for-Purpose Balances

Weighing Results You Can Trust

Do you know how accurately your balance is weighing? Can you verify that it is fit for purpose? Do you know how to maintain this status over time?

To help you answer the questions above and support you in the management of your weighing program, METTLER TOLEDO developed the globally recognized standard Good Weighing Practice™ (GWP®). Here is how it works in three simple steps.

Selection



Our free, easy-to-apply GWP® Recommendation service:

- Provides you with security before making a purchasing decision
- Documents that your new device meets your process requirements

More information on page 31.

Installation



Professional qualification of your device installation:

- Ensures optimal weighing performance
- Improves productivity with correct device set-up
- Provides users with training to operate the device correctly
- Includes audit-proof documentation

More information on pages 82–83.

Calibration and Testing



To ensure accuracy over time:

- The ACC Calibration Certificate assesses the performance of the device by documenting the measurement uncertainty in use
- The GWP® Certificate proves that the device is fit for purpose
- GWP® Verification specifies a risk-based routine testing, calibration and maintenance plan

More information on pages 84–85.



How to Choose the Right Device

METTLER TOLEDO offers a huge range of high-quality balances. However, which one is right for your specific process and accuracy requirements? GWP® Recommendation helps you to select the balance that meets the needs of your process by considering the following key factors.

Maximum Weight

The maximum load you weigh (including the tare container)

Smallest Net Weight

The smallest load you weigh (excluding the tare container)

Weighing Tolerance

The weighing error that is acceptable, specified as \pm percentage

Safety Factor

Considers environmental influences such as vibrations, drafts, etc.



Good Weighing Practice

METTLER TOLEDO developed GWP as a global weighing standard based on scientific principles. It helps to ensure accurate weighing results by providing a proven framework for the selection, operation and maintenance of all weighing equipment of any brand in any workplace.

► www.mt.com/GWP
► www.mt.com/GWP-Recommendation

Digitalize Your Weighing Tasks

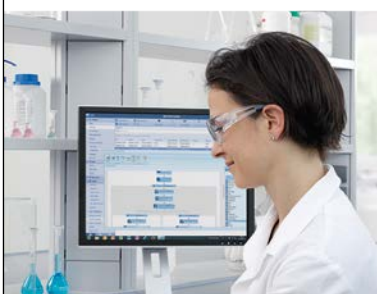
A Paperless Lab at Your Fingertips

Connect your balance or other METTLER TOLEDO lab instrument for fully networked workflows that maintain accuracy, data integrity and compliance. Benefit from full on screen user guidance, automatic documentation, and personalized reporting.

Users simply weigh or perform another analytical task and LabX™ takes care of the rest. Additionally, our LabX services offer a comprehensive range of software support including LabX installation and method development.

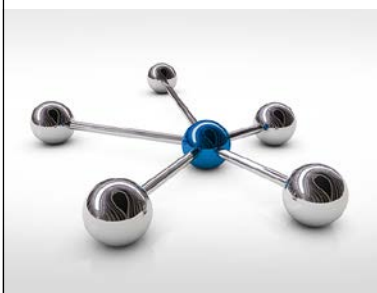
Bring the Power of LabX to Your Applications

Flawless SOP Adherence



By adding your workflows into LabX, you can be sure that all users follow the correct procedures.

Central Instrument Control



All connected instruments can be monitored and controlled from the PC. Lab-wide data on weighing tasks, routine tests and instrument status are available at your fingertips.

Guidance at the Terminal



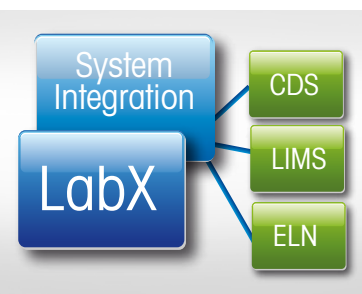
Users start each task directly from the instrument terminal and follow step-by-step instructions to eliminate errors and rework.

Data Integrity



LabX saves all process data securely and performs all calculations, completely eliminating transcription errors and assisting in compliance with FDA 21 CFR Part 11 and other regulatory principles and guidance.

Seamless Integration



Connect your balance and other instruments to LabX for seamless integration with your existing information systems.

Multiple Instruments



Connect up to 60 instruments in any combination: XPR/XPE/XP/XSR/XSE/XS balances, automatic balances, titrators, UV/Vis spectrophotometers, pH meters, melting point instruments, density meters and refractometers.

Example Applications

Whether you customize an application from our library or create a new one from scratch, the examples below show the type of benefits LabX can bring to your applications. Our LabX specialists can develop your methods for you as part of our service offering.



Standard Preparation

- One-step dosing
- Fully labeled samples
- Automatic calculations

Typical Product Bundle

XPR205 analytical balance
LabX Balance Starter Pack
ErgoClip flask
Label printer



Loss-on-Drying (LoD)

- Simplified sample handling
- Intelligent task management
- Color pass/fail identification

Typical Product Bundle

XPR204 analytical balance
LabX Balance Starter Pack
ErgoClip round-bottom flask
Label printer
Barcode reader



Sieve Analysis

- Auto sieve-weighing
- No manual transcription
- Graphical reports

Typical Product Bundle

XPR10001L precision balance
LabX Balance Starter Pack

LabX Starter Packs

Starter Pack Express		Starter Pack Server	
Up to 3 instruments connected to a local computer		Up to 60 connected instruments with the capability to distribute the system over multiple computers	
LabX Balance Express	11153120	LabX Balance Server	11153121

LabX Software Care Packages

Software Care Standard	Software Care Comprehensive
Always get the latest software release and remote support	Always get the latest software release and profit from remote and on-site support

On-Demand LabX Services

Choose the additional services you need to complete your system and enjoy total confidence:

- Installation
- Training
- Validation
- Integration
- Consultation
- Method development

Please see LabX on pages 14–17 for further details and licensing options.

Learn more about LabX software

► www.mt.com/LabX

Versatile Performance Weighing

Smaller Samples, Higher Capacities

With METTLER TOLEDO's high performance balances you can now weigh your smallest sample quantities at higher capacities. This is particularly useful for applications with substantial differences between the initial and final weight values, or when the tare load is high compared to the weight of the applied material.

One-Balance Formulation



Utilizing high-performance balances for formulation enables you to use just one balance in many applications. With their high repeatability, these higher performance balances support the accurate weighing of small sample quantities.

Heavy Tare, Light Product



Benefit from an increased weighing range and lower minimum detectable sample load in applications where tare and sample weights differ substantially. Common applications are:

- Gas filling
- Non-volatile residue determination
- Weight loss

Conserving Precious Materials



XPR-C and XPE-C balances offer the lowest minimum weight values in their class enabling you to use the smallest quantities possible of your most valuable materials.

Accurate Results	High-resolution technology SmartPan™ weighing pan
Efficient Operation	Large color capacitive touchscreen terminal, glove compatible Storage of weighing methods (including sample series and tolerances) Integrated results notepad
Quality Assurance	GWP® Approved built-in quality assurance monitoring MinWeigh warning function Balance ready StatusLight™ LevelControl: level warning with graphical leveling guide Temperature and time programmable automated internal adjustment (proFACT) User management
Seamless Process	Easy connectivity and data export: 4 x USB, 1 LAN Easy connection of peripheral devices: printers, PC, barcode readers, footswitches and sensors Integrated label editor, alphanumeric and barcode Export of process and results data to XML or Excel Web service



Lowest Minimum Weight

Across each capacity range, our high performance balances offer the lowest minimum weight values.



Minimal Eccentricity Error

Minimize corner load and eccentricity errors with the hanging weighing pan and LevelMatic™ weighing pan technology for faster results and improved performance.



Exceptional Resolution

Thanks to the high quality Swiss weighing cell and state-of-the-art electronics, it is possible to weigh your samples with an astonishing resolution of 101 million points.



XPR26003LC higher performance balance with 20 kg barrel

Watch the video now

► www.mt.com/XPR-Precision

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Material No.
XPR6U	6.1 g	0.0001 mg	0.0004 mg	0.004 mg	0.3 mg	30279276
XPR10U	10.1 g	0.0001 mg	0.0006 mg	0.004 mg	0.6 mg	30756546
XPR36C	32 g	0.001 mg	0.0025 mg	0.012 mg	1.2 mg	30594503
XPR56C	52 g	0.001 mg	0.004 mg	0.02 mg	1.2 mg	30355547
XPR226CDR	121 g → 220 g	0.01/0.005 mg	0.025 mg	0.1 mg	8 mg	30594507
XPE505C	520 g	0.01 mg	0.06 mg	0.2 mg	40 mg	30137978
XPR2003SC	2,300 g	1 mg	1 mg	2 mg	1.2 g	30137627
XPR2004SC	2,300 g	0.1 mg	0.6 mg	1 mg	600 mg	30317628
XPR5003SC	5,100 g	1 mg	2 mg	3 mg	2 g	30317629
XPR5004SC	5,100 g	0.1 mg	1.3 mg	3 mg	1.3 g	30317640
XPR10003SC	10,100 g	1 mg	3.5 mg	7 mg	4 g	30317641
L-platform						
XPR26003LC	26,100 g	1 mg	6 mg	20 mg	8 g	30317642
XPR32003LD5C	32,100 g	5 mg	15 mg	20 mg	13 g	30317643
XPR64003LD5C	64,100 g	5 mg	15 mg	50 mg	20 g	30317644
XPR64002LC	64,100 g	10 mg	35 mg	50 mg	36 g	30317645
XPR64002LC-T	64,100 g	10 mg	35 mg	50 mg	36 g	30317646
K-type						
XK155KSD5C	150 kg	0.05 g	0.12 g	2 g	80 g	30590947
XK604KMC	600 kg	0.1 g	0.3 g	10 g	200 g	30594033
XK1004KMD5C	1,100 kg	0.5 g	1.7 g	20 g	600 g	30594035
XK2003KLC	2,500 kg	1 g	9 g	100 g	4 kg	30594036
XK6002KLC	5,400 kg	10 g	90 g	300 g	6 kg	30594037

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load

XPR Microbalances

Taking Weighing to New Limits

With up to 101 million resolution points, XPR micro and ultra-microbalances are ideal for accurately measuring the smallest samples.

Exceptional Accuracy for Small Samples



With one microgram readability, low minimum weight, and unique design features, you can accurately weigh tiny samples with the utmost safety.

Audit-Proof Results – Every Time



Innovative quality assurance functions actively monitor the status of your balance and are your reassurance of accurate, repeatable and valid results.

Small Footprint and Two Terminals



XPR microbalances have the smallest footprint on the market, plus the main terminal can be placed away from the balance, wherever is most convenient.

Accurate Results	Active Temperature Control (ATC™) High resolution electromagnetic force compensation (EMFC) weighing sensor Compact ionizer ready (with stand)
Efficient Operation	Storage of methods and sample series Capacitive colored touchscreen with gesture control, glove compatible
Quality Assurance	GWP® Approved built-in quality assurance monitoring ToleranceProfile function, programmable for up to 10 standards User management and password protection Change history files StatusLight LevelControl, graphical leveling and level warning Temperature and time programmable automated internal adjustment (proFACT) MinWeigh warning function
Seamless Process	Efficient operation via SmartView terminal Storage of SOPs in method library (including sample series and tolerances) Easy data export via connectivity ports: 4 × USB, 1 × LAN Web service
Sustainable Value	Compact design with small footprint Optimized draft shield for easy cleaning Overload protection
Automation Options	LabX ready



XPR6UD5 microbalance



Effortless Data Integrity with LabX

LabX provides on-screen user guidance and automatically saves weighing results and metadata in a secure database to help ensure traceability, data integrity, and compliance with 21 CFR Part 11. Users, instruments and tasks can be managed centrally.



Smart Features Enhance Productivity

The capacitive touchscreen allows you to swipe through settings, applications, and methods. Your task can be stored in the method library and quickly accessed. This saves you time and provides higher process security.



Easy and Error-Free Data Handling

As you carry out your tasks, your results and parameters are automatically recorded on the built-in results notepad. The data can be quickly and easily sent to a PC or software application via direct transfer or USB flash drive.

Watch the video now

www.mt.com/XPR-Microbalances

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	Settling Time (typical)	USP Min. Weight ³	Weighing Pan Ø (mm)	Material No.
XPR2	2.1 g	1 µg	0.8 µg	4 µg	8 s	1 mg	27	30279267
XPR6UD5	6.1 g	0.5 µg	0.5 µg	4 µg	8 s	0.6 mg	27	30279285
XPR10	10.1 g	1 µg	0.6 µg	4 µg	8 s	0.82 mg	27	30279296
XPR2U	2.1 g	0.1 µg	0.2 µg	1.5 µg	10 s	0.3 mg	16	30279196
XPR6U	6.1 g	0.1 µg	0.25 µg	4 µg	10 s	0.3 mg	16	30279276
XPR10U	10.1 g	0.1 µg	0.4 µg	4 µg	16 s	0.6 mg	16	30756546

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load
All models also available in verified version.

XPR Micro-Analytical Balances

Direct Dosing of Very Small Samples

XPR micro-analytical balances are perfect for accurately weighing the smallest amounts of your valuable samples. The extremely high accuracy and low minimum weight make it possible to weigh very small quantities, leading to considerable material and cost savings.

One-Step Dosing of Micro Samples



With the superior weighing cell, high capacity and outstanding stability, you can dose micro samples directly into your tare container in one step.

Right-First-Time Results



Integrated StatusLight™, Level-Control and GWP® Approved work together actively to ensure correct and audit-proof weighing results.

Avoid Hidden Errors with StaticDetect™



When electrostatic charge is detected on samples and containers, a warning is given. The optional ionizer automatically eliminates charges in seconds.

Accurate Results	Active Temperature Control (ATC) StaticDetect Compact ionizer ready (with stand)	Seamless Process	LabX ready Calibry ready Storage of SOPs in method library (including sample series and tolerances) Web service Multiple ports for easy connectivity and data export: 4 × USB, 1 × LAN
Efficient Operation	7-inch color touchscreen (glove compatible) ErgoClip for direct dosing SmartSens™ for touchless door operation SmartTrac™ dosing guide SmartGrid weighing pan Results notepad Storage of methods Automatic draft shield doors	Automation Options	LabX ready
Quality Assurance	GWP® Approved MinWeigh warning function Balance ready StatusLight LevelControl: level warning with graphical leveling guide Tolerance profiles User management Adjustment and routine test history Change history function proFACT Advanced internal adjustment		



XPR56 micro-analytical balance



Effortless Data Integrity with LabX

LabX provides on-screen user guidance and automatically saves weighing results and metadata in a secure database to help ensure traceability, data integrity, and compliance with 21 CFR Part 11. Users, instruments and tasks can be managed centrally.



Fast Processes for High Productivity

The hanging weighing pan significantly reduces the impact of air turbulence on the weighing cell, reducing stabilization times, even in a fume cupboard. Coupled with increased temperature stability and touch-free operation, weighing is fast and efficient.



Efficient Data Management

Save weighing tasks in the method library to ensure consistent processes. The built-in notepad automatically records all results and task parameters, eliminating manual transcription. Transfer data directly to a PC or LIMS to save time and avoid errors.

www.mt.com/Micro

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
XPR36	32 g	1 µg	1.5 µg	12 µg	1.4 mg	40 × 40	30594493
XPR36C	32 g	1 µg	1 µg	12 µg	1.2 mg	40 × 40	30594503
XPR36DR	← 8.1 g → 32 g	1/10 µg	2 µg	20 µg	2.0 mg	40 × 40	30594498
XPR56	52 g	1 µg	1.2 µg	20 µg	1.4 mg	40 × 40	30355535
XPR56C	52 g	1 µg	1 µg	20 µg	1.2 mg	40 × 40	30355547
XPR56DR	← 11 g → 52 g	1/10 µg	2 µg	30 µg	2.0 mg	40 × 40	30355539

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load
All models also available in verified version.

Analytical Balance Portfolio

The Utmost in Weighing Accuracy

Excellence Weighing and Analytical Balances

Weigh the smallest samples with utmost accuracy. Comprehensive quality assurance functions ensure right-first-time, audit-proof results. Combine with LabX for ensured data integrity.

XPR Automatic



Capacity up to 320 g
Readability down to 0.002 mg
Automated minimum weight 0.4 mg

Automated and Manual Weighing in One Device

With just one click, return the dispensing head to its home position to swap from automated powder and liquid dispensing to manual operation.

Big Savings from Small Minimum Weights

Weigh extremely small samples with unmatched accuracy, maximizing usage of expensive and rare substances and achieving a very fast ROI.

Perfect Concentrations

The exact amount of solvent is dispensed according to the actual amount of substance dosed. Even small quantities of solutions can be prepared with high precision.

Maximum User Safety

The enclosed dispensing process minimizes exposure to toxic and dangerous substances.

Increased Productivity and Throughput

With the optional sample changer, dispense solids and liquids into up to 30 containers in one fully automated run.

LabX Software

Benefit from automatic documentation, SOP user guidance on the balance, and centralized management of instruments, tasks, and users. Assists with 21 CFR Part 11 compliance.

XPR



Capacity up to 320 g
Readability 0.002 mg/0.1 mg
Minimum weight 0.6 mg
USP minimum weight 6 mg

Outstanding Weighing Performance

A superior weighing cell and high temperature stability ensure a low minimum weight and accurate weighing results.

Audit-Proof Results Every Time

StatusLight, LevelControl, and GWP® Approved provide at-a-glance information to verify your results are valid and ready for audit at any time.

Avoid Hidden Errors Caused by Static

StaticDetect provides a warning if electrostatic charges exceed predefined limits. The optional ionizer automatically eliminates charges in seconds.

Consistent Workflows

Saved weighing methods offer a quick and convenient way to start tasks. Every user follows the same procedures for consistent and repeatable results.

LabX Software

Benefit from automatic documentation, SOP user guidance on the balance, and centralized management of instruments, tasks, and users. Assists with 21 CFR Part 11 compliance.

Enabled for Automated Dispensing

The optional powder and liquid dispensing modules enable you to prepare highly accurate samples and solutions automatically.

XSR



Capacity up to 320 g
Readability 0.01 mg/0.1 mg
Minimum weight 1.6 mg
USP minimum weight from 16 mg

Efficient Touchscreen Operation

The touchscreen interface, easy-access menus, results notepad, and saved weighing methods make balance operation instinctive and efficient.

Ergonomic Dosing

Open the motorized draft shield with just one touch. The wide access and low weighing pan allow you to rest your arm on the bench when dosing.

LabX Software

Benefit from automatic documentation, SOP user guidance on the balance, and centralized management of instruments, tasks, and users.

Consistent Workflows

Saved weighing methods offer a quick and convenient way to start tasks. Every user follows the same procedures for consistent and repeatable results.

SmartGrid Hanging Weighing Pan

With the electronics at the rear of the balance, heat transfer is minimized and the weighing chamber is highly stable. Results are fast and cleaning is easy.

Advanced Level Balances

Meet your productivity targets thanks to great weighing performance, ergonomic design features and an intuitive user interface. Enjoy fast and convenient weighing processes.

MS-TS



Capacity up to 320 g
Readability 0.01 mg/0.1 mg
Minimum weight 3 mg
USP minimum weight 30 mg

Robust with High Precision

A high-precision MonoBloc™ weighing cell and full metal housing provides both accuracy and chemical resistance.

Intuitive Touchscreen Operation

The large color touchscreen and 11 intuitive applications with user guidance make routine weighing tasks simple and efficient.

Fast and Flexible Connectivity

LAN, USB, RS232 and optional WLAN/Bluetooth enable easy connection to a PC, IT system and peripheral devices.

Advanced Data Management

Save, print and export results and associated weighing data as a PDF, XML, CSV or TXT file.

Easy to Clean

Dismantle the QuickLock draft shield and glass panels of the MS-TS quickly with no need for tools. All surfaces are easy to clean.

ML-T



Capacity up to 320 g
Readability 0.1 mg
Minimum weight 16 mg
USP minimum weight 160 mg

Robust and Compact

A high-precision MonoBloc weighing cell and compact design provide both convenience and accuracy.

User Management

Personalized user profiles provide security and ease of use.

Fast and Flexible Connectivity

LAN, USB, RS232 and optional WLAN/Bluetooth enable easy connection to a PC, IT system and peripheral devices.

Advanced Data Management

Save, print and export results and associated weighing data as an XML, CSV or TXT file.

Standard Level Balances

Enter the world of professional weighing. High-quality construction and solid performance ensure consistent and precise weighing results.

ME-T



Capacity up to 220 g
Readability 0.1 mg
Minimum weight 16 mg
USP minimum weight 160 mg

Intuitive Operation

The bright 4.5-inch color TFT touchscreen with clear icons and intuitive guidance enables users to operate it quickly.

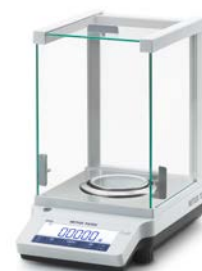
Easy Data Transfer

USB, RS232, and optional Bluetooth enable easy connection to peripheral devices.

Reliable Performance

An Electromagnetic Force Compensation (EMFC) weighing cell with FACT technology tests and adjusts the balance automatically, ensuring results remain accurate and reliable.

ME



Capacity up to 220 g
Readability 0.1 mg
Minimum weight 16 mg
USP minimum weight 160 mg

Robust and Durable

The balance provides a robust weighing cell with overload protection.

Easy to Use

Intuitive applications simplify routine weighing tasks.

Easy to Clean

Smooth, easy-clean surfaces help to prevent cross-contamination.

XPR Analytical Balances

Peak Performance, Effortless Compliance

There can be no compromise when you need accurate results. Thanks to smart quality assurance features, XPR analytical balances deliver valid results first time, every time. Seamlessly integrating into your existing information system, XPR analytical balances support the highest requirements for security, efficiency, and compliance.

Excellence

Outstanding Weighing Performance



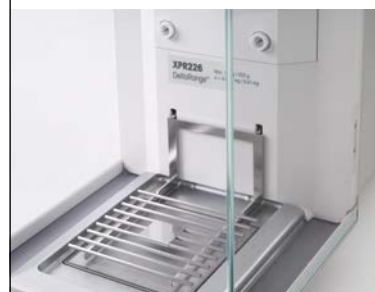
The superior weighing cell and high temperature stability ensure a low minimum weight and enable you to accurately weigh small and precious samples.

Audit-Proof Results Every Time



The StatusLight, LevelControl, and GWP® Approved provide at-a-glance information to verify your results are valid and ready for audit at any time.

Avoid the Hidden Errors Caused by Static



StaticDetect provides a warning if electrostatic charges exceed predefined limits. The optional ionizer automatically eliminates charges in seconds.

Accurate Results	Active Temperature Control (ATC) StaticDetect Ionizer module ready Compact ionizer ready (with stand)	Seamless Process	LabX ready Calibry ready Multiple ports for easy connectivity and data export: 4 × USB, 1 × LAN Web service
Efficient Operation	7-inch color touchscreen (glove compatible) ErgoClip for direct dosing SmartSens for touchless door operation SmartTrac dosing guide SmartGrid weighing pan Results notepad Storage of methods Automatic draft shield doors	Automation Options	Automatic dispensing upgrade ready LabX ready RFID communication ready Automatic dosing option Upgradable to automatic powder and/or liquid dispensing
Quality Assurance	GWP® Approved built-in quality assurance monitoring MinWeigh warning function Balance ready StatusLight LevelControl: level warning with graphical leveling guide Tolerance profiles User management Adjustment and routine test history Change history function proFACT Advanced internal adjustment Alibi memory (for LFT models only)	Sustainable Value	Compact design with small footprint Optimized draft shield for easy cleaning Overload protection



XPR226DR analytical balance



Go Digital with LabX Software

LabX offers on-screen user guidance, automatic documentation, and central management of users and tasks. Weighing results and metadata are saved in a secure database helping to ensure traceability, data integrity, and compliance with 21 CFR Part 11.



Consistent Workflows

Save filter settings, process settings, and tolerances on the balance as individual methods. Easily accessed, methods offer a quick and convenient way to start tasks. Every user follows the same procedures for consistent and repeatable results.



Easy Upgrade to Automatic Dosing

The optional powder and liquid dispensing modules enable you to prepare samples and solutions automatically with an accuracy unmatched by manual processes. Automated dispensing minimizes sample usage, reduces out-of-spec results, and maximizes user safety.

Watch the video now

www.mt.com/XPR-Analytical

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
XPR106DUH	41 g 120 g	0.002/0.005 mg	0.005 mg	0.10 mg	6 mg	64 × 56	30532226
XPR226DR	← 121 g → 220 g	0.005/0.01 mg	0.01 mg	0.10 mg	10 mg	78 × 73	30594478
XPR226CDR	← 121 g → 220 g	0.005/0.01 mg	0.01 mg	0.10 mg	8 mg	78 × 73	30594507
XPR225DU	121 g 220 g	0.01/0.1 mg	0.015 mg	0.20 mg	14 mg	78 × 73	30594488
XPR105DR	← 41 g → 120 g	0.01/0.1 mg	0.015 mg	0.15 mg	14 mg	78 × 73	30355342
XPR205	220 g	0.01 mg	0.015 mg	0.10 mg	14 mg	78 × 73	30355411
XPR225DR	← 121 g → 220 g	0.01/0.1 mg	0.015 mg	0.15 mg	14 mg	78 × 73	30594483
XPR205DU	81 g 220 g	0.1/0.01 mg	0.015 mg	0.20 mg	20 mg	78 × 73	30469076
XPR205D5	220 g	0.05 mg	0.04 mg	0.20 mg	41 mg	78 × 73	30469150
XPR204	220 g	0.1 mg	0.05 mg	0.20 mg	82 mg	78 × 73	30355419
XPR305D5	320 g	0.05 mg	0.06 mg	0.30 mg	41 mg	78 × 73	30469154
XPE505C	520 g	0.01 mg	0.03 mg	0.20 mg	40 mg	78 × 73	30137978

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load
All models also available in verified version.

Automated Weighing

Your Investment for the Future

Maximize your investment with the one balance that does it all! Whether you need to weigh, dispense or perform another sophisticated process, XPR automatic balances go beyond satisfying your weighing needs. With the ability to toggle from automatic to manual weighing mode, these usable balances provide high flexibility, outstanding performance and an exceptionally fast return on your investment.

Economical Substance Usage – The balance minimum weight can be reduced by up to 30%

Maximum User Protection – Automated weighing protects you from toxic and chemically aggressive substances

Switch Between Modes – Enables all your manual and automated weighing applications

Perfect Concentrations – Prepare highly accurate concentrations as low as 0.1 milligram/gram in just one step

Automated Dispensing – Dose powders and liquids precisely and efficiently



Weighing

Weighing and liquid dispensing



Robotic dispensing platform



Automated capsule filling



Weighing, powder and liquid dispensing



LabX Laboratory Software

Get SOP user guidance on the instrument, automatic documentation, and bidirectional integration with integration with CDS and LIMS systems.

For more details, please see pages 14–17.

Accessories

Optimize your processes by adding peripheral devices and accessories.

For more details, please see pages 98–100.

Automated Powder Weighing

For the Highest Accuracy and Safety

XPR automatic balances dispense free-flowing powders with a level of accuracy that even the most skillful hands cannot replicate in manual processes. Simply enter a target weight and the exact amount required will be dispensed directly into the target container to eliminate out-of-specification errors and significantly lower exposure risk.

Unmatched Accuracy



The XPR automatic balance can dispense from 1 milligram to 5 grams of free-flowing powder directly into your target container. This highly accurate process eliminates variability and out-of-specification results. Automated dispensing can reduce the minimum net sample weight by up to 30 percent.

User Safety Assured



Potent or toxic compounds remain sealed within the dosing head and hence aerosol formation is kept to a minimum. This ensures that users are not exposed to substances during weighing.

Simplified Powder Dispensing



Nanoparticles, fine powders, granules and heterogeneous mixes are all suitable for dispensing. Even hard to handle or electrostatically charged powders are accurately dosed to target.



XPR analytical balance
with powder module



Easy Balance Upgrade

Dispensing modules are compatible with all XPR analytical balances and are easy to install for immediate dispensing.



Traceable Data

All information (substance ID, substance expiry date, etc.) is saved on the integrated RFID chip. Data can be easily called up and printed to ensure full traceability.



LabX Laboratory Software

Store complex applications, such as dilution series, in LabX and then run them directly from the balance with step-by-step user guidance and automatic data handling.

► www.mt.com/XPR-Automatic

Technical Specifications

Powder dispensing range	1 mg to several g
Average dispensing time	15–20 seconds, depending on the target weight and powder flow
Compatible balance models	XPR106DUH, XPR105, XPR105DR, XPR204, XPR205, XPR205DR, XPR205DU, XPR205D5, XPR206DR, XPR305D5
Suitable powders	Free-flowing, granular, electrostatically charged, lyophilized material, compacting, low density

Model	Material No.
Q3 Dosing Module	30418661

Offer of XPRQ Automatic Balances with Q3 Dosing Module

XPR106DUHQ	For automated weighing of small amounts of precious samples
XPR226DRQ	For a wide range of weighing applications
XPR305D5Q	For automated weighing using heavier tare vessels

Automated Liquid Weighing

Precise Concentrations Every Time

In combination with a liquid dispensing module, the XPR automatic balance enables you to prepare highly precise concentrations down to 0.1 milligram/gram. Achieving a dilution factor of 10,000 is possible in one single step. The amounts of solvent, standard and sample required are reduced considerably, saving costs and waste.

Highly Accurate Concentrations



Prepare concentrations down to 0.1 milligram/gram in one step in accordance with USP. Automated liquid dosing delivers precise concentrations every time because solvent is added automatically based on the actual weight of weighed-in solids.

Manual Variability Eliminated



This gravimetric sample preparation uses precise balance results to produce accurate concentrations, in contrast to error-prone visual readings when using volumetric flasks. Automatic results recording also eliminates transcription errors.

Compliance Supported



Due to the accuracy improvements offered by gravimetric procedures and liquid dosing, the USP has approved these methods and accepts them as a viable alternative for solution preparation.



The XPR automatic balance with a liquid module



Easy Balance Upgrade

With the addition of a liquid-dosing module, you can use your XPR analytical balance to not only weigh your substances but also prepare solutions with an unmatched level of accuracy.



Micro-Dosing Valve

A micro-dosing valve is used to dispense solvents automatically with levels of precision down to less than one milligram.



LabX Laboratory Software

Store complex applications, such as dilution series, in LabX and then run them directly from the balance with step-by-step user guidance and automatic data handling.

► www.mt.com/XPR-Automatic

Technical Specifications

Liquid dispensing range	100 mg – 10 g
Liquid source bottle	25 mL (GL25) or 250 mL (GL45) pressure-tight bottle with GL45 and GL25 thread size
Average dispensing time	Maximum flow rate 30 g/min (0.5 bar pressure)
Suitable liquids	Low viscosity solvents (<20 cP) e.g. water, acetonitrile, methanol, ethanol
Compatible balance models	XPR105, XPR105DR, XPR204, XPR205, XPR205DR, XPR205DU, XPR205D5, XPR206DR, XPR305D5

Model	Material No.
QLX3 Liquid Module	30418658
QL3 Pump	30418660
QLL Standard kit for bottles	30008318
QLL Advanced kit for bottles	30521817
QLL Standard kit for small bottles	30237340

Automated Filling with Sample Changer

Increase Productivity and Throughput

By extending your XPR automatic balance with a sample changer you can dispense solids and liquids into up to 30 containers in one fully automated run. A large portfolio of adapters supports many of the standard vials and containers used in a modern laboratory. Specific adapters for capsule filling applications are also available.

Increased Productivity



Automated dispensing with a sample changer is much faster than dosing manually, capturing huge time savings for your lab. Up to 30 samples can be dispensed in one completely unattended run. While the sample changer is at work, your staff can focus on other tasks.

Safe, Accurate Dispensing



Automated dispensing with a sample changer is highly accurate and reproducible, even when using small capsules or electrostatically charged substances. Materials are contained, minimizing exposure to toxic substances.

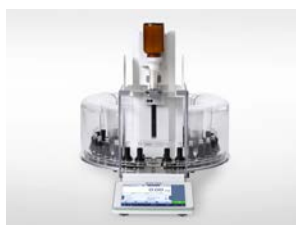
Fast Container Filling



Preparing samples with the sample changer is not only considerably faster than preparing samples manually, but it also reduces errors and variability. Different sized containers including capsules and vials are filled quickly and automatically.



XPR automatic balance
with a sample changer



Easy Balance Upgrade

The sample changer works in conjunction with your XPR analytical balance. The sample is dosed automatically into the containers on the carousel.



Container Flexibility

By simply adjusting the height of the dosing head, XPR automatic balance with sample changer can be used for filling vials, bottles, tubes, capsules, stability pouches, ampules, syringes and more.



LabX Laboratory Software

Store complex applications, such as dilution series, in LabX and then run them directly from the balance with step-by-step user guidance and automatic data handling.

► www.mt.com/XPR-Automatic

Technical Specifications

Average dispensing time	20–35 minutes for one run with 30 samples, depending on the target weight and powder flow
Compatible balance models	XPR105, XPR105DR, XPR204, XPR205, XPR205DR, XPR205DU, XPR205D5, XPR206DR, XPR305D5, XPR106DUH
Target vessel	For containers with diameters from 8.50–52 mm and vessels with diameters from 8.50–31.5 mm, 30 slots For vessels with diameters >31.5 mm, 15 slots Maximum height 140 mm including adapter, except XPR106DUHQ (100 mm) Adapters available for capsules, bottles, vials, tubes, crucibles
Model	Material No.
Q3 Dosing Module	30418661
QS3 Sample Changer	30418662
Sample Changer Rack 30Pos	11141772
Sample Changer Rack 30Pos with pins	30246875

Fully Automated Preparation Robotic Workflow Enablement

In a fully automatic process, the CHRONECT™ XPR Robotic Dispensing platform enables you to prepare up to 288 samples or solutions that consist of up to 32 powders and 5 liquids.

This unique system offers unprecedented accuracy and efficiency by combining an XPR automatic balance, six-axis robotic arm and easy-to-use software. CHRONECT XPR dispenses from one milligram up to several grams of powder substances and/or solvents in a completely unattended and highly precise process.

Boost Efficiency



Thanks to the six-axis robotic arm, highly accurate multi-component formulations and calibration standards can be prepared fully automatically, freeing up operators to work on other tasks.

Maximize Sample Yield



XPR automated dispensing technology enables samples as small as one milligram to be dispensed with the highest precision. Automated dispensing minimizes spillage and maximizes the yield of your valuable samples.

Dispense Flexibly



CHRONECT XPR can accommodate 3 different vial plates, each holding from 12 up to 96 vials of 1–15 milliliters in volume. With space for up to 32 powders and 5 liquids, you have the ultimate in dispensing flexibility.

See CHRONECT XPR in action
▶ www.youtube.com/watch?v=O6nY47UHpQA



Technical Specifications

		Powders	Liquids ¹
Dispensing	Dispensing range	1 mg – several g	100 mg – several g
	Dosing heads	Up to 32 powder dosing heads	Up to 5 liquid dosing heads
	Suitable chemicals	Free-flowing, fluffy, granular, statically charged powders	Low-viscosity solvents (<20 cP)
Sample and Weighing	Target vessel	1 mL to 8 mL vials in up to 3 SBS plates	
	Dispensing time per component	10–60 seconds, depending on substance	
	Compatible balance models	XPR226DRQ, other automatic balance models on request	
	Readability (full range/fine range)	0.01/0.005 mg	
	Minimum weight automated (tolerance = 1%)	0.7 mg	
	Minimum weight automated (USP tolerance = 0.10%)	7 mg	
Robot Arm	Model	Universal Robot UR3e – Collaborative Robot	
	Robot specifications	6-axis/3 kg payload	
	Handling tools	Gripper for handling vials, dosing heads and adapters	
Operating System	Design, operation and control	PC with Windows 10 + CHRONOS software	
	Data and report management	CHRONOS software, LabX laboratory software (optional)	
Options	Liquid module	Dispensing up to 5 different solvents	
	Additional capabilities	On request – PAL Robotic Handler	
	Further options or modifications	On request	
Platform	Dimensions, W×D×H (mm)	1,000×700×750	
	Weight (kg)	ca. 100	

¹ Only with optional liquid module

Collaboration Partner Axel Semrau GmbH & Co. KG

The CHRONECT platform is a joint collaboration between METTLER TOLEDO, Switzerland, and Axel Semrau, Germany. Axel Semrau has extensive expertise in laboratory automation and more than 40 years' experience in development and distribution. Axel Semrau is the professional partner that offers, manufactures, distributes and services the CHRONECT XPR solution.

For more information: www.axelsemrau.de

XSR Analytical Balances

Simplify Your Weighing Processes

XSR analytical balances offer high weighing accuracy and convenient operation with clever features such as SmartGrid, automated doors and the results notepad. Start your own saved weighing methods directly on the balance while StatusLight checks that all the conditions for correct weighing have been met.

Excellence

High-Performance Weighing



The high-performance weighing cell delivers accurate, reliable results. The hanging weighing pan ensures high stability and outstanding repeatability.

Efficient Touchscreen Operation



The touchscreen interface, easy-access menus, results notepad, and saved weighing methods make balance operation intuitive and efficient.

Ergonomic Design for Comfortable Dosing



Open the motorized draft shield doors with a simple touch. The wide access and low weighing pan allow you to rest your arm on the bench when dosing.

Accurate Results	proFACT Advanced internal adjustment Compact ionizer ready (with stand)
Efficient Operation	Color touchscreen (glove compatible) ErgoClip for direct dosing ErgoSens™ ready SmartTrac dosing guide SmartGrid weighing pan Results notepad Storage of methods Automatic draft shield side doors
Quality Assurance	GWP® Approved MinWeigh warning function Balance ready StatusLight LevelControl: level warning with graphical leveling guide Tolerance profiles Password protection Adjustment and routine test history
Seamless Process	LabX ready Calibry ready Multiple ports for easy connectivity and data export: 4 × USB, 1 × LAN Web service Export weighing results as XML to USB memory stick



XSR105 analytical balance



Ergonomic One-Step Dosing

ErgoClips are easy to install and hold your tare vessels securely on the hanging weighing pan. They can be precisely positioned so that you can dose directly into the container in one easy step. Weighing paper and back-weighing are no longer necessary.

► www.mt.com/XSR-Analytical

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
XSR105 DualRange	41 g 120 g	0.01/0.1 mg	0.02 mg	0.2 mg	20 mg	78 × 73	30355435
XSR105	120 g	0.01 mg	0.02 mg	0.2 mg	16 mg	78 × 73	30355059
XSR205 DualRange	81 g 220 g	0.01/0.1 mg	0.02 mg	0.2 mg	20 mg	78 × 73	30355396
XSR225 DualRange	121 g 220 g	0.01/0.1 mg	0.02 mg	0.2 mg	20 mg	78 × 73	30355364
XSR64	61 g	0.1 mg	0.07 mg	0.2 mg	82 mg	78 × 73	30355481
XSR104	120 g	0.1 mg	0.07 mg	0.2 mg	82 mg	78 × 73	30355485
XSR204	220 g	0.1 mg	0.07 mg	0.2 mg	82 mg	78 × 73	30355500
XSR204 DeltaRange	← 81 g → 220 g	0.1/1 mg	0.1 mg	0.5 mg	82 mg	78 × 73	30355491
XSR304	320 g	0.1 mg	0.08 mg	0.3 mg	82 mg	78 × 73	30355496

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load
All models available in verified version.

MS Semi-Microbalances

When You Need Higher Accuracy

With 10- μ g readability, MS semi-microbalances are perfect for weighing your smallest samples. The high resolution technology (HRT) weighing cell is made in Switzerland and ensures your results are accurate and reliable.

Accurate Results



Temperature controlled automatic internal adjustment (FACT) uses the two built-in weights to test for sensitivity and non-linearity to ensure consistently accurate results.

Ergonomic Doors



The doors do not project beyond the balance so you save valuable bench space. To enable ergonomic dosing processes, the right hand door can be opened with the left lever – and vice versa.

Pipette Check Application



Quickly convert your semi-microbalance into a pipette checking station by installing an evaporation trap. The built-in application guides you through the pipette check process.

Accurate Results	High resolution weighing cell (HRT) 2 built-in adjustment weights FACT – fully automatic time and temperature-controlled internal adjustment Low minimum weight Full metal housing
Efficient Operation	HCD high contrast display (18 mm high digits) Easy cleaning with QuickLock glass panels ErgoDoor left/right operation Telescopic draft shield doors for reduced footprint
Quality Assurance	MenuLock (settings protection) PipetteCheck with evaporation trap (optional)
Seamless Process	2 interfaces – USB and RS232 Bluetooth option PC Direct™ option and EasyDirect™ Balance application software for easy data transfer



MS105 semi-microbalance

**Reliable and Versatile**

You can depend on these balances for weighing all your small samples for process/quality control, density determination or formulation.

**Durable and Robust**

A metal housing protects the weighing sensor from environmental influences and impacts. Consistency and accuracy is assured year after year – even with intensive use in harsh environments.

**Hands-Free Operation**

Perform selected balance operations with a remote sensor.

ErgoSens™ as shown: 11132601
Footswitch: 11106741

► www.mt.com/SemiMicro-Analytical

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
MS105	120 g	0.01 mg	0.02 mg	0.1 mg	30 mg	∅ 80	11142056
MS105 DualRange	42 g 120 g	0.01/0.1 mg	0.02/0.08 mg	0.15 mg	30 mg	∅ 80	11142062
MS205 DualRange	82 g 220 g	0.01/0.1 mg	0.02/0.08 mg	0.2 mg	30 mg	∅ 80	11142068
MS204 ⁴	220 g	0.1 mg	0.07 mg	0.2 mg	100 mg	∅ 80	11142074

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load

⁴ MS semi-micro design with 0.1 mg readability

MS-TS Analytical Balances

Trusted Results at Your Fingertips

Robust MS-TS analytical balances deliver fast, accurate and reliable results with both lab and quality-control application support. Intuitive to operate and easy to clean, MS-TS balances bring a new level of comfort to your daily weighing tasks.

Advanced

Easy and Comfortable Use



The 7-inch extra-large color TFT touchscreen display can be operated through cotton, silicone and rubber gloves. An intuitive user interface and 18 millimeter high digits bring comfort to your daily tasks.

Advanced Data Management



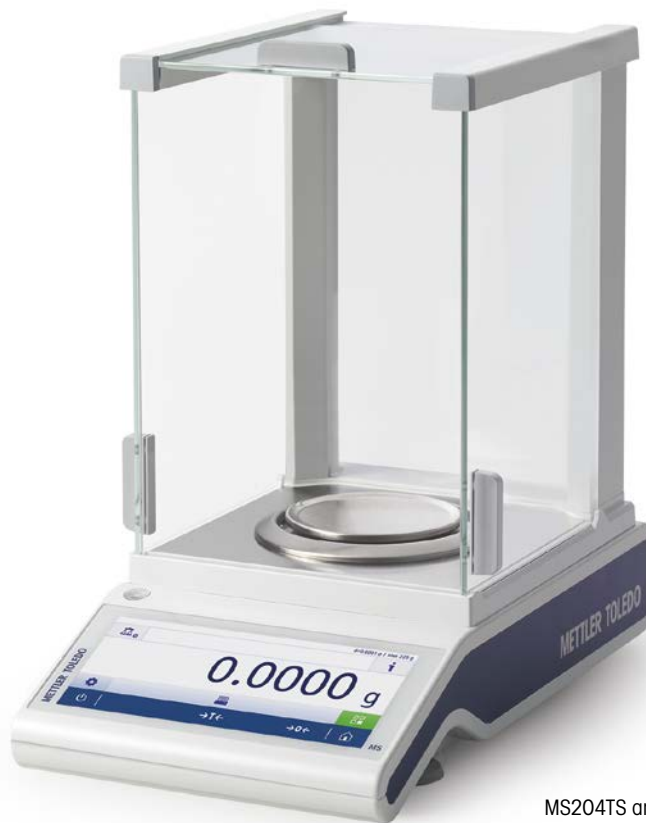
LAN, USB host, USB device, RS232 and optional WLAN/Bluetooth interfaces enable simple and comprehensive data handling. Transfer data to a PC, FTP server, USB memory stick or a printer, including comprehensive PDF reports or XML files.

Effortless Cleaning



The QuickLock draft shield dismantles in seconds without any tools and all parts are dishwasher-safe. Surfaces are smooth and rounded to make cleaning easy.

Accurate Results	<ul style="list-style-type: none"> MonoBloc weighing cell and overload protection FACT – fully automatic temperature-controlled internal adjustment Wind ring for faster settling times Full metal housing
Efficient Operation	<ul style="list-style-type: none"> 7-inch extra-large color TFT touchscreen (18 mm high digits) Easy cleaning with QuickLock for glass panels and draft shield Graphical display of statistics for improved management and evaluation of weighing data 11 easy-to-use applications for simplified workflows and increased efficiency
Quality Assurance	<ul style="list-style-type: none"> ISO-Log records important changes, e.g. adjustments, leveling status Barcode reader support and ID handling to reduce errors and increase productivity User management to customize access rights and improve productivity and traceability Built-in level control function and leveling user guidance
Seamless Process	<ul style="list-style-type: none"> LAN, USB host, USB device, RS232 and optional WLAN/Bluetooth Transfer data to PC, FTP server, USB memory stick or printer as a comprehensive PDF report or XML file PC Direct application for easy data transfer (no software needed) EasyDirect Balance software for comprehensive and customized data transfer Web access service for remote control and second screen



MS204TS analytical balance



Guided Balance Leveling

Built-in LevelControl issues a warning when the balance is not level and provides on-screen guidance to help you level the balance in seconds.



Convenient Applications

11 built-in applications, including differential weighing, density determination and formulation, guide you step-by-step through weighing procedures while supporting data integrity and process security. Evaluate your results easily with the statistics function and on-screen charts.



User Management

Customization of user access rights simplifies balance operation. Users have access only to the functions and applications they need to carry out their tasks, preventing errors and improving productivity.

Watch the video now

► www.mt.com/MS-Analytical

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
MS104TS	120 g	0.1 mg	0.1 mg	0.2 mg	160 mg	Ø 90	30133522
MS204TS	220 g	0.1 mg	0.1 mg	0.2 mg	160 mg	Ø 90	30133523
MS304TS	320 g	0.1 mg	0.1 mg	0.2 mg	160 mg	Ø 90	30133524

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load

ML-T Analytical Balances

Big Features Go Compact

ML-T compact balances offer good weighing performance and robustness combined with easy-to-use applications. With a battery-power option, these clever balances are fully portable. Ergonomically designed and with multiple built-in applications, you get a lot of balance in a footprint of just 290×184 millimeters.

Advanced

Intuitive Operation



The 4.5-inch color TFT touch-screen with clear icons and intuitive guidance enables efficient balance operation even while wearing cloth or rubber gloves. Multilingual text and graphics walk you through every step of your weighing procedures.

Advanced Data Management



LAN, USB host, USB device, RS232 and optional WLAN/Bluetooth interfaces enable simple and comprehensive data handling. Transfer data to PC, FTP server, USB memory stick or printer as comprehensive CSV and XML files.

Simplified Balance Leveling



The built-in LevelControl function issues a warning when the balance is not level and provides on-screen guidance to help you level the balance in seconds.

Accurate Results	<ul style="list-style-type: none"> MonoBloc weighing cell with overload protection FACT – fully automatic temperature controlled internal adjustment Wind ring for faster settling times Metal base
Efficient Operation	<ul style="list-style-type: none"> 4.5-inch color TFT touchscreen 10 easy-to-use applications for simplified workflows and increased efficiency Statistics option for improved evaluation of weighing data Easy cleaning with QuickLock glass panels Extra small footprint Battery operation
Quality Assurance	<ul style="list-style-type: none"> ISO-Log records important changes e.g. adjustments, leveling status Barcode reader support to reduce errors and increase productivity User management to customize access rights and improve productivity and traceability Built-in level control function and leveling user guidance
Seamless Process	<ul style="list-style-type: none"> LAN, USB host, USB device, RS232 and optional WLAN/Bluetooth Transfer data to PC, FTP server, USB memory stick or printer as a comprehensive CSV or XML file Built-in PC Direct application for easy data transfer (no software needed) EasyDirect Balance software for comprehensive and customized data transfer



ML204T analytical balance



Robust Weighing Cell

Our renowned and robust MonoBloc weighing cell, with FACT automatic internal adjustment, delivers consistently reliable results in the lab or field.



Quick and Easy Cleaning

Remove, clean and reinsert all of the QuickLock glass panels in just a few simple steps without tools and without moving the balance. The balance housing has smooth, rounded edges to make cleaning even easier.



Battery Operation

With up to 4 hours of battery operation, you are ready in case your power supply is not reliable.

Watch the video now

► www.mt.com/MLT-Analytical

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
ML54T	52 g	0.1 mg	0.1 mg	0.2 mg	160 mg	Ø 90	30243391
ML104T	120 g	0.1 mg	0.1 mg	0.2 mg	160 mg	Ø 90	30243394
ML204T	220 g	0.1 mg	0.1 mg	0.2 mg	160 mg	Ø 90	30243397
ML304T	320 g	0.1 mg	0.1 mg	0.2 mg	160 mg	Ø 90	30243400

¹ Guaranteed value, nominal load

² Guaranteed value

³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load

ME-T Analytical Balances

Designed for Simplicity

Access your applications easily from the home screen, follow the on-screen guidance, and send your results to a printer or PC using built-in functions. ME-T analytical and precision balances are designed to make your weighing tasks simple, fast and efficient.

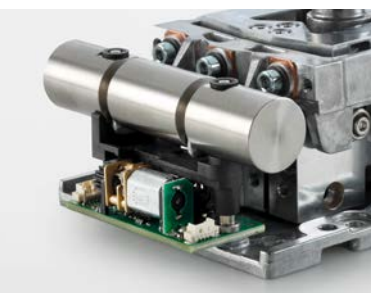
With robust construction, durable components and overload protection, ME-T balances will deliver reliable results for years to come.

Intuitive Touchscreen Operation



The 4.5-inch color touchscreen interface is simple and intuitive and can be operated while wearing gloves. Instructions and graphics guide you through your weighing procedures, helping to reduce errors.

Automatic Adjustment



The Electromagnetic Force Compensation (EMFC) weighing cell incorporates FACT which adjusts the balance automatically using internal weights to ensure your results are accurate even when the ambient temperature changes.

Guided Applications



The 10 built-in applications are easily accessed from the home screen. On-screen guidance is provided so you can quickly start working on checkweighing, density determination, statistics, formulation and more.

Accurate Results	Electromagnetic Force Compensation (EMFC) weighing cell FACT – fully automatic internal adjustment ¹ Fast settling times Metal bottom housing and stainless steel platform/pan Overload protection
Efficient Operation	4.5-inch color TFT touchscreen 10 built-in applications, including density and formulation Statistics – analysis of weighing data Rounded edges and smooth surfaces for easy cleaning Small footprint Front level indicator Hook for weighing below the balance
Quality Assurance	Sample ID avoids confusion among samples and provides traceability Passcode protection – only authorized users can make adjustments 15 available languages
Connectivity	3 interfaces: USB device, USB host and RS232, Bluetooth option Built-in direct function for easy data transfer

¹ Not available on models with external adjustment (ME-TE)



ME204T analytical balance



Easy Data Handling

Connectivity via USB, RS232 or optional Bluetooth makes data transfer easy and error-free. It is simple to connect a barcode reader and a printer, or even a PC, to the balance.



Robust and Durable

Robust construction protects against chemicals and rough handling.

Watch the video now

► www.mt.com/MET-Analytical

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
ME54T	52 g	0.1 mg	0.1 mg	0.2 mg	160 mg	Ø 90	30216540
ME104T	120 g	0.1 mg	0.1 mg	0.2 mg	160 mg	Ø 90	30216541
ME204T	220 g	0.1 mg	0.1 mg	0.2 mg	160 mg	Ø 90	30216542

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load
 All models are available as Legal for Trade versions. Models without internal test weights are also available (ExCal).

ME Analytical Balances

Everyday Essentials

ME analytical balances offer you all the essential functionalities you need to carry out your daily weighing tasks accurately and efficiently. One-touch balance adjustment and robust construction mean you can be sure of consistently reliable results, day after day.

High quality components, practical features and an affordable price tag make ME balances an essential in every laboratory.

Easy-Read Display



With a brilliant backlit display and large numbers, your weighing results are easy to read in all working environments.

High Quality Weighing Cell



With METTLER TOLEDO's EMFC weighing cell, you can be sure of accurate and reliable performance. The high stability provides fast results so you can get your tasks done quickly and with confidence.

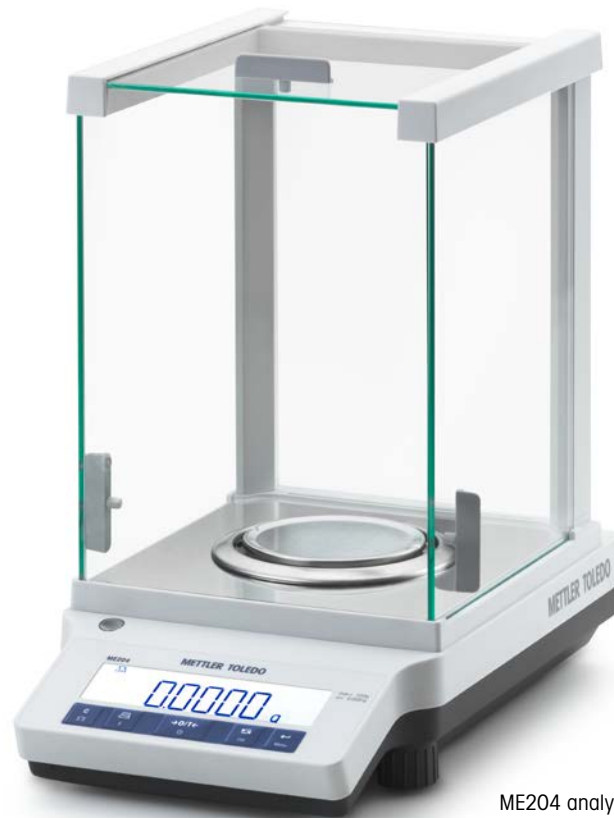
Built-In Adjustment



Maintain accuracy without external calibration weights. Internal test weights make it simple for you to test and adjust your balance at any time with just the touch of a button.

Accurate Results	Electromagnetic Force Compensation (EMFC) weighing cell Internal adjustment ¹ OIML/NTEP approved
Efficient Operation	Bright and clear LCD display Menu protection Date and time Secondary display option Front level indicator 16 weighing units Hook for weighing below the balance 10 built-in applications
Quality	Metal base Stainless steel platform and pan Overload protection Small footprint
Connectivity	RS232 interface Bluetooth option Built-in PC Direct function for easy data transfer

¹ Not available on models with external adjustment (ME-E)



ME204 analytical balance



Made for Intense Use

With a metal base, stainless steel weighing pan and overload protection, these balances can withstand intense use in tough environments. Smooth surfaces and rounded edges make them easy to clean and maintain.



Convenient Leveling

Leveling your balance is easy thanks to the large adjusting feet. The level indicator is at the front so it is easy to check the level and ensure your balance is working correctly.

► www.mt.com/ME-Analytical

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
ME54	52 g	0.1 mg	0.1 mg	0.2 mg	160 mg	∅ 90	30029068
ME104	120 g	0.1 mg	0.1 mg	0.2 mg	160 mg	∅ 90	30029067
ME204	220 g	0.1 mg	0.1 mg	0.2 mg	160 mg	∅ 90	30029066

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load
 All models are available as Legal for Trade versions. Models without internal test weights are also available (ExCal).

Precision Balances Portfolio

Accuracy, Productivity and Ergonomics

Excellence Level Balances

Weigh the smallest samples with utmost accuracy. Comprehensive quality assurance functions ensure right-first-time, audit-proof results. Combine with LabX for full data integrity.

XPR



Capacity up to 64 kg
Readability 0.1 mg – 1 g
Minimum weight 12 mg
USP minimum weight 120 mg

Outstanding Weighing Performance

Thanks to the high stability provided by SmartPan™ Pro and the superior weighing cell, fast settling times ensure high throughput even in harsh conditions.

Audit-Proof Results Every Time

The StatusLight, LevelControl, and GWP® Approved provide at-a-glance information to verify your results are valid and ready for audit any time.

Management of Users and Routine Tests

Implement your test schedules on the balance to be notified when tests are due. User profiles and passwords provide additional process security.

Automatic Data Handling

Benefit from automatic documentation, SOP user guidance on the balance and centralized management of instruments, tasks, and users. Assists with 21 CFR Part 11 compliance.

Consistent Workflows

Saved weighing methods offer a quick and convenient way to start tasks. Every user follows the same procedures and results are consistent and repeatable.

StatusLight

StatusLight uses color to provide instant information on the balance status. Green means it's safe to weigh and results will be valid, yellow is a warning, and red means an issue must be resolved.

XSR



Capacity up to 32 kg
Readability 1 mg – 1 g
Minimum weight 82 mg
USP minimum weight 820 mg

Get Results Faster Than Ever

The innovative SmartPan weighing pan provides exceptional stability to deliver even faster results. Weigh at 1-milligram readability without a draft shield.

Relax with Ergonomic Weighing Processes

Place your terminal at eye-level on the ErgoStand™ to make it easier to read and avoid excessive bending of the neck during extended balance use.

Automatic Data Handling

LabX saves all your results and process information automatically in a secure database. Instruments, tasks and users can be managed centrally.

Clean-Up in Seconds

The SmartPan weighing pan, the drip tray underneath, and the weighing terminal can be dismantled within seconds for proper and individual cleaning.

Multiple Built-In Interface Options

The integrated USB and Ethernet interfaces allow the balance to be connected to a network and to up to three peripheral devices at the same time. Weighing results can be simultaneously printed and transferred to an Excel document.

Advanced Level Balances

Meet your productivity targets thanks to great weighing performance, ergonomic design

MS-TS



Capacity up to 32 kg
Readability 1 mg – 1 g
Minimum weight 140 mg
USP minimum weight 1.4 g

Robust with High Precision

The balance offers a high-precision MonoBloc weighing cell and full metal housing resistant to chemicals.

Intuitive Touchscreen Operation

The large color touchscreen and 11 intuitive applications with user guidance in the MS-TS make routine weighing tasks simple and efficient.

Fast and Flexible Connectivity

LAN, USB, RS232 and optional WLAN/Bluetooth enable easy connection to a PC, IT system and peripheral devices.

Advanced Data Management

Save, print and export results and associated weighing data as a PDF, XML, CSV or TXT file.

Easy to Clean

Smooth, easy-clean surfaces help prevent cross-contamination.

features and an intuitive user interface. Enjoy fast and convenient weighing processes.

Standard Level Balances

High-quality construction and solid performance ensure consistent and precise weighing results. Your basic weighing tasks will be completed quickly and easily.

ML-T



Capacity up to 6 kg
Readability 1 mg – 0.1 g
Minimum weight 140 mg
USP minimum weight 1.4 g

Robust and Compact

A high-precision MonoBloc weighing cell in a compact design ensures accuracy.

User Management

Personalized user profiles provide security and ease of use.

Fast and Flexible Connectivity

LAN, USB, RS232 and optional WLAN/Bluetooth enable easy connection to a PC, IT system and peripheral devices.

Advanced Data Management

Save, print and export results and associated weighing data as an XML, CSV or TXT file.

ME-T



Capacity up to 6 kg
Readability 1 mg – 0.1 g
Minimum weight 140 mg
USP minimum weight 1.4 g

Intuitive Operation

The bright 4.5-inch color TFT touchscreen with clear icons and intuitive guidance enables users to operate it quickly.

Easy Data Transfer

USB, RS232, and optional Bluetooth enable easy connection to peripheral devices.

Reliable Performance

An Electromagnetic Force Compensation (EMFC) weighing cell with FACT technology tests and adjusts the balance automatically, ensuring results remain accurate and reliable.

ME



Capacity up to 5 kg
Readability 1 mg – 0.1 g
Minimum weight 140 mg
USP minimum weight 1.4 g

Robust and Durable

The balance provides a robust weighing cell with overload protection.

Easy to Clean

Smooth, easy-clean surfaces help to prevent cross-contamination.

Simple and Reliable

Trust in METTLER TOLEDO weighing technology for stable and accurate results.

PL-E



Capacity up to 6 kg
Readability 0.01 g – 0.1 g
Minimum weight 1.4 g

Compact

The balance offers a space-saving footprint that fits on the smallest benches.

Portable

It is solidly built and yet light enough to carry wherever you want to weigh.

Designed to Last

Robust housing, durable components and overload protection ensure a long balance lifetime.

XPR Precision Balances

Go Beyond Weighing

When security is a top priority, XPR balances deliver the accurate results you need as the foundation for your analyses. XPR precision balances deliver outstanding weighing performance and support the highest requirements for data integrity and compliance. Our options and accessories enable you to create a solution tailored to your process requirements.

Outstanding Performance



The supreme stability of XPR precision balances is provided by SmartPan Pro and a superior weighing cell. You are assured of fast settling times and higher throughput, even in harsh conditions.

Audit-Proof Results



StatusLight, LevelControl, and GWP® Approved provide at-a-glance information to verify your results are valid and ready for audit any time.

Safe and Easy Cleaning



The SmartPan Pro and drip tray lift off and are dishwasher safe. The balance body resists harsh chemicals, while smooth surfaces and rounded edges make it easy to clean. The supplied covers provide additional protection for the display and balance housing.

Accurate Results	High-resolution technology SmartPan weighing pan (no draft shield) ¹	Seamless Process	Easy connectivity and data export: 4 × USB, 1 LAN
Efficient Operation	7-inch color touchscreen, glove compatible Storage of weighing methods (including sample series and tolerances) Integrated results notepad		Easy connection of peripheral devices: printers, PC, barcode readers, footswitches and sensors Integrated label editor, alphanumeric and barcode
Quality Assurance	GWP® Approved built-in quality assurance monitoring Customizable tolerance profiles MinWeigh warning function Adjustment and routine test history Balance ready StatusLight LevelControl: level warning with graphical leveling guide Temperature and time programmable internal adjustment (proFACT) User management Change history log Alibi memory (only available on Legal for Trade models)		Export of process and results data to XML or Excel Web service
		Automation Options	LabX laboratory software

¹ Models with 1 mg, 5 mg and 10 mg readability



Go Digital with LabX

LabX offers on-screen user guidance, automatic documentation, and central management of users and tasks. Weighing results and metadata are saved in a secure database, helping to ensure traceability, data integrity, and compliance with 21 CFR Part 11.



Consistent Workflows

To simplify tasks and ensure consistent, efficient workflows, the method library has templates to save settings and tolerances as individual weighing methods. Users follow the same procedures to help ensure results are always within tolerance.



XPR1203SN precision balance

Watch the video now

www.mt.com/XPR-Precision

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
XPR204S	210 g	0.1 mg	0.2 mg	0.2 mg	240 mg	90×90	30315631
XPR404S	410 g	0.1 mg	0.1 mg	0.2 mg	120 mg	90×90	30315628
XPR504S	510 g	0.1 mg	0.1 mg	0.3 mg	140 mg	90×90	30315652
XPR303SN	310 g	1 mg	0.8 mg	2 mg	820 mg	127×127	30316446
XPR303S	310 g	1 mg	0.8 mg	2 mg	820 mg	127×127	30315753
XPR603S	610 g	1 mg	0.8 mg	2 mg	820 mg	127×127	30316504
XPR603SN	610 g	1 mg	0.8 mg	2 mg	820 mg	127×127	30316540
XPR1203S	1,210 g	1 mg	0.8 mg	2 mg	820 mg	127×127	30316563
XPR1203SN	1,210 g	1 mg	0.8 mg	2 mg	820 mg	127×127	30710392
XPR2003S	2.1 kg	1 mg	1 mg	3 mg	1.2 g	127×127	30710397
XPR3003S	3.1 kg	1 mg	0.9 mg	6 mg	1.2 g	127×127	30316701
XPR5003S	5.1 kg	1 mg	1.4 mg	6 mg	1.8 g	127×127	30316990
XPR3004SD5	3.1 kg	0.5 mg	0.8 mg	4 mg	800 mg	127×127	30710393
XPR6003SD5	6.1 kg	5 mg	6 mg	7 mg	6 g	172×203	30316548
XPR12003SD5	12.1 kg	5 mg	6 mg	20 mg	6 g	172×203	30710394
XPR2003SC	2.3 kg	1 mg	1 mg	2 mg	1.2 g	127×127	30137627
XPR2004SC	2.3 kg	0.1 mg	0.6 mg	1 mg	600 mg	127×127	30317628
XPR5003SC	5.1 kg	1 mg	2 mg	3 mg	2 g	127×127	30317629
XPR5004SC	5.1 kg	0.1 mg	1.3 mg	1 mg	1.3 g	127×127	30317640
XPR10003SC	10.1 kg	1 mg	3.5 mg	7 mg	4 g	127×127	30317641
XPR26003LC	26.1 kg	1 mg	6 mg	20 mg	8 g	∅ 220	30317642
XPR32003LD5C	32.1 kg	5 mg	15 mg	20 mg	13 g	280×360	30317643
XPR64003LD5C	64.1 kg	5 mg	15 mg	50 mg	20 g	∅ 220	30317644
XPR64002LC	64.1 kg	10 mg	35 mg	50 mg	36 g	280×360	30317645
XPR1202S	1,210 g	10 mg	8 mg	20 mg	8.2 g	172×203	30317123
XPR2002S	2.1 kg	10 mg	8 mg	20 mg	8.2 g	172×203	30316996
XPR4002S	4.1 kg	10 mg	8 mg	20 mg	8.2 g	172×203	30317269
XPR6002S	6.1 kg	10 mg	8 mg	20 mg	8.2 g	172×203	30317428
XPR6002S DeltaRange	1.2 kg → 6.1 kg	10/100 mg	8/60 mg	60 mg	8.2 g	172×203	30317458
XPR8002S	8.1 kg	10 mg	8 mg	20 mg	8.2 g	172×203	30317466
XPR12002S	12.1 kg	10 mg	8 mg	20 mg	8.2 g	172×203	30710395
XPR15002L	15.1 kg	10 mg	15 mg	20 mg	20 g	172×205	30317522
XPR20002L DeltaRange	4.2 kg → 20.1 kg	10/100 mg	30/80 mg	60 mg	36 g	172×205	30317526
XPR4001S	4.1 kg	0.1 g	80 mg	60 mg	82 g	190×223	30317447
XPR8001S	8.1 kg	0.1 g	80 mg	100 mg	82 g	190×223	30317511
XPR12001S	12.1 kg	0.1 g	80 mg	100 mg	82 g	190×223	30710396
XPR10001L	10.1 kg	0.1 g	80 mg	200 mg	82 g	280×360	30317530
XPR16001L	16.1 kg	0.1 g	80 mg	200 mg	82 g	280×360	30317542
XPR32001L	32.1 kg	0.1 g	80 mg	300 mg	82 g	280×360	30316292
XPR64001L	64.1 kg	0.1 g	100 mg	500 mg	82 g	280×360	30316477
XPR32000L	32.1 kg	1 g	600 mg	600 mg	820 g	280×360	30316485
XPR64000L	64.1 kg	1 g	600 mg	600 mg	820 g	280×360	30316493

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load

XSR Precision Balances

Fast, Reliable and Robust

Even under harsh weighing conditions, you can rely on these robust balances to help you meet your productivity targets. XSR precision balances are ideal when you have high sample throughput and tight deadlines. You can rely on XSR to get the job done quickly, and without errors.

Excellence

High-Performance Weighing



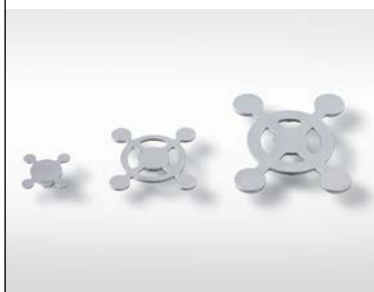
The high-performance weighing cell and SmartPan weighing pan provide high stability and outstanding repeatability, even when working in fume hoods.

Efficient Touchscreen Operation



The touchscreen interface, easy-access menus, results notepad, and saved weighing methods make balance operation intuitive and efficient.

Patented SmartPan Weighing Pan



SmartPan provides exceptional stability, ensuring faster and more accurate results. You can even weigh at 1-milligram readability without a draft shield.

Accurate Results	High-resolution weighing cell technology SmartPan weighing pan ¹
Efficient Operation	4.3-inch color touchscreen, glove compatible Storage of weighing methods Integrated results notepad
Quality Assurance	Customizable tolerance profiles MinWeigh warning function Balance ready StatusLight LevelControl: level warning with graphical leveling guide Temperature and time programmable adjustment (proFACT) Password protected configuration
Seamless Process	Multiple interfaces for easy connectivity and data export: 4 x USB, 1 LAN Easy connection of peripheral devices: printers, PC, barcode readers, footswitches and sensors Export of process and results data to XML or Excel Web service Export weighing results as XML to a USB memory stick
Automation Options	LabX laboratory software

¹ Models with 1 mg and 10 mg readability



XSR603S precision balance



Ergonomic Operation

Placing the display at eye-level on the adjustable ErgoStand saves space and eliminates excessive bending of the neck. Optional remote switches simplify workflows, reduce process steps, and leave your hands free to handle samples and equipment.



Safe and Easy Cleaning

The supplied covers protect the terminal and housing and are easily replaced when soiled. The SmartPan and drip tray lift off and are dishwasher safe. The balance body resists harsh chemicals, while smooth surfaces and rounded edges make it easy to clean.

Watch the video now

www.mt.com/XSR-Precision

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
XSR303SN	310 g	1 mg	0.9 mg	2 mg	1.0 g	127×127	30316500
XSR303S	310 g	1 mg	0.9 mg	2 mg	1.0 g	127×127	30315757
XSR603SN	610 g	1 mg	0.9 mg	2 mg	1.0 g	127×127	30316544
XSR603S	610 g	1 mg	0.9 mg	2 mg	1.0 g	127×127	30316497
XSR1203S	1,210 g	1 mg	0.8 mg	2 mg	820 mg	127×127	30316567
XSR1202S	1,210 g	10 mg	8 mg	20 mg	8.2 g	172×205	30317127
XSR2002S	2.1 kg	10 mg	8 mg	20 mg	8.2 g	172×205	30317407
XSR4002S	4.1 kg	10 mg	8 mg	20 mg	8.2 g	172×205	30317443
XSR6002S	6.1 kg	10 mg	8 mg	20 mg	8.2 g	172×205	30317453
XSR6002S DeltaRange	← 1.2 kg → 6.1 kg	10/100 mg	8/60 mg	60 mg	10 g	172×205	30317462
XSR10002S	10.1 kg	10 mg	8 mg	20 mg	8.2 g	172×205	30317437
XSR4001S	4.1 kg	0.1 g	80 mg	60 mg	82 g	190×223	30317501
XSR6001S	6.1 kg	0.1 g	80 mg	60 mg	82 g	190×223	30317496
XSR8001S	8.1 kg	0.1 g	80 mg	100 mg	82 g	190×223	30317515
XSR10001S	10.1 kg	0.1 g	80 mg	100 mg	82 g	280×360	30317487
XSR10001L	10.1 kg	0.1 g	80 mg	200 mg	82 g	280×360	30317536
XSR16001L	16.1 kg	0.1 g	80 mg	200 mg	82 g	280×360	30317549
XSR32001L DeltaRange	← 6.4 kg → 32.1 kg	0.1/1 g	80/600 mg	300 mg	82 g	280×360	30316472
XSR32001L	32.1 kg	0.1 g	80 mg	300 mg	82 g	280×360	30316297
XSR16000L	16.1 kg	1 g	600 mg	600 mg	820 g	280×360	30316481
XSR32000L	32.1 kg	1 g	600 mg	600 mg	820 g	280×360	30316489

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load

Large MS Precision Balances

Tough Performers Built to Last

Accommodating loads of up to 32 kilograms, MS large-platform precision balances are built to take on your toughest jobs. The MonoBloc weighing cell, very robust design and extreme overload protection ensure you get reliable results in even the most challenging industrial environments.

Advanced

Robust Construction



The tough metal housing and extreme overload protection of more than 100 kilograms safeguard your balance when working with heavy sample containers. The large weighing pan provides extra convenience.

Chemical Resistance



The weighing pan and balance housing are resistant to the harshest of chemicals, including acetone. This helps to ensure a long balance lifetime.

Easy Cleaning



The balance housing is cleverly designed with smooth surfaces and round edges, making it easy to clean. User safety is improved and the risk of cross-contamination is reduced.

Accurate Results	MonoBloc weighing cell and overload protection FACT – fully automatic temperature-controlled internal adjustment Full metal housing
Efficient Operation	HCD high contrast display (18 mm high digits) Easy cleaning thanks to smooth wipe-clean surfaces SmartKeys: programmable keys for shortcuts Large platform for convenient weighing of bulky items
Quality Assurance	MenuLock – balance settings can be password protected
Seamless Process	2 interfaces – USB and RS232 Bluetooth option PC Direct option and EasyDirect Balance application software for easy data transfer



MS32001L precision balance



Clever Design Details

For example, the groove in the top of the weighing pan allows cylindrical samples to be placed directly on the balance without the need for an extra container.



Easy Stocktaking

The large weighing pan and built-in piece-counting application make these large platform balances perfect for logging your inventory.



Weigh Below the Balance

For special applications, this special hook enables you to weigh heavy items by hanging them from underneath the balance (Material No. 11132565).

www.mt.com/MSL-Precision

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
MS12001L	12,200 g	0.1 g	0.1 g	0.2 g	140 g	351×245	11124573
MS16001L	16,200 g	0.1 g	0.1 g	0.2 g	140 g	351×245	11124576
MS32001L	32,200 g	0.1 g	0.1 g	0.3 g	140 g	351×245	11124588
MS32000L	32,200 g	1 g	1 g	1 g	820 g	351×245	11124701

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load

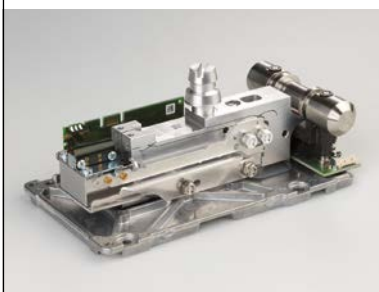
Small MS Precision Balances

Engineered for Reliable Performance

With a full metal housing, the robust construction of the MS small-platform precision balances makes them perfect for heavier tasks in the laboratory or out on the factory floor. The unique MonoBloc weighing cell delivers the accuracy you need and is fully protected against accidental overload.

Advanced

Proven Weighing Cell



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

Robust Metal Housing



The full balance housing is die-cast aluminum which not only protects the weighing cell from environmental influences and impacts but also resists harsh chemicals, including acetone.

Fast Results



With 3 fixed feet and 2 LevelLock stands, MS balances are easy to level and sit solidly on your workbench. With the balance less susceptible to vibration, you get faster results.

Accurate Results	MonoBloc weighing cell and overload protection FACT – fully automatic temperature-controlled internal adjustment Full metal housing
Efficient Operation	7-inch extra-large color TFT touchscreen (18 mm high digits) Graphical display of statistics for improved management and evaluation of weighing data 11 easy-to-use applications for simplified workflows and increased efficiency Easy cleaning thanks to smooth wipe-clean surfaces LevelLock – greater balance stability
Quality Assurance	ISO-Log records important changes, e.g. adjustments, leveling status Barcode reader support and ID handling to reduce errors and increase productivity User management to customize access rights and improve productivity and traceability Built-in level control function and leveling user guidance
Seamless Process	LAN, USB host, USB device, RS232 and optional WLAN/Bluetooth Transfer data to PC, FTP server, USB memory stick or printer in formats including comprehensive PDF report and XML file PC Direct application for easy data transfer (no software needed) EasyDirect Balance software for comprehensive and customized data transfer Web access service for remote control and second screen



MS3002TS 0.01 g precision balance without draft shield



MS603TS 1 mg precision balance with draft shield



Large Color Touchscreen

The 7-inch extra-large color TFT touchscreen display is operable through cotton, silicone and rubber gloves. An intuitive user interface and 18 millimeter high digits bring comfort to your daily tasks.



Advanced Data Management

LAN, USB host, USB device, RS232 and optional WLAN/Bluetooth interfaces enable simple and comprehensive data handling. Transfer data to PC, FTP server, USB memory stick or printer in formats including comprehensive PDF reports and XML files.



Convenient Integrated Applications

11 built-in applications, including formulation, checkweighing and counting, guide you step-by-step through your weighing procedures, support you with data management and help improve process security. Evaluate your results easily with the statistics function and on-screen charts.

www.mt.com/MS-Precision

MS-TS Precision Balances 1 mg

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
MS303TS	320 g	0.001 g	0.001 g	0.002 g	1.4 g	127 × 127	30133525
MS403TS	420 g	0.001 g	0.001 g	0.002 g	1.4 g	127 × 127	30133526
MS603TS	620 g	0.001 g	0.001 g	0.002 g	1.4 g	127 × 127	30133527
MS1003TS	1,020 g	0.001 g	0.001 g	0.002 g	1.4 g	127 × 127	30133528

MS-TS Precision Balances 0.01 g

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
MS1602TS	1,620 g	0.01 g	0.01 g	0.02 g	14 g	170 × 200	30133529
MS3002TS	3,200 g	0.01 g	0.01 g	0.02 g	14 g	170 × 200	30133530
MS4002TS	4,200 g	0.01 g	0.01 g	0.02 g	14 g	170 × 200	30133531
MS6002TS	6,200 g	0.01 g	0.01 g	0.02 g	14 g	170 × 200	30133533
MS4002TS DeltaRange	← 820 g → 4,200 g	0.1/0.01 g	0.1/0.01 g	0.08 g	14 g	170 × 200	30133532
MS6002TS DeltaRange	← 1,220 g → 6,200 g	0.1/0.01 g	0.1/0.01 g	0.08 g	14 g	170 × 200	30133534
MS12002TS	12,200 g	0.01 g	0.01 g	0.025 g	14 g	170 × 200	30133535
MS8001TS	8,200 g	0.1 g	0.1 g	0.2 g	140 g	190 × 226	30133536

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load

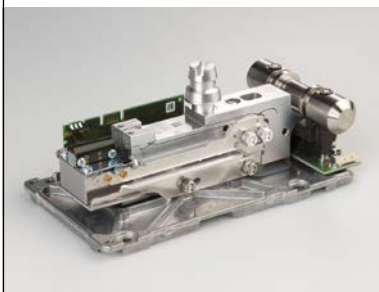
ML-T Precision Balances

Big Features Go Compact

Whether you work in a busy laboratory or out on the factory floor, space is always at a premium. With the smallest-in-class footprint and larger than average weighing pan, ML-T balances give you the room you need to carry out your daily tasks efficiently.

Advanced

Proven Weighing Cell



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

Compact and Convenient



The compact design makes the most of your workspace, giving you the extra space you need to have all your equipment and samples nearby.

Intuitive Operation

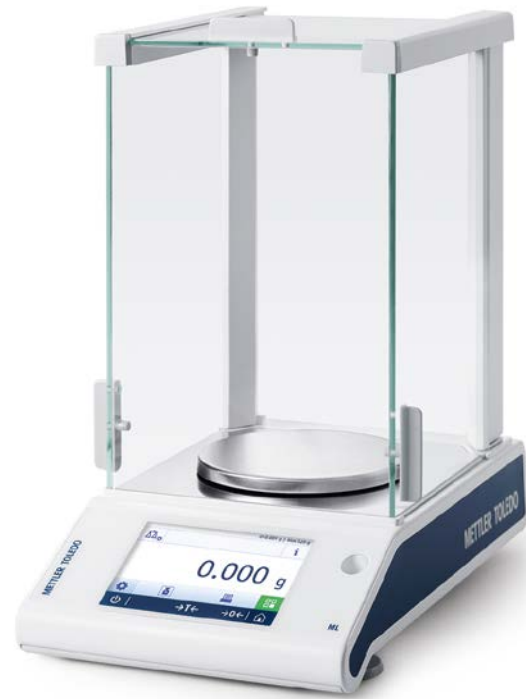


The 4.5-inch color TFT touchscreen with clear icons and intuitive guidance enables users to operate the balance quickly even while wearing cloth or rubber gloves. Multilingual text and graphics are included.

Accurate Results	<ul style="list-style-type: none"> MonoBloc weighing cell with overload protection FACT – fully automatic temperature-controlled internal adjustment Metal base
Efficient Operation	<ul style="list-style-type: none"> 4.5-inch color TFT touchscreen 10 easy-to-use applications for simplified workflows and increased efficiency Statistics option for improved evaluation of weighing data Easy cleaning thanks to smooth wipe-clean surfaces Extra-small footprint Battery operation
Quality Assurance	<ul style="list-style-type: none"> ISO-Log records important changes, e.g. adjustments, leveling status Barcode reader support and ID handling to reduce errors and increase productivity User management to customize access rights and improve productivity and traceability Built-in level control function and leveling user guidance
Seamless Process	<ul style="list-style-type: none"> LAN, USB host, USB device, RS232 and optional WLAN/Bluetooth Transfer data to PC, FTP server, USB memory stick or printer in formats including comprehensive CSV and XML files PC Direct application for easy data transfer (no software needed) EasyDirect Balance software for comprehensive and customized data transfer



ML4002 0.01 g precision balance without draft shield



ML503T 1 mg precision balance with draft shield



Efficient Weighing-In

The weighing-in guide helps the operator dose to target. The green screen indicates at a glance that the weighing result lies within the process tolerances.



Advanced Data Management

LAN, USB host, USB device, RS232 and optional WLAN/Bluetooth interfaces enable simple and comprehensive data handling. Transfer data to PC, FTP server, USB memory stick or printer in formats including comprehensive CSV and XML files.



Battery Operation

With up to 8 hours of battery operation, you can take your balance anywhere and be ready in case your power supply is not reliable.

Watch the video now
www.mt.com/MLT-Precision

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
ML203T	220 g	1 mg	1 mg	2 mg	1.4 g	∅ 120	30243403
ML303T	320 g	1 mg	1 mg	2 mg	1.4 g	∅ 120	30243406
ML503T	520 g	1 mg	1 mg	2 mg	1.4 g	∅ 120	30243409
ML802T	820 g	0.01 g	0.01 g	0.02 g	14 g	170×190	30243412
ML1602T	1,620 g	0.01 g	0.01 g	0.02 g	14 g	170×190	30243415
ML3002T	3,200 g	0.01 g	0.01 g	0.02 g	14 g	170×190	30243418
ML4002T	4,200 g	0.01 g	0.01 g	0.02 g	14 g	170×190	30243421
ML6002T	6,200 g	0.01 g	0.01 g	0.02 g	14 g	170×190	30243424
ML3001T	3,200 g	0.1 g	0.1 g	0.2 g	140 g	170×190	30243427
ML6001T	6,200 g	0.1 g	0.1 g	0.2 g	140 g	170×190	30243430

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load

ME-T Precision Balances

Designed for Simplicity

Access your applications easily from the home screen, follow the on-screen guidance, and send your results to a printer or PC using the built-in functions. ME-T precision balances are designed to make your weighing tasks simple, fast and efficient.

With robust construction, durable components and overload protection, ME-T balances will deliver reliable results for years to come.

Color Touchscreen



The 4.5-inch color touchscreen interface is simple and intuitive and can be operated while wearing gloves. Instructions and graphics guide you through your weighing procedures, helping to reduce errors.

Automatic Adjustment



The Electromagnetic Force Compensation technology (EMFC) weighing cell incorporates FACT which adjusts the balance automatically using internal weights to ensure your results are accurate even when the ambient temperature changes.

Guided Applications



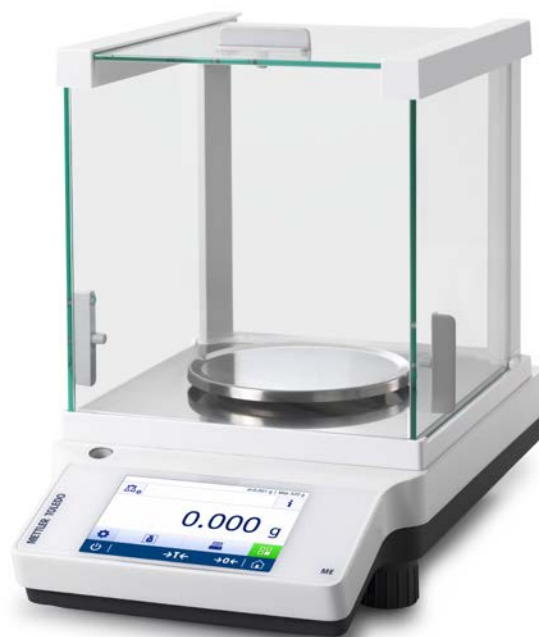
The 10 built-in applications are easily accessed from the home screen. On-screen guidance is provided so you can quickly start working on checkweighing, density determination, statistics, formulation and more.

Accurate Results	Electromagnetic Force Compensation (EMFC) weighing cell FACT automatic internal adjustment ¹ OIML/NTEP approved
Efficient Operation	Bright 4.5-inch color TFT touchscreen Statistical data analysis Passcode protection Secondary display option Front level indicator 16 weighing units Hook for weighing below the balance 10 built-in applications
Quality	Metal base Stainless steel platform and pan Overload protection
Connectivity	3 interfaces: USB device, USB host, RS232 Bluetooth option Built-in PC Direct function for easy data transfer

¹ Not available on models with external adjustment (ME-TE)



ME4002T 0.1 g precision balance without draft shield



ME303T 1 mg precision balance with draft shield



Multiple Interfaces

The USB and RS232 ports, plus the optional Bluetooth adapter, enable you to connect a barcode reader, printer and even a PC. Data transfer is quick and easy, and transcription errors are avoided.



Passcode Protection

Benefit from additional security with the possibility to assign a passcode to protect balance settings. You can therefore restrict access to settings to authorized personnel only and avoid accidental changes.

► www.mt.com/MET-Precision

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
ME103T	120 g	1 mg	1 mg	2 mg	1.4 g	Ø 120	30216545
ME203T	220 g	1 mg	1 mg	2 mg	1.4 g	Ø 120	30216547
ME303T	320 g	1 mg	1 mg	2 mg	1.4 g	Ø 120	30216550
ME403T	420 g	1 mg	1 mg	2 mg	1.4 g	Ø 120	30216554
ME503T	520 g	1 mg	1 mg	2 mg	1.4 g	Ø 120	30243388
ME1002T	1,200 g	0.01 g	0.01 g	0.02 g	14 g	180×180	30216558
ME2002T	2,200 g	0.01 g	0.01 g	0.02 g	14 g	180×180	30216560
ME3002T	3,200 g	0.01 g	0.01 g	0.02 g	14 g	180×180	30216562
ME4002T	4,200 g	0.01 g	0.01 g	0.02 g	14 g	180×180	30216564
ME5002T	5,200 g	0.01 g	0.01 g	0.02 g	14 g	180×180	30243383
ME6002T	6,200 g	0.01 g	0.01 g	0.02 g	14 g	180×180	30704479
ME4001T	4,200 g	0.1 g	0.1 g	0.2 g	140 g	180×180	30216567

¹ Guaranteed value, nominal load ² Guaranteed value ³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load
 All models are available as Legal for Trade versions. Models without internal test weights are also available (ExCal).

ME Precision Balances

Everyday Essentials

ME precision balances offer you all the essential functionalities you need to carry out your daily weighing tasks accurately and efficiently. One-touch balance adjustment and robust construction mean you can be sure of consistently reliable results, day after day.

High quality components, practical features and an affordable price tag make ME balances an essential in every laboratory.

Easy-Read Display



With a brilliant backlit display and large numbers, your weighing results are easy to read in all working environments.

High Quality Weighing Cell



With METTLER TOLEDO's EMFC weighing cell, you can be sure of accurate and reliable performance. The high stability provides fast results so you can get your tasks done quickly and with confidence.

Built-In Adjustment



Maintain accuracy without external calibration weights. Internal test weights make it simple for you to test and adjust your balance at any time with just the touch of a button.

www.mt.com/ME-Precision

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	USP Min. Weight ³	Weighing Pan (mm)	Material No.
ME103	120 g	1 mg	1 mg	2 mg	1.4 g	∅ 120	30029087
ME203	220 g	1 mg	1 mg	2 mg	1.4 g	∅ 120	30029086
ME303	320 g	1 mg	1 mg	2 mg	1.4 g	∅ 120	30029085
ME403	420 g	1 mg	1 mg	2 mg	1.4 g	∅ 120	30029084
ME503	520 g	1 mg	1 mg	2 mg	1.4 g	∅ 120	30704503
ME802	820 g	0.01 g	0.01 g	0.02 g	14 g	180×180	30029110
ME1002	1,200 g	0.01 g	0.01 g	0.02 g	14 g	180×180	30029109
ME2002	2,200 g	0.01 g	0.01 g	0.02 g	14 g	180×180	30029108
ME3002	3,200 g	0.01 g	0.01 g	0.02 g	14 g	180×180	30029107
ME4002	4,200 g	0.01 g	0.01 g	0.02 g	14 g	180×180	30029106
ME5002	5,200 g	0.01 g	0.01 g	0.02 g	14 g	180×180	30704501
ME4001	4,200 g	0.1 g	0.1 g	0.2 g	140 g	180×180	30029883

¹ Guaranteed value, nominal load ² Guaranteed value

³ Typical minimum sample weight according to USP Chapter 41; measurement at ≤5% load

All models are available as Legal for Trade versions. Models without internal test weights are also available (ExCal).

PL-E Precision Balances

Compact and Portable

PL-E balances offer you the convenience of being able to weigh wherever and whenever you want. These light yet solidly built balances can be operated using batteries so you can conveniently take your balance wherever you need to weigh. Their compact size is also ideal when you have very little room available.

Small Footprint

The ultra-sleek design makes PL-E balances perfect for small spaces. These compact balances are solidly built from quality materials yet are still light enough to pick up and carry anywhere.



PL1502E portable precision balance

Battery Operation



When you need to weigh on-the-go or a reliable power supply is not available, these balances can be operated using batteries, giving you total weighing flexibility.

Bright Display



The backlit display is easy to read in both bright and dim lighting conditions. Plus, the large numbers mean the weight result can be seen clearly from many angles.

Durable in Action



These tough balances have a scratch-resistant stainless steel weighing pan and smooth, easy-clean surfaces. Overload protection safeguards the balance in use so you can rely on great performance day after day.

www.mt.com/PLE-Precision

Model	Maximum Capacity	Readability	Repeatability ¹	Linearity ²	Dimensions (W×D×H)	Material No.
PL202E ³	220 g	0.01 g	0.01 g	0.02 g	194 × 225 × 67	30113827
PL602E	620 g	0.01 g	0.01 g	0.02 g	194 × 225 × 67	30113826
PL1002E	1,200 g	0.01 g	0.01 g	0.02 g	194 × 225 × 67	30113824
PL1502E	1,520 g	0.01 g	0.01 g	0.02 g	194 × 225 × 67	30113823
PL6001E	6,200 g	0.1 g	0.1 g	0.2 g	194 × 225 × 67	30113829

¹ Guaranteed value, nominal load ² Guaranteed value ³ Available only in selected countries

Installation and Qualification

Ensure Productivity and Compliance

You may be tempted to simply connect your weighing instrument to the power supply, switch it on and start weighing. However, your balance or moisture analyzer is a sophisticated piece of weighing equipment. Correct installation and configuration ensures your instrument performs as intended so that you avoid weighing errors, rework, and waste as well as associated financial losses.

METTLER TOLEDO's professional installation and qualification services help you to ensure your instrument is in an optimum location, delivers accurate weight results and complies with your internal and external regulations right from the start.

You benefit from:

- Immediate deployment
- Correct setup
- Professional qualification
- Initial user training
- Audit-proof documentation

Optimum Location



Is your instrument installed in the optimum location?

External influences such as drafts, direct sunlight, or an unstable table can lead to drift and random errors. The consequences are inaccurate and inconsistent weighing results.

Audit-Proof Documentation



Has your instrument been professionally installed and qualified?

In addition to in-depth operational testing and initial calibration, we provide audit-proof documentation that complies with regulations such as GMP, GLP, and ISO.

Error-Free Operation



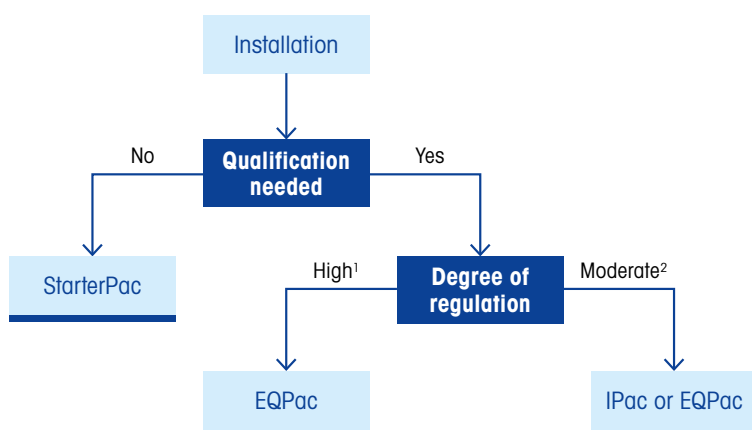
Has staff been trained on the new instrument?

Initial user training is included so that operators are familiar with how to use the new instrument correctly. You get up and running faster and operational errors are minimized.



Choose the Installation Pac that fulfills your quality and regulatory requirements

METTLER TOLEDO offers three different installation and qualification packages called EQPac, IPac and StarterPac. Each of them includes installation, initial user training and a different level of qualification, the complexity of which is proportional to the degree of industry regulation.



¹ For example GMP/GLP, USP, Ph. Eur.

² For example ISO, HCCP, Internal

EQPac is used in highly regulated industries where audits are carried out and all steps of the lifecycle need to be documented with a high level of detail.

IPac is suitable when installation activities need to be documented for quality standards.

StarterPac is a proof of installation with release suitable for routine operation in environments with varied levels of regulatory requirements.

Calibration and Routine Testing

Ensure Accurate Weighing Over Time

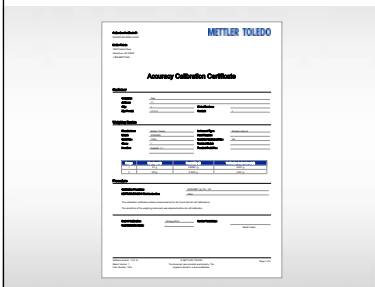
Having carefully selected your balance to ensure it meets your process requirements, how can you be sure that your results remain accurate over time? Do you know which routine tests and calibrations are necessary to mitigate risks and pass any audit?

The Accuracy Calibration Certificate (ACC) assesses balance performance by documenting measurement uncertainty in use. Various annexes are available as an interpretation of the calibration results, each giving a clear pass/fail statement for certain tolerances applied.

The GWP® Certificate annex sets a new benchmark in weighing accuracy by linking the performance of your balance to your specific process requirements. This annex documents that your instrument is fit-for-purpose and can produce the accuracy required for your process.

To ensure ongoing accuracy and compliance, GWP® Verification provides you with a risk-based, audit-proof routine testing and calibration plan.

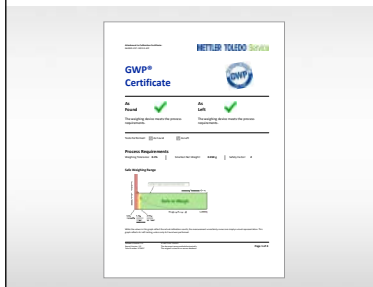
Accuracy Calibration Certificate



How does your balance perform on-site?

With the Accuracy Calibration Certificate (ACC) we measure the performance (measurement uncertainty) of the instrument over the entire weighing range.

GWP® Certificate



Is the instrument fit-for-purpose?

With the GWP® Certificate we can help you determine whether the balance meets your requirements. This documents that the balance is fit for purpose and used within the safe weighing range.

GWP® Verification



How can you maintain accuracy over time?

Based on a risk assessment, GWP® Verification helps you establish a routine testing plan to maintain consistent quality and reduce costs. It also provides you with regulatory compliance documentation to pass audits.



Confirmation that your instrument can produce required weighing accuracy from the start and throughout routine operation leads to:



✓ **Consistent quality**

- Consistency of product quality
- Reproducibility of results



✓ **Reduced costs**

- Minimized material waste
- Less rework and lower costs



✓ **Full compliance**

- Audit-proof documentation
- Appropriate QM processes

Extend Your Equipment's Lifetime

ExtendedCare

An **Extended Care** agreement provides you with full protection against instrument breakdown during the first 24 months after installation. Two preventive maintenance visits by our factory-trained service technicians are also included, providing you with full budgetary control by avoiding unplanned expenses. You will also receive access to our technical assistance hotline and benefit from priority on-site intervention.

More information on page 23.

Applications and Accessories

Small Details. Big Difference.





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	Balances 101–105
Weights	Test Weights 106–118
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Scan this code for more information.

► www.mt.com/Accessories

Density Determination

Gravimetric Methods Ensure Accuracy

Quickly convert your analytical or precision balance for accurate density determination of solid, liquid and viscous substances. Whether you use the buoyancy technique, the displacement principle or the pycnometer method, density determination is easy and efficient.

Quick and Easy Installation



By simply removing the balance weighing pan, the density kit can be installed on your balance in a few simple steps.

Fast and Secure Processes



The built-in density application on our balances provides user guidance, collects results, calculates density values and allows statistical evaluation of a measurement series. Five methods are included.



Density kit

Density Kits

Balance	Description	Material No.
XPR/XSR precision, S-platform (1 mg and 0.1 mg models)	Density kit XPR/XSR precision	30300933
XPR/XSR analytical	Density kit XPR/XSR analytical	30460852
Advanced and Standard balances	Density kit Advanced and Standard	30535760

Density Kit Accessories (Compatible with All Kits)

Description	Material No.
Sinker 10 mL	210260
Sinker 10 mL with calibration certificate	210672
Thermometer	238767
Thermometer with calibration certificate	11132685
Recalibration sinker 10 mL	210674



Sinker



Thermometer

► www.mt.com/Lab-Density

AntiStatic Solutions

Eliminate Electrostatic Effects

When your weight values are unstable or different for the same sample, the explanation is often simple: Electrostatic charges on the sample or container influence the weighing cell and lead to inaccurate results. AntiStatic kits immediately neutralize electrostatic charges to ensure stable and accurate results.

Integrated Flexibility



The optional ionizing module for XPR analytical balances can be set to work automatically if electrostatic charges are detected in the weighing chamber. Charges are removed in just a few seconds, ensuring stable and accurate results.

Trusted Results



By neutralizing electrostatic charges on samples and containers when the balance is loaded, dosing is faster and productivity is increased.

Workplace Safety



AntiStatic kits completely remove electrostatic charges. The scattering of powdery substances is eliminated, making dosing safer and preventing cross-contamination.

AntiStatic Kits

Balance	Description	Material No.
XPR/XSR balances	AntiStatic kit USB with stand and 1 compact electrode	30499859
XPR analytical balance ¹	Compact ionizer USB with adapter	30499860
XPR analytical balance	Internal ionizer module	30460823
All balances	Universal AntiStatic kit U-electrode	11107767

¹ Compatible also with XPR36/56

Single AntiStatic Components

Description	Material No.
Optional U-electrode large	11107764
Optional U-electrode small	11140161
Power supply for universal AntiStatic kit	11107766
Power supply for AntiStatic kit for powder dosing	11107763
Additional electrode for AntiStatic kit USB (30499859)	30496446



XPR226DR with internal ionizer module

► www.mt.com/Lab-AntiStatic

Manual Filter Weighing

Accurate Emissions Testing

METTLER TOLEDO's range of AntiStatic solutions and filter-weighing kits for XPR and XSR balances enable you to accurately determine particulate matter amounts on filters as small as 0.1 µg. Our innovative solutions help you ensure compliance with all US and EU norms.

Easy Assembly



Within seconds you can upgrade your XPR or XSR analytical balance into the perfect filter-weighing solution.

High Accuracy Filter Weighing



The weighing pan's innovative design enables easy placement of the filter in the ideal position. Two pan sizes are supplied (for Ø 47-millimeter and Ø 70-millimeter filters).



Environmental Monitoring

Filter kits fit onto all METTLER TOLEDO XPR and XSR analytical balances and are ideal for efficient routine work with filters up to 110 millimeters in diameter.



Emissions Determination

With its cutting-edge performance, the XPR ultra-microbalance equipped with a filter kit determines particulate matter on filters weighing as little as 0.1 µg.

Model	Filter Ø	Balance System	Readability	Typical Repeatability	Material No.
Large filter weighing kit ¹	<110 mm	XPR/XSR analytical balances	0.005 mg/0.01 mg	0.03 mg	30460857
ErgoClip filter holder	110–150 mm	XPR/XSR analytical balances	0.005 mg/0.01 mg	0.03 mg	30460844
Filter kit for XPR microbalances ¹	30–70 mm	XPR micro and ultra-microbalances	0.1 µg/1 µg	0.2 µg/0.6 µg	30300922

¹ Not compatible with XPR106DUH

Automated Filter Weighing

High-Throughput Emissions Testing

The innovative PFS-ONE filter robot ensures the fast and precise determination of particulate matter on filters at an accuracy of up to 0.1 µg. The PFS-ONE ensures that you can meet the increasingly tight specifications of international emissions standards.

Highest Accuracy Assured



At the heart of the PFS-ONE filter robot is the XPR2U ultra-micro-balance. With a readability of 0.1 µg you can be assured of unmatched precision and reliability.

Automatic Data Processing



The integrated data-matrix-code scanner automatically identifies the filter ID and ensures fast and easy operation. Sample security before and after processing is maintained.

Environmental Climate Control



The PFS-ONE is easily installed in existing laboratories as well as many environmental cabinets. Fully integrated systems, including environmental climate control and software, ensure compliance with international standards.



PFS-ONE filter robot

Model	Capacity	Filter Ø	Balance System	Resolution	Material No.
PFS-ONE	153 filters	47 mm	XPR2U	0.1 µg	30459990

Pipette Check

Fast and Easy with SmartCheck

Between calibrations, SmartCheck™ provides a fast, practical way to verify that a pipette is dispensing accurately. Reduce your risk of experimental failure and improve reproducibility. Check pipettes regularly for the best possible experimental results every time you use them.

Verify Any Brand of Pipette



Use SmartCheck to verify the performance of any brand of pipette that dispenses volumes between 10–1,000 µL. Verify the individual channels of multichannel pipettes, too.

Avoid Rework



Verifying the performance of a pipette before working with precious reagents saves time and money. In less than 60 seconds you will know if a pipette is aspirating and dispensing correctly.

Reliable Pipette Checks



SmartCheck runs a number of calculations, and then clearly indicates pass or fail.

Technical Specifications		SmartCheck		
Pipette test volumes		10, 20, 50, 100, 200, 300, 1,000 µL		
Pipette types		Single, multi (per channel)		
Test tolerance (factory default)		5% ¹ , adjustable 3–10% ²		
Test volumes		10 µL	20 µL	50, 100, 200, 300, 1,000 µL
Tolerance range per volume		9–10%	5–10%	3–10%
Measurement principle		Gravimetric, 4 volumetric measures, using laboratory Grade 3 water (ISO 3626) or better		
Reproducibility	Limit (SD)	0.15 µL @ 1,000 µL		
	Typical (SD)	0.08 µL @ 100 µL		

¹ Tolerance range not applicable for 10 µL

² With PipetteX software

	Material No.
SmartCheck – SLS1010S	30564095
Function test kit	30448961
RFID EasyScan™ LAN set	30448967
PipetteX™ software	www.mt.com/ PipetteX
Vessel and draft shield set	30580649
Power plug set	30580650
Transport box	30580651

Pipette Calibration

According ISO 8655 Standard

The XPR26PC is a sophisticated, high-speed solution for the routine testing and ISO performance verification of single channel pipettes. Pipette calibration with the XPR26PC is more accurate and up to 3 times faster than calibrating with a conventional balance.



XPR26PC pipette check

ISO 8655 Down to 1 μ L



With readability of 1 μ g, the XPR26PC fulfills the requirements of ISO 8655 for micropipettes dispensing volumes ≥ 1 μ L. The outstanding weighing performance ensures accurate results, even for extremely small pipette volumes.

Fast and Ergonomic



Simply pass the tip of your pipette through the integrated light barrier and the lid of the evaporation trap opens automatically. After dispensing, pass the light barrier again to close the lid and the weight is recorded automatically. Suitable for left- and right-handed users.

Non-Stop Testing



The integrated waste container holds up to 10 mL, enabling you to pipette 10 μ L 1,000 times before it needs emptying. This uninterrupted process makes routine pipette testing and ISO performance verification faster than ever before.

Technical Specifications	XPR26PC
Maximum capacity	22 g
Readability	0.001 mg
Repeatability @ 1 g load	0.0015 mg
Typical repeatability @ 1 g load	0.0007 mg
Pipette calibration range (in accordance with ISO 8655)	1–100 μ L
Waste container volume	10 mL
Evaporation trap volume (built-in)	80 mL
Typical settling time	3.5 s
Dimensions W x D x H (mm)	195 x 485 x 292
Weight	10.1 kg
Material No.	30355534

Accessories	Material No.
Terminal extension cable 4.5 m	30110908
CarePac® test weight set (1 g and 20 g weights)	30550617
Weighing table for XPR26PC	30404636
ErgoSens external sensor for touch-free operation	30300915
Foot-operated switch for balance functions	30312558
EasyScan USB–RFID reader ¹	30416173
Software	
Calibry Express	11138423
Calibry Single Station	11138419
Calibry Network	11138420
Calibry Demo Version	30007307
Calibry Validation Handbook	11780959

¹ Requires Calibry software

► www.mt.com/XPR26PC

Efficient Pipette Calibration

Fast and Traceable Results

Calibration task planning, guided calibration processes, data collection, report generation combined with compliance – these are the benefits of using highly efficient Calibry software efficiency.



Compliant and Traceable



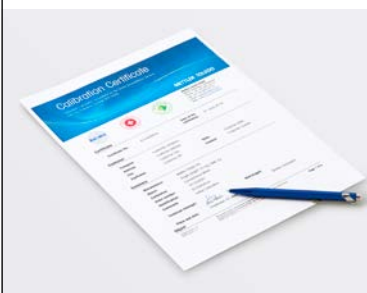
Calibry software saves all calibration data in a secure SQL database and helps you comply with ISO 8655 regulations and reporting requirements.

Supports 21 CFR Part 11



For regulated areas, Calibry contains many FDA 21 CFR Part 11 supportive features, such as user management, report release, method change history and audit trail.

Customized Reporting



ISO 8655 compliant and comprehensive reports can be generated and adapted to specific needs. If required, all data can be exported and used to generate custom reports as well.

Software Functionalities

	Calibry Single Station	Calibry Network
Software Package, 1 balance license included	1138419	11138420
Instrument License 1 – to connect 1 additional balance	30415768	30415768
Instrument License 3 – to connect 3 additional balances	30417326	30417326
Instrument License 5 – to connect 5 additional balances	–	30417327
Instrument License 1 – to connect 1 balance of another brand	30421382	30421382
User Management License – to manage user rights	30415770	Included
Audit Trail License – to document all system changes	30415771	30415771
Export File License – to export in XML and MS Office	30417468	Included
Capture Tool License – to automatically integrate all environmental data	30415769	30415769

EasyDirect Balance Software

Paperless Weighing Data Management

Connect your METTLER TOLEDO Advanced or Standard laboratory balances to EasyDirect™ Balance software and digitally manage your weighing data. Installation and setup are simple and fast, and operation is intuitive.

With EasyDirect Balance, you collect weighing data automatically from up to 10 balances, making it easier to create reports, visualize results in control charts, perform statistics and have a clear overview about the status of your balances. All exported data is safely stored in a central database.

Download a free trial version for 45 days

► www.mt.com/EasyDirectBalance

Collect Data Automatically



Collect weighing data from up to 10 balances via Ethernet or RS232. Minimize manual transcription errors, save time and store data securely.

Efficient Results Handling



Easily review results and filter by date, instrument, user or sample. Visualize results in charts to assess target and tolerance ranges and perform statistics for efficient trend and production analysis.

Easy Reporting and Export



Generate simple and clear reports of weighing results. Export data to PC in various formats (XML, CSV, XLSX or PDF) or print on a network printer.

Supported Instruments	MS-TS, ML-T	MS, ML, ME-T, ME, PL-E, JP, JS, JE, JET, JL-GE
Supported Interfaces	Ethernet ¹ , RS232	RS232
Languages	Chinese, Czech, Dutch, English, French, German, Hungarian, Italian, Japanese, Korean, Polish, Portuguese, Russian, Spanish, Turkish	
Material No.	30539323 – EasyDirect Balance license for 3 balances 30540473 – EasyDirect Balance license for 10 balances	

¹ Full functionality only via Ethernet (full functionality includes data export of leveling, adjustment, test and service status as well as results from checkweighing, dynamic weighing, formulation, totaling, back weighing, differential weighing, density)

Laboratory Printers

Quality Documentation

Printers

P-50 printers are universal printers suitable for documenting results and for printing labels. They are fully compatible with balances, titrators, moisture analyzers, and more.

P-56 and P-58 inkless thermal direct printers generate high-quality printouts extremely quickly without any noise or vibration. The P-56 is suitable for simple printouts and for all instruments with embedded applications. The P-58 offers several integrated applications such as time and date, statistics, totaling, formulation and labeling.



P-58RUE

When your SOPs or regulatory requirements demand dot-matrix technology, the P-52 printer is the perfect choice for straightforward, high-quality printing on paper and continuous labels.

Model	P-58RUE	P-56RUE	P-52RUE
Alphanumeric sample ID entry	•	–	–
Barcode generation	•	–	–
Applications: statistics, totaling, formulation	•	–	–
Individual label printing	•	–	–
Built-in real-time clock	•	•	–
Print technology	Direct thermal	Direct thermal	Dot matrix
Print speed	Up to 100 mm/s	Up to 100 mm/s	Up to 10 mm/s
Operating language	Chinese (simplified), English, French, German, Italian, Japanese, Korean, Russian, Spanish	Chinese (simplified), English, French, German, Italian, Japanese, Korean, Russian, Spanish	English
Print language			Chinese (simplified), English, French, German, Italian, Japanese, Russian, Spanish
Chemical resistance	•	•	•
Interfaces	RS232, USB, Ethernet	RS232, USB, Ethernet	RS232, USB, Ethernet
Optional Bluetooth adapter, connects via RS232	•	•	•
Material No.	30094674	30094673	30237290

Consumables/Additional Items	Material No.	
P-58	DirectLabel: free PC software for customized labels included with printer	–
	Thermal labels: 6 rolls of 550 labels, label size: 56 mm×18 mm, up to 10 years durability	30094725
P-56/58	Thermal paper: 10 rolls, 58 mm×27 m, up to 25 years durability	30094723
	Thermal continuous label: 10 rolls, 58 mm×13 m, up to 10 years durability	30094724
P-52	Paper roll, set of 5 rolls	00072456
	Paper roll, set of 3 rolls, self-adhesive	11600388
	Ribbon cartridge black, set of 2 ink ribbons	00065975

Wireless	Material No.	
P-52/56/58	Bluetooth adapter RS232 single for balances or printers	30086494
	Bluetooth adapter RS232 paired for balances or printers	30086495
	Bluetooth adapter USB for XPR and XSR balances	30416089
	Bluetooth and wireless adapter USB for ML-T and MS-T balances	30412536

P-20 Printers

P-20 standard printers use dot-matrix technology to produce results printouts that help you meet GMP/GLP/ISO documentation regulations. These printers are suitable for use with all instruments that have an RS232 or USB port: selected titrators, Karl Fischer titrators, density meters, refractometers, and thermal analysis instruments.

Whether on normal or self-adhesive paper, archived printouts provide full traceability of your weighing and testing data.



RS-P28

Model	RS-P28	RS-P26	RS-P25	USB-P25
Print application	•	•	•	•
Auto settings detection	•	•	•	•
Built-in real-time clock	•	•	–	–
Zero/tare key	•	•	–	–
Statistic application	•	–	–	–
Totalling application	•	–	–	–
Size W×D×H (mm)	120×203×73			
Printing speed	2.3 lines/second			
Material No.	11124314 for AP 11124324 for US 11124304 for EU	11124313 for AP 11124323 for US 11124303 for EU	30702967	30702998

Consumables/Additional Items	Material No.
Paper roll, set of 5 rolls	00072456
Paper roll, set of 3 rolls, self-adhesive	11600388
Ribbon cartridge black, set of 2 ink ribbons	00065975

Powder Dosing Heads

Dosing and Storage in One

The dosing head has been developed to dose free-flowing powdery substances such as APIs or reference standards in conjunction with an XPR dosing system. Our dosing heads are suitable for dosing fine, fluffy, static, compacted, granular, or heterogeneous substances. The use of a closed system avoids cross-contamination and protects the user, the substance and the environment.

Precise Powder Dosing



A highly precise mechanism ensures homogeneous powder flow. The dosing head learns powder behavior and optimizes dosing accuracy and speed. While no configuration is needed, any target weight can be hit.

Keep Substances Contained



Powders are sealed within the dosing head. Individual dosing heads for each powder eliminate the risk of cross-contamination. Once the dosing head is filled, work proceeds with no powder contact.

Safe Storage Solutions



A storage container protects your dosing heads when not in use and ensures that valuable and toxic substances remain safe. The container is impact-resistant and watertight for safe storage.

Dosing Heads Overview

Powder Characteristics	Standard Dosing Heads					Special Dosing Heads				
	BD114-0101	BD114-0102	BD114-0103	BD114-0104	BD114-0105	BD114-0201	BD114-0202	BD114-0203	BD114-0204	BD114-0205
Material	+	+	+	+	+	+	+	+	+	+
Particle Size	+	+	+	+	+	+	+	+	+	+
Flowability	+	+	+	+	+	+	+	+	+	+
Hygroscopic	+	+	+	+	+	+	+	+	+	+
Temperature	+	+	+	+	+	+	+	+	+	+
Other	+	+	+	+	+	+	+	+	+	+

To help select the correct dosing head for your powder type, download our free guide.

www.mt.com/Dosing-Heads

Order Information

Automated Dosing Heads



Dosing Heads	Description	Material No.
QH008-BNMW (10 pcs) ¹	Standard dosing head	11141533
QH012-LNMW (10 pcs) ¹	Standard dosing head	11141532
QH012-LNLW (10 pcs) ¹	For large target amounts	11150145
QH012-LNJW (10 pcs)	For large target amounts or fluffy substances	30366317
QH008-BNMP (10 pcs) ¹	For small target containers	11150120
QH012-LNMP (10 pcs) ¹	For small target containers	11150118
QH012-LNCT (10 pcs) ¹	For difficult-to-dose powders	11150171
QH012-LNLT (10 pcs) ¹	For compacted powders	11150170
QH012-LNMX (10 pcs) ¹	For high-density or fast-flowing powder	30112276
QH012-LNLX (10 pcs) ¹	For beads, pellets or coated particles	11150155
QH002-CNMW (30 pcs)	For less frequent dispensing and low starting quantities	30083440
QH002-CNMW (90 pcs)	For less frequent dispensing and low starting quantities	30098264
QH002-CNMW (500 pcs)	For less frequent dispensing and low starting quantities	30244518
QH010-CNMW (10 pcs)	Standard dosing head with fixed container	30132790
QH010-CNMW (40 pcs)	Standard dosing head with fixed container	30132791
QH010-CNMW (150 pcs)	Standard dosing head with fixed container	30046355
Dosing head starter kit (8 pcs)	Set of 8: 1×QH008-BNMW, 1×QH008-BNMP, 1×QH012-LNMW, 1×QH012-LNCT, 1×QH012-LNLT, 2×QH002-CNMW, 1×QH010-CNMW	30132792
Storage container and vials 16 mL (10 pcs)	For QH008 powder dosing heads	30139824
Storage container and vials 125 mL (10 pcs)	For QH012 powder dosing heads	30036965

¹ Heads are available sterilized



Accessories for XPR Automatic Balance Modules	Description	Material No.
EasyHub USB	To connect multiple peripherals	30468768
AntiStatic kit standard	AntiStatic kit for powder dosing	30521821
AntiStatic kit small	AntiStatic kit for powder dosing	30521822
Cable box	To store power supplies and cables	11141845
Citizen label printer kit	Citizen CLS631 for label printing with barcodes	11141820
Labels kit	Set with 2 label rolls and 1 ribbon roll	30004309
Powder test head (QA075-P)	For system testing of dosing mechanism	11141506
Weight test head	For routine testing of the instrument	11141507
Sample changer racks	6 racks with positions numbered 1 to 30	11141772
Sample changer racks with pins	6 racks with positions numbered 1 to 30	30246875



ErgoDisc	Description	Material No.
ErgoDisc plate capsule size 00 (12 pos)	Manual sample changer for 12 capsules	11141754
ErgoDisc plate capsule size 0 (12 pos)	Manual sample changer for 12 capsules	11141751
ErgoDisc plate capsule size 1 (12 pos)	Manual sample changer for 12 capsules	11141755
ErgoDisc plate capsule size 2 (12 pos)	Manual sample changer for 12 capsules	11141758
ErgoDisc plate capsule size 3 (12 pos)	Manual sample changer for 12 capsules	11141752
ErgoDisc plate capsule size 4 (12 pos)	Manual sample changer for 12 capsules	30336822
ErgoDisc support plate	Bottom plate to affix the ErgoDisc	30604881

More adapters with different diameters available

Order Information

Automated Dosing Heads



Vial and Capsule Adapter	Description	Material No.
ErgoClip vial	–	30521808
ErgoClip adapter holder	For perfect adapter positioning	30521809
ErgoClip adapter stabilizer	–	30542831
ErgoClip height extension	–	30542824
ErgoClip adapter holder	For perfect adapter positioning	30521809
Adapter for a 10.5 × 25 mm vial size	Set of 5 pcs	30428905
Adapter for a 12 × 20 mm vial size	Set of 5 pcs	30428908
Adapter for a 15.5 × 25 mm vial size	Set of 5 pcs	30428912
Adapter for a 21.5 × 25 mm vial size	Set of 5 pcs	30428918
Adapter for size 0 capsules	Set of 5 pcs	30006418
Adapter for size 00 capsules	Set of 5 pcs	30006417
Adapter for size 000 capsules	Set of 5 pcs	30006416
Adapter for size 1 capsules	Set of 5 pcs	30006419
Adapter for size 2 capsules	Set of 5 pcs	30006430
Adapter for size 3 capsules	Set of 5 pcs	30006431
Adapter for size 4 capsules	Set of 5 pcs	30006432

More adapters with different diameters available

► www.mt.com/XPR-Automatic

Accessories

XPR and XSR Balances

Description	Material No.	XPR Ultra-Micro and Microbalances	XPR36/XPR56 Microbalances	XPR Analytical Balances	XSR Analytical Balances	XPR Precision Balances S/L-Platform	XSR Precision Balances S/L-Platform
LabX™ Laboratory Software							
LabX Balance Express starter pack	11153120	•	•	•	•	•	•
LabX Balance Server starter pack	11153121	•	•	•	•	•	•
LabX License for 1 balance	11153220	•	•	•	•	•	•
LabX Express to Server sidegrade	11153117	•	•	•	•	•	•
LabX statistical evaluation option	30262374	•	•	•	•	•	•
LabX user management option	11153102	•	•	•	•	•	•
LabX product database option	11153103	•	•	•	•	•	•
LabX regulation option	11153104	•	•	•	•	•	•
LabX auto import/export option	11153105	•	•	•	•	•	•
LabX report designer option	11153106	•	•	•	•	•	•
LabX System Integration option	11153107	•	•	•	•	•	•
LabX validation manual 1	30003640	•	•	•	•	•	•
LabX validation manual 2 balance extension	30416322	•	•	•	•	•	•
Density Determination¹							
Density kit for XPR/XSR analytical balances	30460852	–	–	•	•	–	–
Density kit for XPR/XPE/XSR/XS precision balances, 0.1 mg and 1 mg models	30300933	–	–	–	–	• (S) ²	• (S)
Calibrated thermometer (with certificate)	11132685	–	–	•	•	•	•
Sinker 10 mL for density determination of liquids	00210260	–	–	•	•	•	•
Sinker 10 mL for density determination of liquids (with certificate)	00210672	–	–	•	•	•	•
Draft Shields							
Pro draft shield, for 0.1 mg and 1 mg models, H: 248 mm	30300926	–	–	–	–	• (S)	• (S)
Pro draft shield glass free (food industry) for 0.1 mg and 1 mg models, H: 248 mm	30409092	–	–	–	–	• (S)	• (S)
MagicCube draft shield, 1 mg models, H: 175 mm	30300928	–	–	–	–	• (S)	• (S)
Simple draft shield, for 0.1 g models (weighing pan 11132660 needed), H: 175 mm	11131653	–	–	–	–	• (S)	• (S)
Simple draft shield for 5 mg and 10 mg models, H: 175 mm	30113496	–	–	–	–	• (S)	• (S)
W5 draft shield, for entire microbalances, W×D×H (inside): 200×447×200 mm	11116043	•	–	–	–	–	–
W12 draft shield, for entire precision balances, W×D×H (inside): 300×450×450 mm	11134430	–	–	–	–	• (S)	• (S)
W64 draft shield, for entire balances, W×D×H (internal): 550×470×580 mm	11134470	–	•	•	•	•	•
Stands and Wall Mountings							
Terminal stand for placement of the terminal 30 cm above weighing pan, balances with S-platform (XSR balances require adapter 30300956)	30125077	–	–	–	–	• (S)	• (S)
Terminal stand for placement of the terminal 30 cm above weighing pan, balances with L-platform (XSR balances require adapter 30300956)	30125333	–	–	–	–	• (L) ³	• (L)
Terminal wall mounting for XPR/XSR terminal, including terminal extension cable (requires XSR terminal adapter 30300956)	30138798	–	–	–	–	•	•
Optical Sensor							
ErgoSens: infrared sensor for touch-free remote operation, connection via USB	30300915	•	•	•	•	•	•

¹ Not compatible with XPR106DUH

² (S) – small platform

³ (L) – large platform



Accessories

XPR and XSR Balances

Description	Material No.	XPR Ultra-Micro and Microbalances	XPR36/XPR56 Microbalances	XPR Analytical Balances	XSR Analytical Balances	XPR Precision Balances S/L-Platform	XSR Precision Balances S/L-Platform
Footswitches							
Footswitch: switch for remote operation, connection via USB	30312558	•	•	•	•	•	•
Transport Cases							
Transport case for S-platform precision balances, 5 mg, 10 mg and 0.1 g models, with space for printer and stand arm	30113497	–	–	–	–	• (S) ²	• (S)
Dust Cover							
Dust cover analytical balances	30460849	–	•	•	•	–	–
Protective Covers							
Protective cover for XPR terminal	30125377	•	•	•	–	•	–
Protective cover for XSR terminal	30300968	–	–	–	•	–	•
Protective cover for XPR/XSR S-platform 10 mg and 0.1 g models	30300966	–	–	–	–	•	•
Protective cover for XPR/XSR S-platform 1 mg and 0.1 mg models	30300967	–	–	–	–	•	•
Protective cover for standard weighing pan 5 mg, 10 mg (172×205 mm)	30106207	–	–	–	–	• (S)	• (S)
Protective cover for standard weighing pan 0.1 g (190×223 mm)	30106204	–	–	–	–	• (S)	• (S)
IP54 cover for AC adapter, protects against dust and splashing (IP54)	11132550	•	•	•	•	•	•
ErgoClips¹							
ErgoClip tube micro	30078848	–	•	–	–	–	–
ErgoClip flask micro	11107879	–	•	–	–	–	–
ErgoClip basket micro	11107889	–	•	–	–	–	–
ErgoClip vial micro 12 mm	30296641	–	•	–	–	–	–
ErgoClip SmartPrep™ weighing funnel micro	30138674	–	•	–	–	–	–
ErgoClip filter holder 110–150 mm	30460844	–	–	•	•	–	–
Stand for ErgoClips micro	11140175	–	•	–	–	–	–
ErgoClip weighing boat	11106748	–	–	•	•	–	–
ErgoClip titration basket	11106883	–	–	•	•	–	–
ErgoClip basket small	11106747	–	–	•	•	–	–
ErgoClip round-bottom flask	11106746	–	–	•	•	–	–
ErgoClip flask	30460842	–	–	•	•	–	–
ErgoClip flask small	30460854	–	–	•	•	–	–
ErgoClip tube	30460853	–	–	•	•	–	–
ErgoClip syringe	30460859	–	–	•	•	–	–
ErgoClip vial XPR/XSR	30521808	–	–	•	•	–	–
Stand for ErgoClips	11140170	–	–	•	•	–	–
Barcode Readers							
USB barcode reader	30417466	•	•	•	•	•	•
RFID Solutions							
SmartScan: secure RFID transfer of sample data to titrator or InMotion sample changer	30459915	–	–	•	–	–	–
EasyScan USB: external RFID reader/writer for dosing heads, SmartTag RFID labels and RFID-tagged pipettes	30416173	•	•	•	–	•	–
SmartTag RFID labels (pack of 50)	30101517	–	–	–	–	–	–
SmartTag RFID labels (pack of 200)	30101518	–	–	–	–	–	–

¹ Not compatible with XPR106DUH

² (S) – small platform



Accessories

XPR and XSR Balances

Description	Material No.	XPR Ultra-Micro and Microbalances	XPR36/XPR56 Microbalances	XPR Analytical Balances	XSR Analytical Balances	XPR Precision Balances S/L-Platform	XSR Precision Balances S/L-Platform
AntiStatic Solutions							
Internal ionizer module XPR analytical	30460823	–	–	•	–	–	–
Compact external ionizer with adapter	30499860	•	•	•	–	–	–
Compact AntiStatic kit with stand that holds up to 3 × compact ionizer USB (1 compact ionizer USB included)	30499859	•	•	•	•	•	•
Optional compact ionizer USB for AntiStatic kit with stand 30499859	30496446	–	–	–	–	–	–
Universal AntiStatic kit 15 × 25 cm (large U-electrode with power supply)	11107767	•	•	•	•	•	•
U-electrode small 12 × 12 cm (requires power supply 11107766)	11140161	•	•	•	•	•	•
Weighing Pans							
Single-use aluminum weighing pans (10 units)	11106711	–	–	•	•	–	–
SmartGrid cover	11106709	–	–	•	•	–	–
SmartGrid cover micro	11106262	–	•	–	–	–	–
Weighing pan for 5 mg, 10 mg S-platform models, 172 × 205 mm	30215056	–	–	–	–	• (S) ²	• (S)
Weighing pan, incl. pan support, for 0.1 g S-platform models, 190 × 223 mm	11132655	–	–	–	–	• (S)	• (S)
Grey drip tray for analytical balances	30460856	–	–	•	•	–	–
Bullion weighing kit to load or unload heavy items, only for models with L weighing platform	30300944	–	–	–	–	• (L) ³	–
Special weighing pan suitable for small, tubular samples; includes holder, pan and wind-ring	30113498	•	–	–	–	–	–
Special weighing pan set of 10	30215425	•	–	–	–	–	–
Optional Interfaces							
EasyHub USB with 4 powered USB ports, stackable	30468768	•	•	•	•	•	•
USB Bluetooth adapter for XPR/XSR balances to connect RS-Px printers (requires Bluetooth RS232 serial adapter 30086494)	30416089	•	•	•	•	•	•
Bluetooth adapter RS232 single for use with USB Bluetooth adapter 30416089	30086494	•	•	•	•	•	•
Terminal Cable							
Terminal extension cable for XPR and XSR balances, length 4.5 m	30300920	•	•	•	•	•	•
Filling Process Control¹							
XPR analytical right-hand draft shield door with slot for LV12 feeder	30460840	–	–	•	–	–	–
LV12 small items transporter for automatic balance feeding	30374389	–	–	•	–	• (S)	–
XPR analytical left-hand draft shield door with slot for LV12 feeder	30460841	–	–	•	–	–	–
LV12 pro draft shield door for 0.1 mg and 1 mg models	11132711	–	–	–	–	•	–
Consumables							
SmartPrep weighing funnel (50 pcs)	30061260	–	–	•	•	–	–
Hook for Weighing below the Balance¹							
Below-the-balance weighing device for precision balances with L-platform (integrated in balance models with S-platforms)	11132565	–	–	–	–	• (L)	• (L)
Filter Kits¹							
Filter weighing kit suitable for 30–70 mm filters, includes tweezers	30300922	•	–	–	–	–	–
Filter pan suitable for 50 mm filters, for XPR micro and ultra-microbalances	00211214	•	–	–	–	–	–
Filter weighing kit for XPR/XSR analytical balances, max. filter size 110 mm	30460857	–	–	•	•	–	–
ErgoClip filter holder \varnothing 110–150 mm	30460844	–	–	•	•	–	–

¹ Not compatible with XPR106DUH

² (S) – small platform

³ (L) – large platform

Accessories

MS, MS-TS, ML-T, ME-T, ME, and PL-E Balances



Description	Material No.	MS Semi-Micro	MS-L	MS-TS	ML-T	ME-T/ME	PL-E
Density Kit							
Density kit Advanced and Standard	30535760	•	•	•	•	•	–
EasyDirect Balance Software							
EasyDirect Balance PC software for up to 3 balances	30539323	•	•	•	•	•	•
EasyDirect Balance PC software for up to 10 balances	30540473	•	•	•	•	•	•
Draft Shields							
Draft shield MS-DS-21 for models with readability of 0.1 g up to 0.01 g	12121014	–	–	•	–	–	–
Draft shield for precision balances ML-DS-21, height 227 mm (ML with pan size 170×190 mm)	12121015	–	–	–	•	–	–
Transport Case							
Transport case for PL-E	12102982	–	–	–	–	–	•
Dust Covers							
Dust cover for models with draft shield 235 mm	30029049	–	–	–	–	•	–
Dust cover for models with draft shield 170 mm	30029050	–	–	–	–	•	–
Dust cover for models without draft shield	30029051	–	–	–	–	•	–
Protective Covers							
Protective cover for MS semi-micro	30006615	•	–	–	–	–	–
Protective cover for MS-TS balances (all models)	30216667	–	–	•	–	–	–
Protective cover for MS-L balances	12121852	–	•	–	–	–	–
Protective cover for ML-T balances with draft shield	30241514	–	–	–	•	–	–
Protective cover for ML-T balances with square pan	30241513	–	–	–	•	–	–
Protective cover for ME-T balances with draft shield	30241549	–	–	–	–	•	–
Protective cover for ME-T balances without draft shield	30241560	–	–	–	–	•	–
Protective cover for compact models	12102980	–	–	–	–	–	•
Special Weighing Pans							
Dynamic weighing pan MS-DWP-21 (MS-TS with pan size 170×200 mm, 190×226 mm)	30006471	–	–	•	–	–	–
Anti-Theft Devices							
Steel cord with lock	11600361	•	•	•	•	•	–
Auxiliary Displays							
Auxiliary display AD-RS-M7, RS232 large LCD display with backlight	12122381	•	•	•	•	•	–
Auxiliary display RS-AD-L7, RS232 LCD display with backlight	72213564	–	–	–	–	–	•
Bluetooth Adapters							
Bluetooth adapter RS232 single for balances or printers	30086494	•	•	•	•	•	•
Bluetooth adapter RS232 paired for balances or printers	30086495	•	•	•	•	•	•
Bluetooth and Wi-Fi adapter USB for ML-T and MS-TS balances	30412536	–	–	•	•	–	–



Accessories

Cables



Cables	Description	Material No.
All, with RS232 interface	RS9 (m) – RS9 (f), cable for connecting a balance (RS232, 9-pin) to a printer, PC or titrator (RS232, 9-pin), 1 m	11101051
	RS9 F/F cable, 1 m	51190362
	USB-RS232 converter cable, FTDI, 2 m	64088427
	USB-RS232 cable with Null Modem Adapter	30576241
All, with Ethernet interface	Ethernet extension cable, RJ45 patch cable U/UTP, CAT5, 3 m	11600395
	Ethernet extension cable, RJ45 patch cable U/UTP, CAT5, 5 m	11600396
With USB interface	USB A-B cable for PC connection, 1 m	30241476
	USB A-B cable for PC connection, 1.8 m	51191926



► www.mt.com/Accessories

Test Weights

Metrology Expertise You Can Rely On

METTLER TOLEDO is a world leader in metrology and precision weighing equipment. Thanks to our decades of weighing expertise and experience, you can trust our test weights and calibration services to be of the highest quality and value for the money.

Our portfolio includes OIML and ASTM weights from 50 micrograms to 5 tons in all accuracy classes as well as specialist weights for national metrology institutes. Furthermore, with our global network of accredited mass calibration laboratories, you can be sure of trustworthy calibration services and benefit from short weight recalibration times.



Test Weights

Calibration Certificate Included

Monitoring the performance of your weighing equipment is a requirement of many standards, such as GMP and ISO 9001. Your internal quality assurance department may also specify what testing is necessary. In addition, audits of weighing equipment typically require documented proof of balance testing and calibration that can be traced to official reference standards.

METTLER TOLEDO's stainless steel test weights with a calibration certificate satisfy the highest requirements for periodic balance performance checks. Each test weight is delivered with a calibration certificate from a METTLER TOLEDO calibration laboratory that has been produced in accordance with ISO/IEC 17025 requirements to fulfill metrological traceability requirements.

- OIML Classes E1, E2, F1, F2, M1 with a calibration certificate
- ASTM Classes 1–4 with a calibration certificate

Calibration Certificate



Our accredited mass calibration laboratories meet or exceed ISO/IEC 17025 standards. Weight calibration is the only way to obtain accurate and reliable data.

CarePac® Routine Testing



A CarePac only contains two carefully selected weights – all you need for safe and accurate weighing processes between manufacturer-performed calibrations.

Recalibration



Our global network of weight calibration laboratories ensures a fast and cost-effective weight calibration service wherever you are based.

OIML Weights Certificate Included



Individual Weights

Nominal Value	Class E1	Class E2	Class F1	Design	Class F1	Class F2	Class M1	Design
1 mg	30548907	158307	159417	△	30406245	30406415	30406452	□
2 mg	30548908	158317	159427	△	30406246	30406416	30406453	□
5 mg	30548909	158327	159437	△	30406247	30406417	30406454	□
10 mg	30548910	158337	159447	△	30406388	30406418	30406455	□
20 mg	30548911	158347	159457	△	30406389	30406419	30406456	□
50 mg	30548912	158357	159467	△	30406390	30406420	30406457	□
100 mg	30548913	158367	159477	△	30406391	30406421	30406458	□
200 mg	30548914	158377	159487	△	30406392	30406422	30406459	□
500 mg	30548915	158387	159497	△	30406393	30406423	30406460	□
1 g	30548916	158397	158607	■	30406394	30406424	30406371	■
2 g	30548917	158407	158617	■	30406395	30406425	30406372	■
5 g	30548918	158417	158627	■	30406396	30406426	30406373	■
10 g	30548919	158427	158637	■	30406397	30406427	30406374	■
20 g	30548920	158437	158647	■	30406398	30406428	30406375	■
50 g	30548921	158447	158657	■	30406399	30406429	30406376	■
100 g	30548922	158457	158667	■	30406400	30406430	30406377	■
200 g	30548923	158467	158677	■	30406401	30406431	30406478	■
500 g	30548924	158477	158687	■	30406402	30406432	30406479	■
1 kg	30548925	158487	158697	■	30406403	30406433	30406480	■
2 kg	30548926	158497	158707	■	30406404	30406434	30406481	■
5 kg	30548927	158507	158717	■	30406405	30406435	30406482	■
10 kg	30548928	158517	158727	■	30406406	30406436	30406483	■
20 kg	30548929	158527	158737	■	30406407	30406437	30406484	■
50 kg	30548930	158531	158741	■	-	-	-	-
Shape	△ Wire weights				□ Sheet weights			
Design	■ Monobloc knob weights				▣ Knob weights with adjusting cavity			
Box material	Plastic (50 kg: wood)				Plastic			



△ Wire weight
■ Monobloc knob weight (stainless steel, density 8.0 kg/dm³)



□ Sheet weight
▣ Knob weight with adjusting cavity (stainless steel, density 7.9 kg/dm³)

Weight Sets

Weight Range	Class E1	Class E2	Class F1	Class F1	Class F2	Class M1
1 mg – 500 mg	30548931	158807	161707	30406408	30406438	30406445
1 mg – 200 g	30548932	158847	158907	30406409	30406439	30406446
1 mg – 1 kg	30548933	158857	158917	30406410	30406440	30406447
1 mg – 2 kg	30548934	11117322	11119980	30406411	30406441	30406448
1 mg – 5 kg	30548935	11117324	11119982	30406412	30406442	30406449
1 g – 50 g	30548936	158817	158877	30406413	30406443	30406450
1 g – 500 g	30548937	158827	158887	30406414	30406444	30406451
1 kg – 5 kg	30548939	11125901	11125908	-	-	-
Box material	Aluminum			Plastic		

Weight Set Contents

Weight Range	1 mg	2 mg	5 mg	10 mg	20 mg	50 mg	100 mg	200 mg	500 mg	1 g	2 g	5 g	10 g	20 g	50 g	100 g	200 g	500 g	1 kg	2 kg	5 kg
1 mg – 500 mg	1x	2x	1x	1x	2x	1x	1x	2x	1x	-	-	-	-	-	-	-	-	-	-	-	-
1 mg – 200 g	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	-	-	-	-
1 mg – 1 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	-	-
1 mg – 2 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	-
1 mg – 5 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x
1 g – 50 g	-	-	-	-	-	-	-	-	-	1x	2x	1x	1x	2x	1x	-	-	-	-	-	-
1 g – 500 g	-	-	-	-	-	-	-	-	-	1x	2x	1x	1x	2x	1x	1x	2x	1x	-	-	-
1 kg – 5 kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1x	2x	1x

ASTM Weights

Certificate Included



- Sheet weight
- Knob weight with adjusting cavity



Weight set

Individual Weights

Nominal Value	Class 1	Class 2	Class 3	Class 4	Design
1 mg	11123469	11123515	11123561	11123607	<input type="checkbox"/>
2 mg	11123470	11123516	11123562	11123608	<input type="checkbox"/>
5 mg	11123471	11123517	11123563	11123609	<input type="checkbox"/>
10 mg	11123472	11123518	11123564	11123610	<input type="checkbox"/>
20 mg	11123473	11123519	11123565	11123611	<input type="checkbox"/>
50 mg	11123474	11123520	11123566	11123612	<input type="checkbox"/>
100 mg	11123475	11123521	11123567	11123613	<input type="checkbox"/>
200 mg	11123476	11123522	11123568	11123614	<input type="checkbox"/>
500 mg	11123477	11123523	11123569	11123615	<input type="checkbox"/>
1 g	11123478	11123524	11123570	11123616	<input checked="" type="checkbox"/>
2 g	11123479	11123525	11123571	11123617	<input checked="" type="checkbox"/>
5 g	11123480	11123526	11123572	11123618	<input checked="" type="checkbox"/>
10 g	11123481	11123527	11123573	11123619	<input checked="" type="checkbox"/>
20 g	11123482	11123528	11123574	11123620	<input checked="" type="checkbox"/>
50 g	11123483	11123529	11123575	11123621	<input checked="" type="checkbox"/>
100 g	11123484	11123530	11123576	11123622	<input checked="" type="checkbox"/>
200 g	11123485	11123531	11123577	11123623	<input checked="" type="checkbox"/>
500 g	11123486	11123532	11123578	11123624	<input checked="" type="checkbox"/>
1 kg	11123487	11123533	11123579	11123625	<input checked="" type="checkbox"/>
2 kg	11123488	11123534	11123580	11123626	<input checked="" type="checkbox"/>
5 kg	11123489	11123535	11123581	11123627	<input checked="" type="checkbox"/>
10 kg	11123490	11123536	11123582	11123628	<input checked="" type="checkbox"/>
20 kg	11123491	11123537	11123583	11123629	<input checked="" type="checkbox"/>
Shape	<input type="checkbox"/> Sheet weights				
Design	<input checked="" type="checkbox"/> Knob weights with adjusting cavity				
Box material	Plastic				

Weight Sets

Weight Range	Class 1	Class 2	Class 3	Class 4
1 mg – 500 mg	11124001	11124023	11124045	11124067
1 mg – 100 g	11124003	11124025	11124047	11124069
1 mg – 200 g	11124005	11124027	11124049	11124071
1 mg – 500 g	11124007	11124029	11124051	11124073
1 mg – 1 kg	11124009	11124031	11124053	11124075
1 mg – 2 kg	11124011	11124033	11124055	11124077
1 mg – 5 kg	11124013	11124035	11124057	11124079
10 mg – 50 g	11124015	11124037	11124059	11124081
1 mg – 50 mg	11124017	11124039	11124061	11124083
1 g – 100 g	11124019	11124041	11124063	11124085
1 g – 500 g	11124021	11124043	11124065	11124087
Box material	Plastic			

Weight Set Contents

Weight Range	1 mg	2 mg	5 mg	10 mg	20 mg	50 mg	100 mg	200 mg	500 mg	1 g	2 g	5 g	10 g	20 g	50 g	100 g	200 g	500 g	1 kg	2 kg	5 kg
1 mg – 500 mg	1x	2x	1x	1x	2x	1x	1x	2x	1x	-	-	-	-	-	-	-	-	-	-	-	-
1 mg – 100 g	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	-	-	-	-	-
1 mg – 200 g	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	-	-	-	-
1 mg – 500 g	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	-	-	-
1 mg – 1 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	-	-
1 mg – 2 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	-
1 mg – 5 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x
10 mg – 50 g	-	-	-	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	-	-	-	-	-	-
1 mg – 50 mg	1x	2x	1x	1x	2x	1x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 g – 100 g	-	-	-	-	-	-	-	-	-	1x	2x	1x	1x	2x	1x	1x	-	-	-	-	-
1 g – 500 g	-	-	-	-	-	-	-	-	-	1x	2x	1x	1x	2x	1x	1x	2x	1x	-	-	-

CarePac Weight Sets

Your Routine Testing Solution

A CarePac® contains everything you need to limit the risk of working outside specified process tolerances. Two test weights are carefully selected to correspond to 5 percent and 100 percent of your balance's capacity – precisely what USP Chapter 41 recommends for balance testing.

Tailored to your specific requirements, the three sizes of CarePac weight sets enable you to test balances of up to 8 kilograms weighing capacity. CarePac weights are specified to validate process tolerances up to 0.03 percent.

All CarePac sets are delivered with a calibration certificate and include tweezers, gloves and other accessories for professional weight handling.



Effortless Weight Selection



With just two carefully selected weights, a CarePac has everything you need for efficient routine balance testing in accordance with USP Chapter 41 and GWP®.

Optional Third Weight



All CarePac sets have the option to add a third weight to accommodate individual testing requirements. The nominal value of the third weight is between 1 milligram and 100 grams.

Accessories Included



Supplied as standard with each CarePac are ergonomic accessories such as tweezers or weight forks and a cleaning cloth. This allows professional weight handling and testing right from the first day without wasting time searching for the right tools.



OIML

Nominal Values	Class	Material No.
0.1 g/2 g	E2	11123004
0.2 g/5 g	F1	30550648
1 g/20 g	F1	30550617
2 g/50 g	F2	30550616
5 g/100 g	F2	30550615
10 g/200 g	F2	30550614
20 g/200 g	F2	30550613
20 g/500 g	F2	30550649
50 g/1,000 g	F2	11123008
100 g/2,000 g	F2	11123009
200 g/2,000 g	F2	11123010
200 g/5,000 g	F2	11123011



Third Weight

Nominal Value	OIML Class E2	ASTM Class 1
1 mg	11123044	11123144
2 mg	11123045	11123145
5 mg	11123046	11123146
10 mg	11123047	11123147
20 mg	11123048	11123148
50 mg	11123049	11123149
100 mg	11123050	11123150
200 mg	11123051	11123151
500 mg	11123052	11123152
1 g	11123053	11123153
2 g	11123054	11123154
5 g	11123055	11123155
10 g	11123056	11123156
20 g	11123057	11123157
50 g	11123058	11123158
100 g	11123059	11123159



ASTM

Nominal Values	Class	Material No.
0.1 g/2 g	1	11123104
0.2 g/5 g	1	11123105
1 g/20 g	1	11123106
2 g/50 g	1	11123103
5 g/100 g	1	11123102
10 g/200 g	1	11123101
20 g/200 g	1	11123100
20 g/500 g	1	11123107
50 g/1,000 g	1	11123108
100 g/2,000 g	1	11123109
200 g/2,000 g	4	11123110
200 g/5,000 g	4	11123111



Optional third weight for CarePac sets – fits perfectly into your CarePac carrying case

Test Weights

Certificate Not Included

High quality stainless steel test weights provide the best way to verify balance and scale performance and prevent out-of-specification errors. Premium stainless steel weights are corrosion resistant and provide long-term stability over their entire life span.

Using test weights without a calibration certificate may be acceptable in certain cases. However, test weights with a calibration certificate provide a more comprehensive option in case documentation should ever be requested. Certification relates to verifying and documenting accuracy. Even if not required by regulations, using test weights with a calibration certificate provides the reassurance that all your weight measurements can be validated at any time. For example, working according to ISO 9001 requires documented metrological traceability, so test weights with a certificate are necessary.

- OIML Classes E1, E2, F1, F2, M1 without a calibration certificate
- ASTM Classes 1–4 without a calibration certificate

Design and Construction



All weights are made of premium stainless steel to make them corrosion resistant. Monobloc weights are designed for long-term stability, and weights with an adjusting cavity simplify weight adjustment without the need for specialized equipment.

Expertly Crafted



Our unique manufacturing process involves traditional mechanical polishing, final stage electrolytic polishing, fully automated cleaning and final calibration using state-of-the-art mass comparators.

Protection and Longevity



To protect the integrity of the weight and ensure a long lifetime, all weights are supplied in a robust, easy-to-clean plastic container. Approved materials, including foam inserts, make them a durable solution.



OIML Weights

Certificate Not Included



Individual Weights

Nominal Value	Class E1	Class E2	Class F1	Design	Class F1	Class F2	Class M1	Design
1 mg	30548940	158306	159416	△	30402662	30402648	30402184	□
2 mg	30548941	158316	159426	△	30402629	30402649	30402510	□
5 mg	30548942	158326	159436	△	30402630	30402650	30402355	□
10 mg	30548943	158336	159446	△	30402631	30402651	30402585	□
20 mg	30548944	158346	159456	△	30402632	30402652	30402586	□
50 mg	30548945	158356	159466	△	30402633	30402653	30402587	□
100 mg	30548946	158366	159476	△	30402634	30402654	30402638	□
200 mg	30548947	158376	159486	△	30402635	30402655	30402639	□
500 mg	30548948	158386	159496	△	30402636	30402656	30402640	□
1 g	30548949	158396	158606	■	30402637	30402657	30402641	■
2 g	30548950	158406	158616	■	30402688	30402658	30402642	■
5 g	30548951	158416	158626	■	30402689	30402659	30402643	■
10 g	30548952	158426	158636	■	30402690	30402603	30402644	■
20 g	30548953	158436	158646	■	30402691	30402604	30402645	■
50 g	30548954	158446	158656	■	30402574	30402660	30402646	■
100 g	30548955	158456	158666	■	30402783	30402661	30402647	■
200 g	30548956	158466	158676	■	30402698	30402577	30402576	■
500 g	30548957	158476	158686	■	30402701	30402700	30402699	■
1 kg	30548958	158486	158696	■	30402664	30402663	30402702	■
2 kg	30548959	158496	158706	■	30402667	30402666	30402665	■
5 kg	30548960	158506	158716	■	30402710	30402709	30402708	■
10 kg	30548961	158516	158726	■	30402714	30402712	30402711	■
20 kg	30548962	158526	158736	■	30402782	30402781	30402780	■
50 kg	30548963	158530	158740	■	-	-	-	-
Shape	△ Wire weights				□ Sheet weights			
Design	■ Monobloc knob weights				▣ Knob weights with adjusting cavity			
Box material	Plastic (50 kg: wood)				Plastic			



△ Wire weight
■ Monobloc knob weight



□ Sheet weight
▣ Knob weight with adjusting cavity

Weight Sets

Weight Range	Class E1	Class E2	Class F1	Class F1	Class F2	Class M1
1 mg – 500 mg	30548964	158806	161706	30402723	30402722	30402721
1 mg – 200 g	30548965	158846	158906	30402717	30402716	30402715
1 mg – 1 kg	30548966	158856	158916	30402735	30402734	30402732
1 mg – 2 kg	30548967	11117321	11119979	30402684	30402683	30402682
1 mg – 5 kg	30549208	11117323	11119981	30402687	30402686	30402685
1 g – 50 g	30549209	158816	158876	30402681	30402680	30402679
1 g – 500 g	30549210	158826	158886	30402730	30402729	30402728
1 kg – 5 kg	30549212	11125900	11125907	-	-	-
Box material	Aluminum			Plastic		

Weight Set Contents

Weight Range	1 mg	2 mg	5 mg	10 mg	20 mg	50 mg	100 mg	200 mg	500 mg	1 g	2 g	5 g	10 g	20 g	50 g	100 g	200 g	500 g	1 kg	2 kg	5 kg
1 mg – 500 mg	1x	2x	1x	1x	2x	1x	1x	2x	1x	-	-	-	-	-	-	-	-	-	-	-	-
1 mg – 200 g	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	-	-	-	-
1 mg – 1 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	-	-
1 mg – 2 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	-
1 mg – 5 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x
1 g – 50 g	-	-	-	-	-	-	-	-	-	1x	2x	1x	1x	2x	1x	-	-	-	-	-	-
1 g – 500 g	-	-	-	-	-	-	-	-	-	1x	2x	1x	1x	2x	1x	1x	2x	1x	-	-	-
1 kg – 5 kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1x	2x	1x

ASTM Weights

Certificate Not Included



- Sheet weight
- Knob weight with adjusting cavity



Weight set

Individual Weights

Nominal Value	Class 1	Class 2	Class 3	Class 4	Design
1 mg	11123446	11123492	11123538	11123584	<input type="checkbox"/>
2 mg	11123447	11123493	11123539	11123585	<input type="checkbox"/>
5 mg	11123448	11123494	11123540	11123586	<input type="checkbox"/>
10 mg	11123449	11123495	11123541	11123587	<input type="checkbox"/>
20 mg	11123450	11123496	11123542	11123588	<input type="checkbox"/>
50 mg	11123451	11123497	11123543	11123589	<input type="checkbox"/>
100 mg	11123452	11123498	11123544	11123590	<input type="checkbox"/>
200 mg	11123453	11123499	11123545	11123591	<input type="checkbox"/>
500 mg	11123454	11123500	11123546	11123592	<input type="checkbox"/>
1 g	11123455	11123501	11123547	11123593	<input checked="" type="checkbox"/>
2 g	11123456	11123502	11123548	11123594	<input checked="" type="checkbox"/>
5 g	11123457	11123503	11123549	11123595	<input checked="" type="checkbox"/>
10 g	11123458	11123504	11123550	11123596	<input checked="" type="checkbox"/>
20 g	11123459	11123505	11123551	11123597	<input checked="" type="checkbox"/>
50 g	11123460	11123506	11123552	11123598	<input checked="" type="checkbox"/>
100 g	11123461	11123507	11123553	11123599	<input checked="" type="checkbox"/>
200 g	11123462	11123508	11123554	11123600	<input checked="" type="checkbox"/>
500 g	11123463	11123509	11123555	11123601	<input checked="" type="checkbox"/>
1 kg	11123464	11123510	11123556	11123602	<input checked="" type="checkbox"/>
2 kg	11123465	11123511	11123557	11123603	<input checked="" type="checkbox"/>
5 kg	11123466	11123512	11123558	11123604	<input checked="" type="checkbox"/>
10 kg	11123467	11123513	11123559	11123605	<input checked="" type="checkbox"/>
20 kg	11123468	11123514	11123560	11123606	<input checked="" type="checkbox"/>
Shape	<input type="checkbox"/> Sheet weights				
Design	<input checked="" type="checkbox"/> Knob weights with adjusting cavity				
Box material	Plastic				

Weight Sets

Weight Range	Class 1	Class 2	Class 3	Class 4
1 mg – 500 mg	11124000	11124022	11124044	11124066
1 mg – 100 g	11124002	11124024	11124046	11124068
1 mg – 200 g	11124004	11124026	11124048	11124070
1 mg – 500 g	11124006	11124028	11124050	11124072
1 mg – 1 kg	11124008	11124030	11124052	11124074
1 mg – 2 kg	11124010	11124032	11124054	11124076
1 mg – 5 kg	11124012	11124034	11124056	11124078
10 mg – 50 g	11124014	11124036	11124058	11124080
1 mg – 50 mg	11124016	11124038	11124060	11124082
1 g – 100 g	11124018	11124040	11124062	11124084
1 g – 500 g	11124020	11124042	11124064	11124086
Box material	Plastic			

Weight Set Contents

Weight Range	1 mg	2 mg	5 mg	10 mg	20 mg	50 mg	100 mg	200 mg	500 mg	1 g	2 g	5 g	10 g	20 g	50 g	100 g	200 g	500 g	1 kg	2 kg	5 kg
1 mg – 500 mg	1x	2x	1x	1x	2x	1x	1x	2x	1x	-	-	-	-	-	-	-	-	-	-	-	-
1 mg – 100 g	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	-	-	-	-	-
1 mg – 200 g	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	-	-	-	-
1 mg – 500 g	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	-	-	-
1 mg – 1 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	-	-
1 mg – 2 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	-
1 mg – 5 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x
10 mg – 50 g	-	-	-	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	-	-	-	-	-	-
1 mg – 50 mg	1x	2x	1x	1x	2x	1x	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-
1 g – 100 g	-	-	-	-	-	-	-	-	-	1x	2x	1x	1x	2x	1x	1x	-	-	-	-	-
1 g – 500 g	-	-	-	-	-	-	-	-	-	1x	2x	1x	1x	2x	1x	1x	2x	1x	-	-	-

Reference Weights

The Highest in Metrological Performance

National metrology institutes (NMIs) strive for measurements with the smallest uncertainty. "E0" calibration weights, which have a higher accuracy than E1, enable the highest metrological performance when calibration mass standards.

To produce "E0" weights, METTLER TOLEDO hand selects the best E1 weights which are then calibrated by an NMI with an uncertainty of 1/5*MPE (E1). These reference weights are delivered with the NMI calibration certificate.

Individual Weights

Nominal Value	Class "E0"	Design
1 mg	30541858	△
2 mg	30541859	△
5 mg	30541860	△
10 mg	30541861	△
20 mg	30541862	△
50 mg	30541863	△
100 mg	30541864	△
200 mg	30541865	△
500 mg	30541866	△
1 g	30541867	■
2 g	30541868	■
5 g	30541869	■
10 g	30541870	■
20 g	30541871	■
50 g	30541872	■
100 g	30541873	■
200 g	30541874	■
500 g	30541875	■
1 kg	30541876	■
2 kg	30541877	■
5 kg	30541878	■
10 kg	30541879	■
20 kg	30548856	■
50 kg	30548857	■
Shape	△ Wire weights	
Design	■ Monobloc knob weights	
Box material	Plastic (50 kg: wood)	



△ Wire weight
■ Monobloc knob weight



Weight set



Weight Sets

Weight Range	Class "E0"
1 mg – 500 mg	30548898
1 mg – 200 g	30548899
1 mg – 1 kg	30548900
1 mg – 2 kg	30548901
1 mg – 5 kg	30548902
1 g – 50 g	30548903
1 g – 500 g	30548904
1 kg – 5 kg	30548906
Box material	Aluminum

Weight Set Contents

Weight Range	1 mg	2 mg	5 mg	10 mg	20 mg	50 mg	100 mg	200 mg	500 mg	1 g	2 g	5 g	10 g	20 g	50 g	100 g	200 g	500 g	1 kg	2 kg	5 kg
1 mg – 500 mg	1x	2x	1x	1x	2x	1x	1x	2x	1x	-	-	-	-	-	-	-	-	-	-	-	-
1 mg – 200 g	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	-	-	-	-
1 mg – 1 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	-	-
1 mg – 2 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	-
1 mg – 5 kg	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x	1x	2x	1x
1 g – 50 g	-	-	-	-	-	-	-	-	-	1x	2x	1x	1x	2x	1x	-	-	-	-	-	-
1 g – 500 g	-	-	-	-	-	-	-	-	-	1x	2x	1x	1x	2x	1x	1x	2x	1x	-	-	-
1 kg – 5 kg	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	1x	2x	1x



METTLER TOLEDO

Microgram Weights

Enabling Specialized Applications

Microgram weights are used predominantly by NMIs for scientific research and calibration. They also support general industrial research in areas where instrument calibration with milligram weights is not sufficiently accurate. Together with specially developed handling tools and accessories, these weights offer a complete solution for users that go beyond traditional weighing boundaries.

Individual Weights

Nominal Value	Class "E0"	Incl. NMI Certificate
0.05 mg	30078800	30080144
0.1 mg	30078801	30080145
0.2 mg	30078802	30080146
0.5 mg	30078803	30080147
Shape	△ Wire weights	
Box material	Aluminum/ Plastic	

Weight Sets

Weight Range	Class "E0"	Incl. NMI Certificate	0.05 mg	0.1 mg	0.2 mg	0.5 mg	Accessories
0.05 mg – 0.5 mg	30078805	30078807	1x	1x	2x	1x	Included
0.05 mg – 0.5 mg	30078804	30078806	1x	1x	2x	1x	–
Box material	Aluminum						



Weight set and weight set with accessories

Weight Accessories

Ensure Correct Test Weight Handling

Choose from a comprehensive range of accessories for professional weight handling, including ergonomic tweezers, weight forks, weight handles and several types of gloves.

Tweezers

Tips	Weight	Length	Material No.
Straight	1 mg – 50 g	130 mm	00015900
Straight	1 g – 1 kg	220 mm	11116544
Straight	1 mg – 50 g	140 mm	11116543
Bent	1 g – 1 kg	210 mm	00015901
Bent	1 g – 200 g	130 mm	11116540
Straight	1 mg – 500 mg	130 mm	30040321



Weight Forks

Material	Weight	Length	Material No.
Aluminum/Polyamide	500 g – 1 kg	300 mm	00222175
Aluminum/Polyamide	2 kg	320 mm	00015902
Aluminum/Polyamide	5 kg	470 mm	00015903
ABS	500 g	150 mm	11123094
ABS	1 kg	150 mm	11123095



Weight Handles

Material	Weight	Material No.
Steel with rubber coating	2 kg	11123096
Steel with rubber coating	5 kg	11123097
Aluminum	10 and 20 kg	00015904
Aluminum	10 and 20 kg with ear for crane	11116517
Aluminum	50 kg with ear for crane	11116515



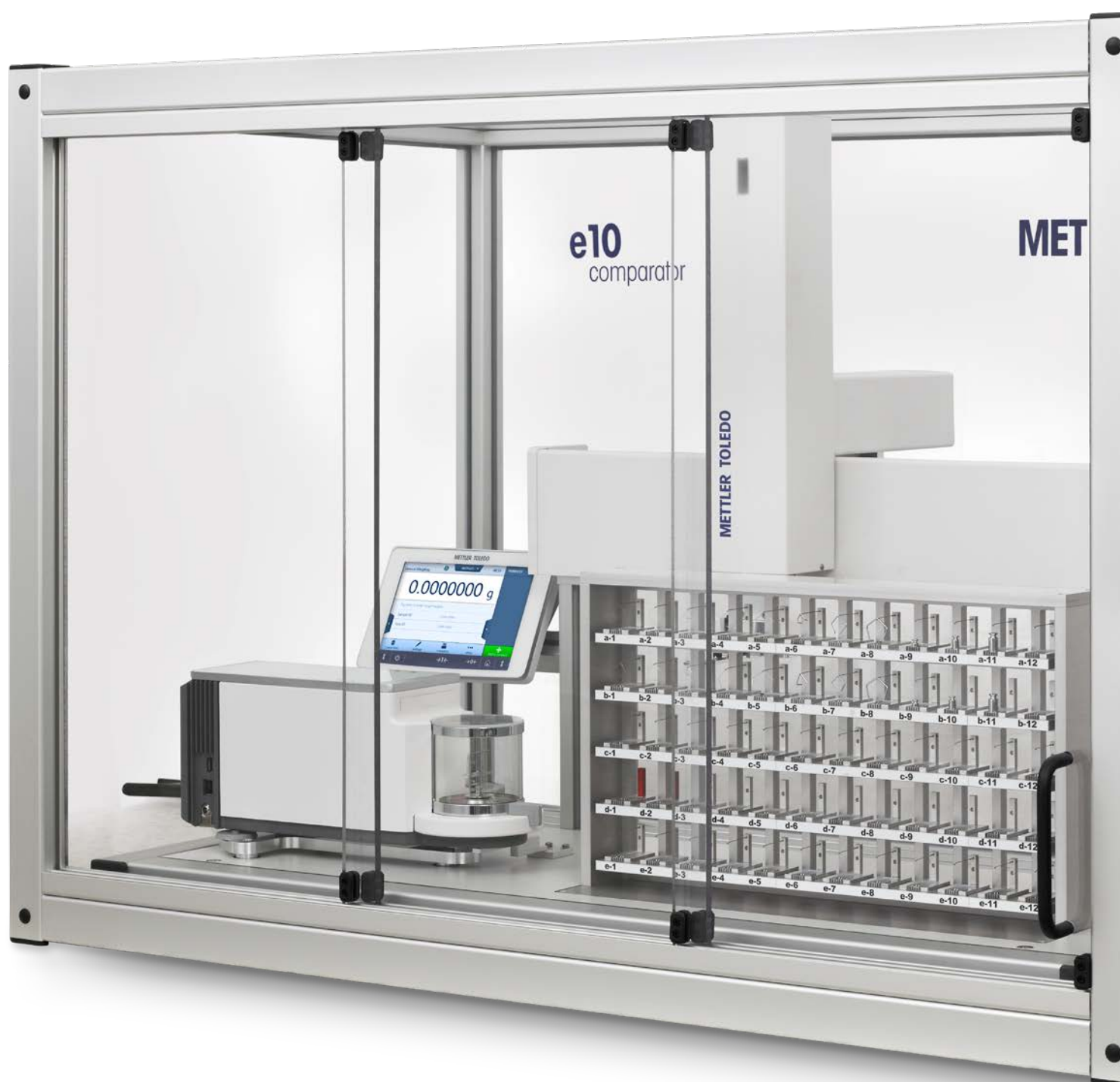
Miscellaneous Accessories

	Material No.
Leather gloves, pair, not suitable for regulated environments	00072001
Nylon gloves, pair, suitable for all environments	11123098
Microfiber cloth, suitable for all environments	00158798
Brush, suitable for all environments	00158799
Weight marking, up to 5 digits, alphanumeric, on 1 g – 50 kg weights	11116500
Air bellow, for weight cleaning	11116548



Mass Comparators

Highly Accurate Mass Determination





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Manual Mass Comparators	124–125
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MC Link Calibration Software	128–129



Scan this code for more information.

► www.mt.com/Comparator

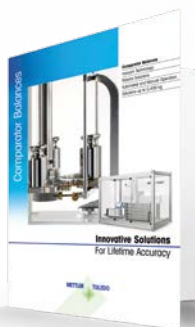
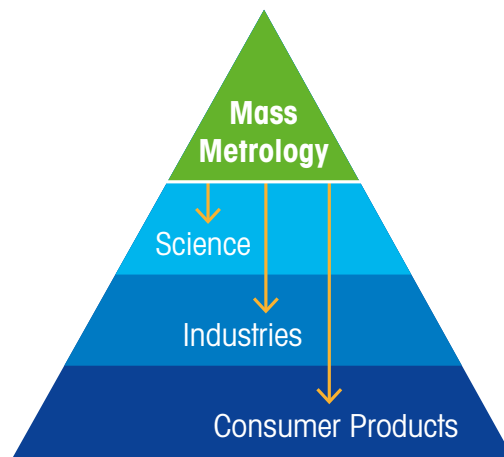
Comparator Balances For Utmost Accuracy

METTLER TOLEDO offers a comprehensive portfolio of mass comparators for seamless traceability in mass calibration and highly accurate weighing applications.

Thanks to unrivaled repeatability and resolution, mass comparators are the most accurate balances in existence today. They determine the exact mass of unknown weights by comparison with a known reference weight.

Weights calibrated in an ISO 17025-accredited calibration laboratory are fully traceable to the international definition of the kilogram. Hence mass comparators play a key role in the realization of measurement standards.

METTLER TOLEDO mass metrology solutions ensure the highest quality measurements and full compliance with country-specific norms in all areas of science, industry and consumer products.



For more details please request the Comparator Balances Brochure (11795840).

► www.mt.com/Comparator

Ensured Traceability

Choose from more than 20 models to cover your individual weighing range and accuracy level. Thanks to an ergonomic design, our comparator balances are easy to use. Complementary MC Link software ensures maximized productivity.



Manual Comparators

Differentiate by Competence

Enhance your service offering by adding the capability to perform density calibration of customer weights.



Volume Comparators

Reduce Your Uncertainties

Calibrate weights up to 60 kilograms and achieve the smallest uncertainties by running measurements at night without human influence. Maintain constant pressure or vacuum to eliminate air-density dependencies.



Automated Comparators

Where Productivity Matters

Enjoy worry-free weight calibration by fully automating all calibrations on your robotic mass comparator. Benefit from the highest productivity and improved measurement performance.



Robotic Comparators

Manual Solutions

Accurate and Versatile

METTLER TOLEDO manual mass comparators offer a winning combination of the highest accuracy plus unmatched performance and are perfect for use in mass calibration laboratories or industrial applications.

Our manual mass comparator range covers weight calibration from 0.05 milligrams to 5,400 kilograms. State-of-the-art weighing cells and innovative weighing pans (hanging, hook and LevelMatic™) assure the best repeatability possible. MC Link mass-calibration software is supplied standard and helps you fulfill data-integrity and compliance requirements while cutting calibration time in half.

AX Comparators



Achieve the smallest uncertainties possible on manual comparators with AX window-range models. Hanging weighing pans, double draft shields and sophisticated weighing cells secure the best results for higher weight classes.

XPR Comparators



Enjoy peak performance plus ergonomic and convenient operation. The LevelMatic weighing pan eliminates the influence of eccentricity to improve performance. LevelControl provides a warning if the comparator is off-level to assure reliable results.

XK-KC High Capacity Comparators



XK-KC high capacity mass comparators and balances conquer the challenges of demanding high-load applications that require the highest precision, such as mass calibration up to 5,400 kilograms, gas filling, flow-meter calibration, abrasion determination of heavy-wear parts and more.



Smooth Calibration Process

Reduce manual process steps with automatic data recording. Accelerate your calibration process and prevent data inconsistencies. Gain faster turnaround on weight calibration.



Minimized Uncertainty

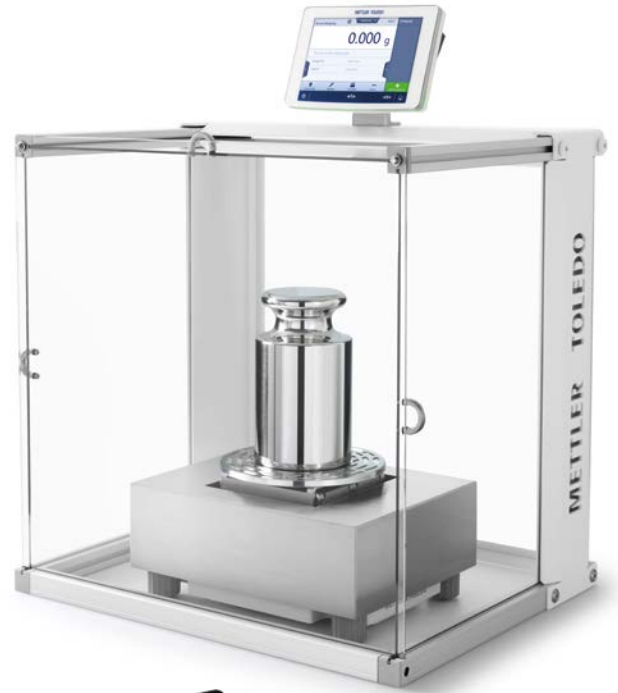
Gain utmost reliability and accuracy thanks to the LevelMatic weighing pan, an innovative mechanism that reduces corner-load effects to the very minimum.



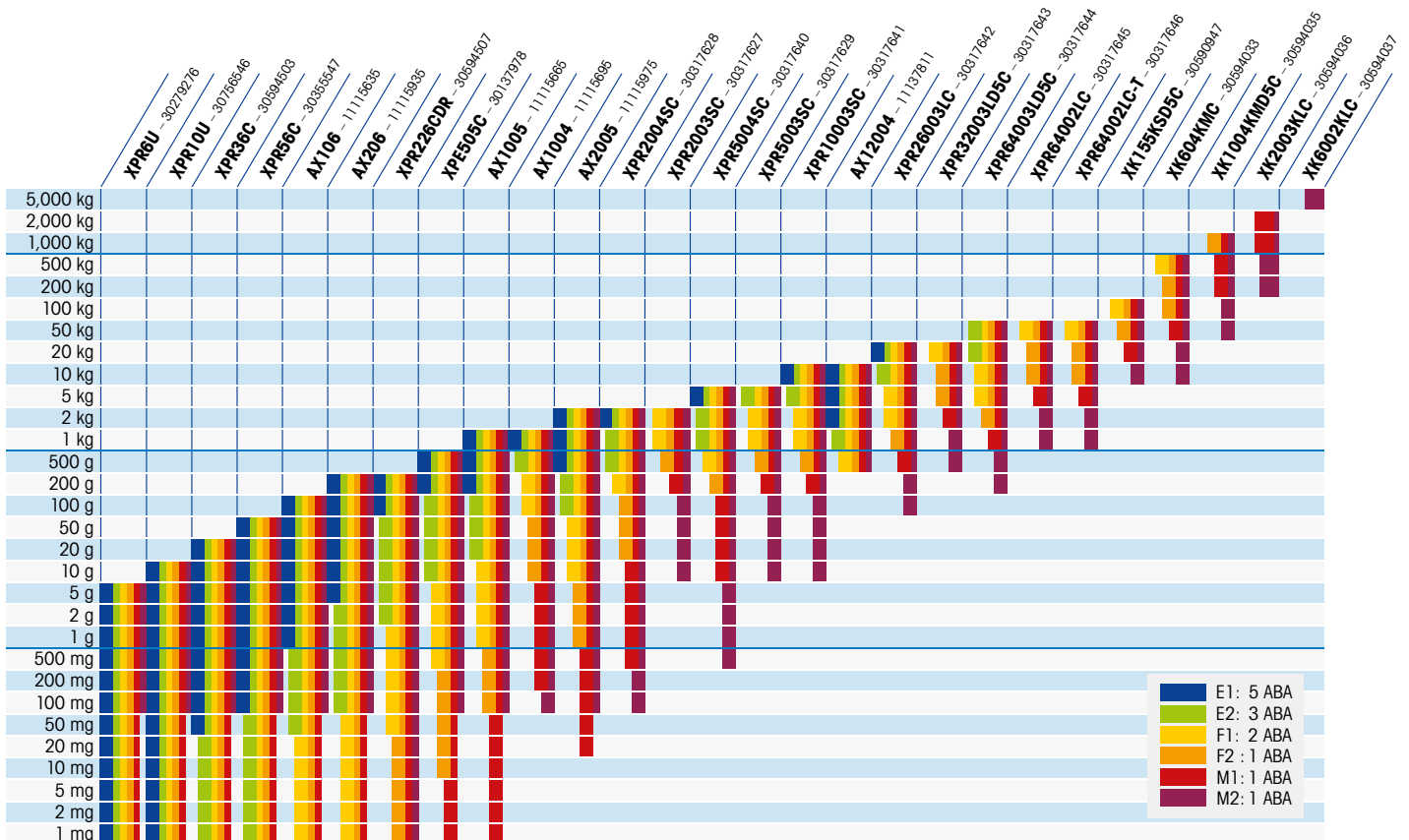
Comprehensive Weight Calibration

MC Link mass calibration software is intuitive and easy to use. Workflows are more efficient and all results are saved securely to help you ensure traceability and regulatory compliance at all times.

► www.mt.com/MC-Link



XPR26003LC mass comparator with MC Link connection



The illustration shows the application ranges according to the OIML R111 recommendation at zero-meter altitude. Please contact us for a personal consultation to discuss your individual needs.

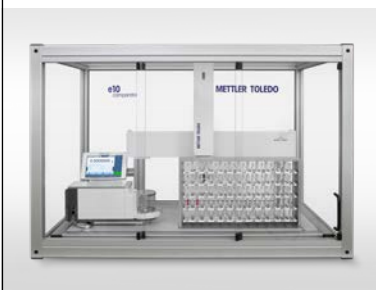
Automated Solutions

High Accuracy and Enhanced Throughput

While research laboratories and NMIs must strive for the smallest uncertainties, private calibration labs must balance accuracy concerns with throughput requirements.

Our automated mass comparators address these demands with application-oriented solutions and different levels of automation. Backed by more than several decades of experience in automated mass comparison, these state-of-the-art vacuum, robotic and automated mass comparators are the instruments of choice around the world.

Robotic Comparators



Our e_Line and a_Line mass comparators carry out weight calibration from 50 yoctograms up to 20 kilograms in a fully automated process, significantly reducing calibration times and measurement uncertainty.

Automated Comparators



The absolute highest accuracy can be achieved by utilizing automated mass comparators. As air density is one of the primary contributors to uncertainty, the portfolio covers vacuum, constant-pressure and ambient-pressure models.

Volume Comparators



Volume comparators address demands to determine the density and volume of weights up to 20 kilograms. Only with a known density of a higher class weight can the compliance of calibration be guaranteed.



M_one vacuum mass comparator

Accuracy Through Dissemination

For full traceability to your primary standard and therefore the International System of Units (SI), automated solutions establish disseminations up to 60 kilograms.



Maximize Throughput

With a magazine capacity for up to 100 weights, robotic mass comparators are designed to run 24 hours a day, maximizing your laboratory's throughput.



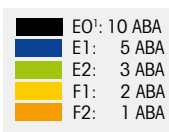
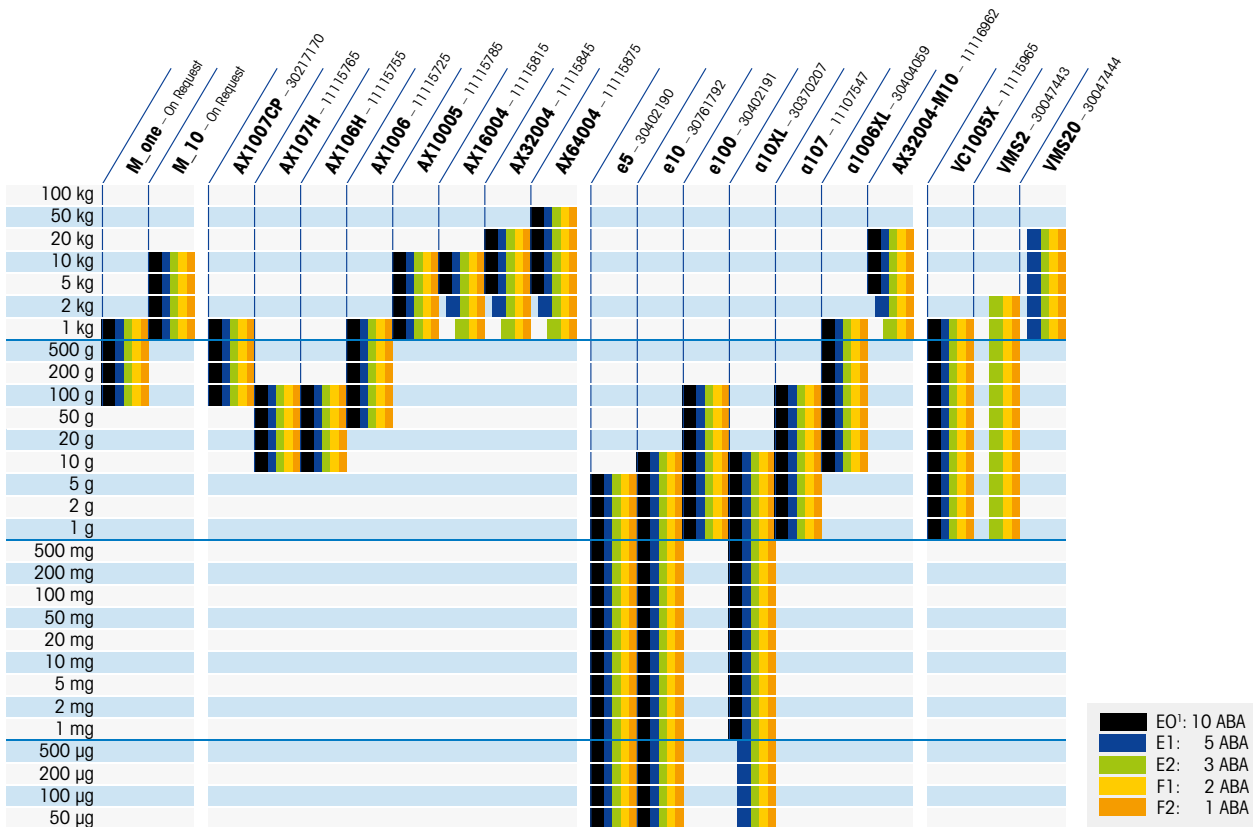
► www.mt.com/Lab-Robotic-MC

Redefining the Kilogram

With years of expertise in mass metrology, METTLER TOLEDO's M_one vacuum mass comparator played an important role in the redefinition of the kilogram and continues to play an important role in its actual realization and dissemination.



► www.mt.com/Lab-KG-Redefinition



The illustration shows the application ranges according to the OIML R111 recommendation at zero-meter altitude. In cases where the application range is limited by the physical size of the weight, additional support plates may be required to accommodate smaller weights. Please contact us for a personal consultation to discuss your individual needs.

¹ 1/5 uncertainty contribution of the E1 tolerance limit

Increase Calibration Efficiency

Smart Data Processing and Control

Today's mass-calibration challenges demand a combination of high data security and process efficiency. Regulations must be followed and complex calculations carried out for accurate results and compliance.

MC Link software fulfills the requirements of today's mass calibration laboratory and helps you overcome the challenges inherent in tedious mass-calibration processes. Operable in multiple languages, the Office Client is designed to perform administrative and preliminary work, while the Laboratory Client provides all functionality for mass calibration and equipment testing.

MC Link reduces calibration workflows to a minimum by increasing efficiency, data security and conformity.

Office Client

- User and permission management
- Administration of comparators and climate system
- Customer and weight management
- Process and uncertainty configurator
- Reporting and certificate printout in a few clicks
- Audit trail and integrated process quality control for regulatory support

Office



	Material No.		Material No.
MC Link software – standalone version	30208278	MC Link option – audit trail license	30208283
MC Link software – multi-place version	30208280	MC Link option – barcode package	30212767
MC Link upgrade – multi-place license	30208289	MC Link Validation Handbook	30212634
MC Link license – 1 instrument	30208285	ClimaLog30 climate station	30078423
MC Link license – 1 instrument of any other brand	30208288	DataLog30 – 2 external temperature sensors	30078424

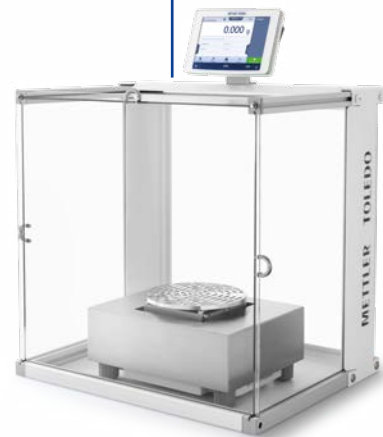


Laboratory Client

- Weight calibration
- Mass-comparator testing
- Real-time statistical process control



Laboratory



Smooth Calibration



- Fast and secure calibration
- Reduced manual handling
- Improved accuracy
- Reduced lead times

Efficient Workflow



- Quality control and mass calibration in one process
- Automatic calculations and tolerance testing
- Direct certificate printing
- Increased productivity and throughput

Reliable Results



- Integrated process control
- Paperless, secure and traceable
- User management with comprehensive data-reporting for validation

Moisture Analyzers

Because Moisture Content Matters





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Moisture Analyzers Overview	132–133
Excellence Moisture Analyzers	134–135
Advanced Moisture Analyzers	136–137
Standard Moisture Analyzers	138
Moisture Analyzer Comparison Table	139
SmartCal™ and Accessories	140–141



Scan this code for more information.

► www.mt.com/Moisture

Accurate Moisture Determination

Fast, Precise, Reliable

Our moisture analyzers provide fast, precise and reliable moisture analysis for quality and in-process control applications. Robust and easy to use, these analyzers offer you long, reliable operation whether you work in a highly regulated pharmaceutical lab, need the highest resolution to measure moisture content in plastics, or take moisture measurements for food-product quality control.



High-Performance Moisture Analysis

With highly accurate and repeatable results for any sample type, these analyzers are ideal for applications with low moisture content such as plastics. Clever features support data handling, process security, and compliance. The results prediction functionality enables reduced time-to-result to speed up decision-making.



Excellence Analyzers

Solid, Versatile Performance

Suitable for a variety of industries, this unit offers user-guided touchscreen operation with method shortcuts for ease-of-use. Its compact and robust design works for both quality and in-process control applications.



Advanced Analyzers

Basic Moisture Analysis

This is a reliable, easy and affordable instrument with basic functions for standard moisture analysis. It offers simple, 3-step operation with method buttons.



Standard Analyzers

Routine Testing and Accessories

Verify your moisture analyzer's performance with SmartCal™, our unique routine testing substance. Benefit from a range of accessories such as sample pans, glass-fiber filters and PC software to ensure the best results and most efficient processes.



SmartCal and Accessories

High-Performance Moisture Analysis

Designed for Accurate Results and Data Integrity

Our Excellence analyzers are equipped with high-performance weighing cells for reliable moisture results even when measuring very low moisture content. Drying method flexibility in combination with the Method Wizard ensures accurate moisture results for any sample type in research, quality control and in-process control. The embedded results prediction functionality enables reduced time-to-result to speed up decision-making. Integrated routine testing and quality management features help to ensure optimal instrument performance on an ongoing basis to meet the demands of highly regulated industries.

Accurate Results for All Sample Types



Get highly reliable and repeatable moisture results thanks to fast and accurate halogen heating and superior weighing performance with up to 0.001 percent moisture content readability. Highly flexible moisture methods including a preheat function and multiple drying programs enable accurate moisture content determination of samples with moisture contents ranging from <0.1 percent up to 100 percent.

Data Integrity and Process Control



Define multiple users with individual access rights. Assign methods to each user to ensure adherence to SOPs/regulations and reduce the risk of errors. The zero results and auto lock-out option assist with data integrity. Customizable control and warning limits enable instant pass/fail decisions.

Versatile Data Transfer and Instrument Control



Connect the instrument to a network through Wi-Fi, Ethernet, RS232 or USB. This enables the printing of results on any strip or network printer and the pushing of A4/letter PDF reports and CSV files to file servers. You can also import or export user and method settings as XML files via a USB drive. Integrate your moisture analyzer into any management system by using our intuitive set of MT-SICS commands.



Reduce Your Measurement Time

The HX204's QuickPredict™ function predicts the final moisture content in a fraction of the usual measurement time. This allows you to make faster decisions on further analysis and processing. QuickPredict is also optional on HS153.

► www.mt.com/Moisture-QuickPredict



Fast and Easy Cleaning

The hanging weighing pan and flat stainless-steel surface underneath allow fast and easy cleaning without the risk of dirt falling into the weighing cell.



Assure Optimal Performance

Integrated routine testing features ensure the instrument is always performing optimally. These include FACT, SmartCal and tests for the heating and weighing units.



Integrated Training and Support

The Setup Wizard gets you up and running right away. The instrument tutorial shows you how to conduct a measurement and create a method. The Method Wizard helps you develop reliable methods for your samples with minimal time and effort.

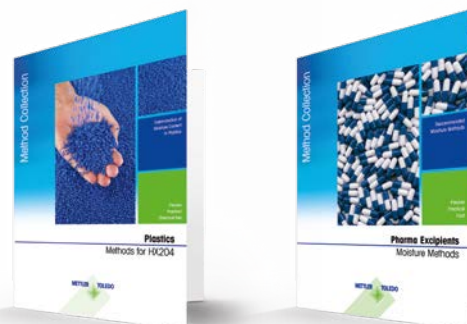


HX204 moisture analyzer

Measurement Range

(Detailed specifications on page 139)

	HX204	HS153
Repeatability (sd) with 2 g sample	0.05%	0.05%
Recommended moisture range	0.01–100 %MC	0.5–100 %MC
Material No.	30019875	30019876



Download our free method collections for pharma excipients and plastics to obtain tailor-made moisture methods for frequently tested samples.

► www.mt.com/Moisture

All-Rounder for Routine Tasks

In the Lab or on the Production Floor

Touchscreen operation and user guidance make the HC103 perfect for your routine moisture tasks. Use the integrated Method Wizard for quick and easy development of robust moisture methods. Define method shortcuts and start methods directly on the home screen. View your results in real-time with a drying curve. A compact design saves space while robust components help to ensure a long instrument lifetime, whether you work in a busy laboratory or harsh production environment. The HC103 offers you ease and convenience for both quality and in-process control applications.

User-Friendly Operation



The large 7-inch color touchscreen offers an easy-to-navigate user interface to simplify your routine tasks. Press the method shortcut on the home screen and follow the step-by-step graphical user guidance to start and run your measurement. Measurement progress is visualized on a real-time drying curve. To avoid accidental changes, settings can be protected.

Robust and Compact Design



A tough metal housing combined with reliable halogen technology ensures a long instrument lifetime and reliable results. Flat stainless steel surfaces are easy to clean. A compact design makes the HC103 perfectly suited for the laboratory or production floor.

Quick Access to Methods and Results



Define up to 20 methods using standard or rapid drying with various switch-off criteria and display units. Store up to 100 results in the instrument and review them easily in the results overview. Either print your results or transfer them to a USB flash drive or PC.



Easy Reporting

Production and quality control requires regular moisture testing for each batch. ID management (e.g. batch or sample ID) together with a barcode reader make documentation straightforward and easy.



Multiple Languages

The One Click™ user interface offers 13 languages. Instrument operation and results reporting can be done in your preferred language.



Integrated Training and Support

The Setup Wizard gets you up and running right away. The instrument tutorial shows you how to conduct a measurement and create a method. The Method Wizard helps you develop reliable methods for your samples with minimum time and effort.



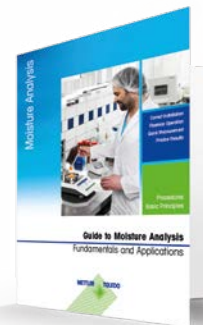
EasyDirect™ Moisture

Improve your data and instrument management with EasyDirect Moisture PC software. Connect up to 5 moisture analyzers and collect results from measurements and routine testing. Keep an overview of instrument status and receive reminders for routine testing. Download a free trial version:

► www.mt.com/Moisture-Software



HC103 moisture analyzer



Read more about the fundamentals and applications of moisture analysis in our moisture guide.

► www.mt.com/Moisture

Measurement Range

(Detailed specifications on page 139)

	HC103 ¹
Repeatability (sd) with 2 g sample	0.10%
Recommended moisture range	1.0–100 %MC
Material No. 230 V	30216101
Material No. 115 V	30216103

¹ Looking for a replacement for your HB43-S or HB43 moisture analyzer? The HC103 is its successor and offers the same reliable performance and quality.



HB43-S/HB43 moisture analyzer



HC103 moisture analyzer

Simple Moisture Analysis

Reliable, Easy and Affordable

Our Standard moisture analyzers are robust instruments that are straightforward to use. With simple method parameter choices and basic documentation functionalities, they fulfill the needs of users who do not have special requirements. Easy 3-step operation and reliable measurement performance ensure you have everything you need to make accurate moisture measurements for years to come.

Simple 3-Step Operation



Get fast moisture results in an easy 3-step process:

1. Tare the empty weighing pan
2. Add the sample
3. Press start and see your results in just a few minutes

Brilliant Display



Thanks to large numbers and a brilliant LCD display, information and results are easy to read in all light conditions.

Rugged Construction



The instrument is designed to last for many years. The robust metal housing, stainless-steel surface and reliable halogen technology will serve you well in all your daily moisture measurements.

Measurement Range

	HE73	HE53
Repeatability (sd) with 2 g sample	0.15%	0.15%
Recommended moisture range	1.0–100 %MC	1.0–100 %MC
Material No. 230 V	30237200	30100246
Material No. 115 V	30237205	30100251



HE53 moisture analyzer

Moisture Analyzer Comparison Table

		HX204	HS153	HC103	HE73	HE53
Repeatability (sd)	With 2 g sample	0.05%	0.05%	0.10%	0.15%	0.15%
	With 10 g sample	0.01%	0.01%	0.015%	0.05%	0.05%
Drying Programs	Standard, rapid	•	•	•	•	•
	Gentle	•	•	–	–	–
	Step	•	–	–	–	–
Readability		0.1 mg	1 mg	1 mg	1 mg	1 mg
Storage	Methods	300	100	20	2	1
	Results	3,000	3,000	100	1	1
Recommended %MC		>0.01%	>0.5%	>1.0%	>1.0%	>1.0%
Result Handling	Control charts	•	•	–	–	–
	Result overview	•	•	•	–	–
	ID management	•	•	•	–	–
	Real-time drying curve	•	•	•	–	–
	A4 network printing	•	•	–	–	–
	Export to FTP server	•	•	–	–	–
User Management		Multiple users with password protection		Settings protection	–	–
Switch-Off Criteria	Weight loss/time (mg/s)	5 automatic, free	5 automatic, free	5 automatic, free	Auto, free	Auto
	Time (min)	1–480	1–480	1–480	1–120	1–120
Method Development Support		Method Wizard, test measurement, temperature assistant		Method Wizard	–	–
QuickPredict		•	Optional	–	–	–
Test and Adjust	Temperature [°C]	Freely definable	Fixed at 100/160	Fixed at 100/160	Fixed at 100/160	Fixed at 100/160
	3 rd test temperature	Freely definable	–	–	–	–
	FACT	•	–	–	–	–
	Weight [g]	0.1–200	0.1–150	100	50	50
Drying Temperature	Range [°C]	40–230	40–230	40–230	50–200	50–160
Display Modes		%MC, %DC, %AM, %AD, g				
Interfaces	Wi-Fi, Ethernet	•	•	–	–	–
	USB device/host	1/2	1/2	1/2	–	–
	SD card	•	•	–	–	–
	RS232	•	•	•	•	•
Capacity		201 g	151 g	101 g	71 g	54 g

SmartCal Test Substance

Trusted Moisture Results

Whether producing food, chemical or pharmaceutical products, no one can risk inaccurate results. With strict regulations and ongoing audits, efficient qualification, calibration and performance verification and documentation are vital.

SmartCal™ is an innovative test substance that offers a fast and efficient way to verify moisture analyzer performance. Testing your moisture analyzer regularly with SmartCal ensures that your measurements are reliable and fulfill the demands of your industry's regulations.

Certified SmartCal



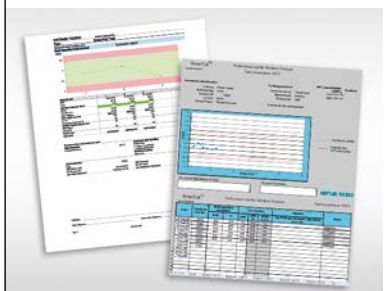
The SmartCal test substance is certified by the independent German Federal Institute for Materials Research and Testing. The Certificate of Analysis satisfies strict regulatory requirements.

Quick and Easy Testing



Simply select the integrated SmartCal method on the instrument, distribute the contents of the test sachet evenly over the sample pan and start the measurement. After 10 minutes, you know if your instrument's performance is satisfactory or not.

Documented Performance



SmartCal measurement reports make it easy to monitor and interpret your instrument's performance over time. Results can be stored directly in the instrument or manually entered into our free, validated Excel report sheet.

SmartCal Test Substance

Product	Material No.
SmartCal StarterPac	30005917
cSmartCal StarterPac	30005918
SmartCal12	30005792
cSmartCal12	30005793
SmartCal24	30005790
cSmartCal24	30005791

► www.mt.com/SmartCal



SmartCal: certified moisture analyzer test substance

Service Solutions to Ensure Accuracy

Professionally executed installation, qualification and periodic calibration services are essential to ensure trusted moisture results and compliance. METTLER TOLEDO offers a broad range of instrument qualification and verification solutions so your moisture analyzer performs perfectly from the start.

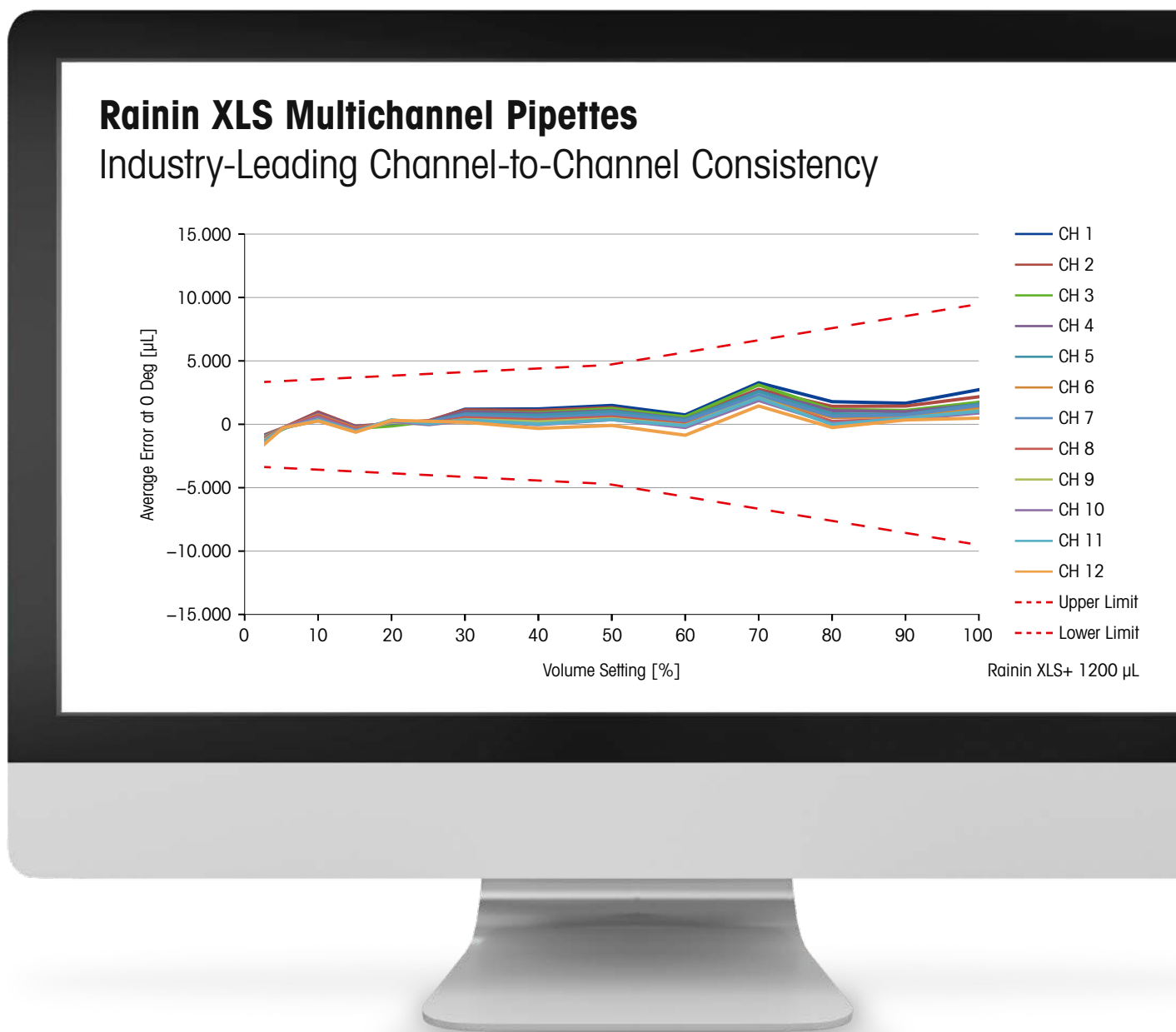
Accessories for Moisture Analyzers

	Description	Quantity	Material No.
Sample Handling	Aluminum sample pan	80	00013865
	Glass fiber filters	100	00214464
	Extra-strong aluminum sample pans	80	11113863
	Reusable steel sample pan, height 6 mm	3	00214462
	Downholder	1	00214758
	Textile cage for bulky samples (HA-cage)	1	00214695
Quality Management	Certified temperature kit – HX/HS/HC	1	30020851
	Certified temperature kit – HE	1	30134141
	Certified adjustment weight 100 g – HX/HS/HC	1	30406400
	Certified adjustment weight 50 g – HE	1	30402574
Printers¹	P-56RUE thermal printer	1	30094673
	RS-P25 compact printer with RS232 interface	1	30702967
	Printer paper (for P25 printer)	5	00072456
	Printer paper (for P25), self-adhesive	3	11600388
	Printer ribbon, black	2	00065975
	P-52RUE dot-matrix printer	1	30237290
Software and Accessories	EasyDirect Moisture (for HX/HS/HC)	1	30522676
	QuickPredict license (for HX/HS)	1	30518268
	Support stand – HX/HS	1	30018474
	Printer holder – HX/HS	1	30066692
	Dust filters – HX/HS	50	30020838
	Protective cover – HX/HS	1	30003957
	Anti-theft device – HX/HS/HC/HE	1	11600361
	HX/HS transportation case	1	30020836
	Protective cover – HC	1	30216115
	Dust filters – HC/HE/HB	50	11113883
	Protective cover – HE	1	30209145
	USB barcode reader – HX/HS/HC	1	30417466
	USB Wi-Fi adapter (for HX/HS)	1	30541518
	Installation Pacs	see pages 82–83	

¹ For more information about printers, see "Printers" on pages 96–97

Pipetting Solutions

Products for the Life Sciences



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Pipet-Lite™ XLS+™ Manual Pipettes

Ergonomic design and exceptional performance

- 8- and 12-channel



E4™ XLS+ Electronic Pipettes

Precision across all channels

- 8- and 12-channel



Pipet-Lite XLS™ Adjustable Spacer

Tubes to plates with just a twist!

- 6- and 8-channel
- manual and electronic



Scan this code for more information.

► www.mt.com/Rainin

Why Rainin?

Quality, Performance and Purity!

Professional labs around the world rely on Rainin for their liquid-handling protocols.

Whether your goal is to be first to market or first to publish, the accuracy, precision and ergonomics of your equipment can hugely help – or hinder – your success. Choose Rainin!



Quality

From rugged construction and innovative features to exceptional comfort and ergonomic design, Rainin quality is recognized worldwide.

Performance

Rainin pipettes are renowned for precision and accuracy. Rainin multichannels offer industry-leading channel-to-channel consistency.

Purity

BioClean Ultra™ is the industry's most comprehensive standard for tip purity. We test every lot for purity and stand behind every tip's performance.

There's a reason Rainin multichannel pipettes outperform all other multichannels worldwide – exceptional comfort and handling along with industry leading channel-to-channel consistency.

Unparalleled Comfort

Ergonomic pipettes in manual, electronic, single-channel and multichannel formats for all pipetting applications. Built-in RFID tags, when used with SmartStand, streamline pipette management.



Ergonomic Pipettes

High Throughput

The BenchSmart™ 96 and Liquidator™ 96 high-throughput pipetting systems are powerful, intuitive and easy to use. Speed up workflows using 96- and 384-well plates in volumes from 0.5 to 1,000 µL.



96/384-Well Pipetting

Exceptional Purity

Rainin BioClean Ultra tips are among the cleanest and most tested tips on the market. A wide range of inert BioClean Ultra tips are available for all pipetting applications.



BioClean Ultra Tips

World-Class Support

Whether on-site or in our ISO 17025-accredited labs, METTLER TOLEDO delivers a service experience that is unparalleled for quality and value.



Service

Pipet-Lite XLS+

Manual Performance You Can Trust

With the Rainin Pipet-Lite™ XLS+™ family of pipettes, METTLER TOLEDO blends cutting-edge engineering and innovation to deliver highly reproducible results that offer exceptional comfort.

XLS+ Single Channel

Lighter and Smoother Operation



Pipet-Lite XLS+ further reduces plunger force and tip-ejection forces. Eleven models cover volume ranges from 0.1 μL to 20 milliliters; custom fixed volumes are also available in LTS and traditional models. The RFID tag in every XLS+ model makes calibration and pipette inventory management easy when used with SmartStand and PipetteX™ software.

XLS+ Multichannel

Ideal for 96-Well Plate Work



Pipet-Lite XLS+ multichannels with lightweight liquid ends deliver perfect sealing, consistent sample pick-up on all channels and reproducible results. With volumes from 1 to 1,200 μL in 8- or 12-channel formats, these multichannel pipettes exceed laboratory requirements.

XLS Adjustable Spacer

Fast Format Changes between Plates and Tubes



Pipet-Lite XLS Adjustable Spacer pipettes let you set nozzle spacing for use with 24-, 48- or 96-well plates with just a twist: 9–19 millimeters on 6-channel and 9–14 millimeters on 8-channel models. The liquid end rotates 360° for quick alignment with the plate.

► www.mt.com/PipetteLiteXLS



SmartStand

Pipet-Lite XLS+ Pipettes

Single Channel	Material No.
0.1–2 µL	17014393
0.5–10 µL	17014388
2–20 µL	17014392
10–100 µL	17014384
20–200 µL	17014391
20–300 µL	17014405
100–1,000 µL	17014382
200–2,000 µL	17014390
500–5,000 µL	17011790
1–10 mL	17011783
2–20 mL	17011788
Multichannel: 8-Channel	
0.5–10 µL	17013802
2–20 µL	17013803
5–50 µL	17013804
20–200 µL	17013805
20–300 µL	17013806
100–1,200 µL	17014496
Multichannel: 12-Channel	
0.5–10 µL	17013807
2–20 µL	17013808
5–50 µL	17013809
20–200 µL	17013810
100–1,200 µL	17014497

Adjustable Spacer: 6-Channel	Material No.
20–300 µL	17011841
100–1,200 µL	17011840

Adjustable Spacer 8-Channel	
5–50 µL	17011844
20–300 µL	17011843
100–1,200 µL	17011842

Accessories	
SmartStand – smart charging stand	30312897
Magnetic Hang-Ups™ with magnet, set of 3	17003024
Shelf Hang-Ups without magnet, 3 on a bracket	17014388
Carousel stand for 7 pipettes with fingerhook	17014392
Adapter for Hang-Ups and carousel stand for use with electronic and multichannel pipettes	17014384

E4 XLS+ Electronic Pipette

Simple, Versatile and Secure

Configure the E4™ XLS+ to be as simple or elaborate as your work requires. Keep the functions you want, hide the ones you don't and password protect all, some or none of the E4's modes and features.

XLS+ Single Channel

Simplicity without Compromise



The E4 XLS+ is loaded with features and functionality, redefining simplicity and control in pipetting. The contoured body, even balance and legendary precision and accuracy combine for an extraordinary pipetting experience. When used with SmartStand, built-in RFID tags simplify pipette inventory and calibration management.

XLS+ Multichannel

Precision across All Channels



The E4 XLS+ multichannel pipette is a perfect tool for high-throughput work. It is fast-loading, lightweight and easy to handle. E4 delivers precision and consistency across all channels. Pipette settings, protocols and service alarms can be password protected for GLP/GMP™ compliance.

XLS Adjustable Spacer

Quickly Move Samples between Different Formats



E4 XLS spacers let you set nozzle spacing for 24-, 48- or 96-well plates with just a twist: 9–19 millimeters on 6-channel and 9–14 millimeters on 8-channel models. The liquid end rotates 360° for quick alignment with the plate. E4 XLS spacers are ideal for genomic, proteomic and cell-culture applications.

► www.mt.com/E4-XLSplus



The E4's carousel-like menu makes switching between features and functions fast and easy.

► www.mt.com/RaininE4

E4 XLS+

E4 XLS+ Pipettes

Single Channel	Material No.
0.5–10 µL	17014484
2–20 µL	17014487
10–100 µL	17014483
20–200 µL	17014486
20–300 µL	17014488
100–1,000 µL	17014482
200–2,000 µL	17014485
500–5,000 µL	17012312
1–10 mL	17012313
2–20 mL	17012314

Multichannel: 8-Channel	Material No.
0.5–10 µL	17013792
2–20 µL	17013793
5–50 µL	17013794
20–200 µL	17013795
20–300 µL	17013796
100–1,200 µL	17014498

Multichannel: 12-Channel	Material No.
0.5–10 µL	17013797
2–20 µL	17013798
5–50 µL	17013799
20–200 µL	17013800
20–300 µL	17013801
100–1,200 µL	17014499

Adjustable Spacer: 6-Channel	Material No.
20–300 µL	17012327
100–1,200 µL	17012328

Adjustable Spacer 8-Channel	Material No.
5–50 µL	17012329
20–300 µL	17012330
100–1,200 µL	17012331

Accessories	Material No.
SmartStand – smart charging stand	30312897
Magnetic Hang-Ups with magnet, set of 3	17003024
Shelf Hang-Ups without magnet, 3 on a bracket	17014388
Carousel stand for 7 pipettes with fingerhook	17014392
Adapter for Hang-Ups and carousel stand for use with electronic and multichannel pipettes	17014384

BenchSmart 96

Smart High-Throughput Pipetting

For researchers who want the precision and reproducibility of automated liquid handling yet need the speed and flexibility of a manual system: meet the Rainin BenchSmart™ 96. It's easy to set up, save and retrieve any protocol – from simple one-step procedures to complex, multi-step experiments.

The semi-automated BenchSmart improves reproducibility by eliminating user variability when aspirating and dispensing.

BenchSmart also gives users complete and precise control over the position of the pipetting head. With 4 tray positions, you will save time and reduce your risk of error by minimizing the need to swap out trays and reservoirs.

Smart High-Throughput



With its large touchpad and intuitive interface, BenchSmart makes it easy to set up, save and retrieve any protocol from simple one-step procedures to complex, multi-step experiments. It is so intuitive that anyone in the lab can use it.

3 Pipetting Heads



Quickly replaceable liquid heads provide great flexibility. Get the precision you demand with the 0.5–20 µL head, the daily workhorse you need with the 5–200 µL head and the multi-dispensing capability of the 100–1,000 µL head.

Save Time and Costs



BenchSmart 96 simplifies and speeds up workflows by significantly reducing if not eliminating the need to swap out tip racks and reservoirs.



BenchSmart 96

Description | Max. Capacity | Material No.

BenchSmart 96 High-Throughput Pipetting System

BenchSmart 96	0.5–20 µL	30296705
BenchSmart 96	5–200 µL	30296706
BenchSmart 96	100–1,000 µL	30296707

High-Throughput LTS Tips in Racks

960 tips in 10 racks	20 µL	17011185
960 tips in 10 racks, sterilized	20 µL	17011186
960 tips in 10 racks, sterilized, filter	20 µL	17011117
960 tips in 10 racks	200 µL	17010645
960 tips in 10 racks, sterilized	200 µL	17010647
960 tips in 10 racks, sterilized, filter	200 µL	17010646
960 tips in 10 racks	1,000 µL	30281704
960 tips in 10 racks, sterilized	1,000 µL	30296781
960 tips in 10 racks, sterilized, filter	1,000 µL	30296782

High-Throughput LTS Low-Retention Tips in Racks

960 low-ret. tips in 10 racks, sterilized	20 µL	17014399
960 low-ret. tips in 10 racks, sterilized, filter	20 µL	17014400
960 low-ret. tips in 10 racks, sterilized	200 µL	17014401
960 low-ret. tips in 10 racks, sterilized, filter	200 µL	17014402
960 low-ret. tips in 10 racks, sterilized	1,000 µL	30296783
960 low-ret. tips in 10 racks, sterilized, filter	1,000 µL	30296784

High-Throughput LTS Tips in Stacks

960 low-ret. tips in 10 stacks	20 µL	17011187
960 low-ret. tips in 10 stacks, sterilized	20 µL	17011287
960 low-ret. tips in 10 stacks	200 µL	17010648
960 low-ret. tips in 10 stacks, sterilized	200 µL	17010649

High-Throughput LTS Low-Retention Tips in stacks

960 low-ret. tips in 10 stacks, sterilized	20 µL	17014403
960 low-ret. tips in 10 stacks, sterilized	200 µL	17014404

Liquidator™ 96
Fully Manual Operation



- Fast 96- and 384-well pipetting
- Two models: 0.5–20 µL (Material No. 17014207)
5–200 µL (Material No. 17010335)

► www.mt.com/Liq96

The LTS LiteTouch System

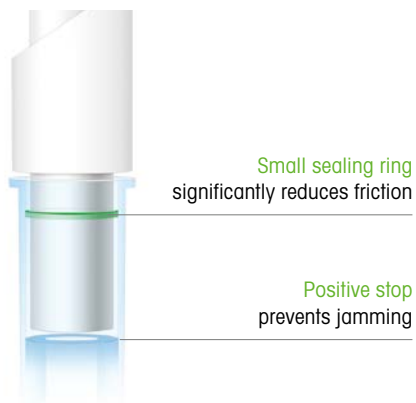
Because Pipetting Shouldn't Hurt

The Rainin LiteTouch System is available on all Rainin XLS+ single and multichannel pipettes.

Minimize fatigue and risk of developing repetitive strain injury (RSI) with the Rainin LTS™ LiteTouch™ tip ejection system.

The LTS difference

LTS

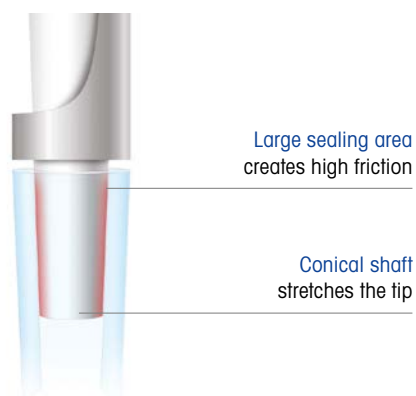


The Rainin LiteTouch System dramatically reduces the amount of force required to load and eject tips. LTS pipettes work in concert with LTS tips to deliver a perfect seal every time.

- LTS tips slide easily over the shaft to create a firm, airtight fit with minimal force.
- A thin sealing ring near the top of an LTS tip virtually eliminates friction between the tip and shaft.

Universal pipetting

UNV



Universal pipettes have cone-shaped shafts that rely on friction to hold tips firmly.

- Universal tips stretch to fit around the shaft.
- Users typically apply force to the shaft to achieve a reliable friction seal.
- Due to the excessive force used to insert the tip, a high force is required to eject the tip.

Learn more about ergonomic pipetting
www.mt.com/LTS

BioClean Ultra

The Gold Standard for Tip Purity and Performance

Rainin carefully tests and certifies each batch of BioClean Ultra™ pipette tips, so researchers can have absolute confidence in the integrity of their experiments and the fidelity of their data.

BioClean Ultra™



Tested and Certified Purity

- The industry's most comprehensive testing protocol.
- The only tips certified to be both protein- and protease-free.
- Virgin polypropylene – completely inert, with no bioactive components.



Clean Manufacturing and Packaging

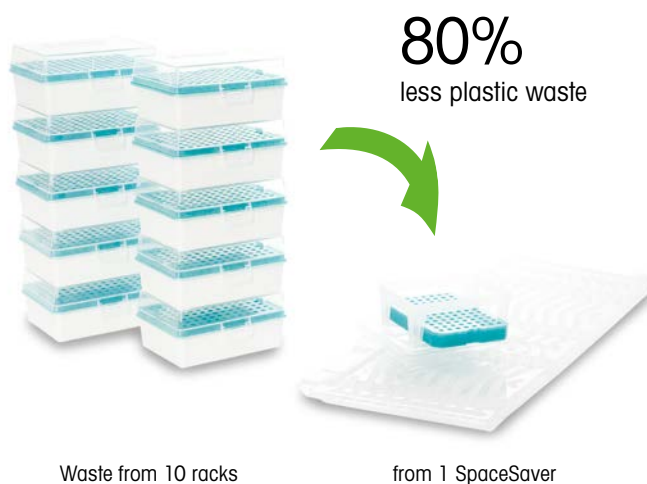
- Manufactured under Class 100,000 clean room conditions.
- Fully automated material handling – zero human contact.
- Strict conformance to ISO 9001 eliminates all external sources of contamination.

Learn more about BioClean Ultra
 ► www.mt.com/BioCleanUltra

BioClean Ultra Tips in Green Packaging

Reduce Waste at the Source

Many labs today are concerned with reducing the environmental impact of plastic waste. Rainin has long been a pioneer in addressing these concerns through innovative package designs for tip-rack refilling to reduce plastic waste at the source.



Green-Pak™ SpaceSaver™

Stacked Refills – 80 Percent Less Waste



SpaceSaver uses only about 11 percent of the bench space used by 10 racks. Protective outer shell components are made of recycled PETE. The SpaceSaver design allows individual refills to be discharged without exposing remaining refills. Available standard or sterilized.

Green-Pak

Individual Refills – 70 Percent Less Waste



Green-Pak refills are completely sealed, eliminating contamination. The filter and sterilized tips are irradiated and certified free of DNase, RNase, DNA, endotoxin, ATP, PCR inhibitors, protein and protease. These refills also offer fast, trouble-free loading. Available standard, sterilized or sterilized with aerosol-resistant filter tips.

LTS Tips for Rainin LTS Pipettes

Green-Pak SpaceSaver: Stacked Tip-Rack Refills	Max. Capacity	Material No.
960 LTS tips in 10 refills	20 µL	30389291
960 LTS tips in 10 refills, sterilized	20 µL	30389297
960 LTS tips in 10 refills	200 µL	30389299
960 LTS tips in 10 refills, sterilized	200 µL	30389301
768 LTS tips in 8 refills	300 µL	30389303
768 LTS tips in 8 refills, sterilized	300 µL	30389304
768 LTS tips in 8 refills	1,000 µL	30389292
768 LTS tips in 8 refills, sterilized	1,000 µL	30389294



SpaceSaver tip refills – stacked

Low-Retention Tips in Green-Pak SpaceSaver Stacked Refills		
960 low-ret. LTS tips in 10 refills	20 µL	30389296
960 low-ret. LTS tips in 10 refills, sterilized	20 µL	30389298
960 low-ret. LTS tips in 10 refills	200 µL	30389300
960 low-ret. LTS tips in 10 refills, sterilized	200 µL	30389302
768 low-ret. LTS tips in 8 refills	1,000 µL	30389293
768 low-ret. LTS tips in 8 refills, sterilized	1,000 µL	30389295

Green-Pak: Individual Tip-Rack Refills		
960 LTS tips in 10 refills	20 µL	30389270
960 LTS tips in 10 refills, sterilized	20 µL	30389275
960 LTS tips in 10 refills, sterilized, filter	20 µL	30389274
960 LTS tips in 10 refills	200 µL	30389277
960 LTS tips in 10 refills, sterilized	200 µL	30389278
960 LTS tips in 10 refills, sterilized, filter	200 µL	30389276
768 LTS tips in 8 refills	1,000 µL	30389271
768 LTS tips in 8 refills, sterilized	1,000 µL	30389273
768 LTS tips in 8 refills, sterilized, filter	1,000 µL	30389272
Empty racks for 10 µL tips, red, pack of 10		30389354
Empty racks for 250 µL tips, green, pack of 10		30389353
Empty racks for 1,000 µL tips, blue, pack of 8		30389351



Green-Pak tip refills – individual

Hinged-Cover Tip Racks		
960 LTS tips in 10 racks	20 µL	30389200
960 LTS tips in 10 racks, sterilized	20 µL	30389228
960 LTS tips in 10 racks, sterilized, filter	20 µL	30389225
960 LTS tips in 10 racks, sterilized, filter	200 µL	30389239
960 LTS tips in 10 racks	200 µL	30389243
960 LTS tips in 10 racks, sterilized	200 µL	30389245
960 LTS wide-orifice tips in 10 racks	200 µL	30389247
960 LTS wide-orifice tips in 10 racks, sterilized	200 µL	30389249
768 LTS tips in 8 racks	300 µL	30389253
768 LTS tips in 8 racks, sterilized	300 µL	30389255
768 LTS tips in 8 racks, sterilized, filter	300 µL	30389254
768 LTS tips in 8 racks	1,000 µL	30389211
768 LTS tips in 8 racks, sterilized	1,000 µL	30389215
768 LTS tips in 8 racks, sterilized, filter	1,000 µL	30389212
768 LTS wide-orifice tips in 8 racks	1,000 µL	30389217
768 LTS wide-orifice tips in 8 racks, sterilized	1,000 µL	30389220
768 LTS tips in 8 racks	1,200 µL	30389230
768 LTS tips in 8 racks, sterilized	1,200 µL	30389234
768 LTS tips in 8 racks, sterilized, filter	1,200 µL	30389231
480 LTS tips in 8 racks	2,000 µL	30389236
480 LTS tips in 8 racks, sterilized	2,000 µL	30389238
480 LTS tips in 8 racks, sterilized, filter	2,000 µL	30389237
192 LTS tips in 8 racks	5,000 µL	30389256
192 LTS tips in 8 racks, sterilized	5,000 µL	30389257



Hinged-cover tip racks

Low-Retention Tips in Hinged-Cover Racks	Max. Capacity	Material No.
960 low-ret. LTS tips in 10 racks	20 µL	30389227
960 low-ret. LTS tips in 10 racks, sterilized	20 µL	30389229
960 low-ret. LTS tips in 10 racks, sterilized, filter	20 µL	30389226
960 low-ret. LTS tips in 10 racks, sterilized, filter	200 µL	30389240
960 low-ret. LTS tips in 10 racks	200 µL	30389244
960 low-ret. LTS tips in 10 racks, sterilized	200 µL	30389246
768 low-ret. LTS tips in 8 racks	1,000 µL	30389214
768 low-ret. LTS tips in 8 racks, sterilized	1,000 µL	30389216
768 low-ret. LTS tips in 8 racks, sterilized, filter	1,000 µL	30389213
768 low-ret. LTS tips in 8 racks	1,200 µL	30389233
768 low-ret. LTS tips in 8 racks, sterilized	1,200 µL	30389235
768 low-ret. LTS tips in 8 racks, sterilized, filter	1,200 µL	30389232

Complete ordering information for Rainin LTS and universal conical tips is available online at www.mt.com/Rainin

TerraRack

The Most Eco-Friendly Rack Around

TerraRack™ is a revolutionary concept in tip racks. These completely recyclable stands are as sturdy as conventional racks, yet they are made with less than half the plastic. In fact, the hinged TerraRack shell is made from PETE, which is easily recycled.

For convenience and complete cleanliness, TerraRacks with BioClean Ultra tips come sterilized, eliminating the need to autoclave.



TerraRack family

Less Waste



With 50 percent less plastic than conventional racks, TerraRacks are also extremely compressible so used racks occupy significantly less space in a recycling or storage container.

100 Percent Recyclable



In addition to being completely recyclable, much of each TerraRack is composed of PETE, which is easily recycled and aggressively recovered from the plastic waste stream.

Sterile



TerraRacks are sterilized. Unlike refill systems where there is a potential for placing clean tips into a contaminated rack, you can be certain that you're working with a fresh, clean rack every time.

► www.mt.com/TerraRack



TerraRack

TerraRack LTS Tips for Rainin LTS Pipettes

TerraRack LTS Tips in PETE TerraRack with Hinged Lid	Max. Capacity	Material No.
960 LTS tips in 10 racks, sterilized	20 µL	17014960
960 LTS tips in 10 racks, sterilized, filter	20 µL	17014961
960 LTS tips in 10 racks, sterilized	200 µL	17014962
960 LTS tips in 10 racks, sterilized, filter	200 µL	17014963
768 LTS tips in 8 rack, sterilized	300 µL	17014964
768 LTS tips in 8 rack, sterilized, filter	300 µL	17014965
768 LTS tips in 8 rack, sterilized	1,000 µL	17014966
768 LTS tips in 8 rack, sterilized, filter	1,000 µL	17014967
768 LTS tips in 8 rack, sterilized	1,200 µL	17014968
768 LTS tips in 8 rack, sterilized, filter	1,200 µL	17014969



TerraRack – LTS

TerraRack Universal Tips for Rainin, Pipetman® and Other Pipette Brands

TerraRack Universal-Fit Tips in PETE TerraRack with Hinged Lid	Max. Capacity	Material No.
960 tips in 10 racks, sterilized	10 µL	17014970
960 tips in 10 racks, sterilized, filter	10 µL	17014971
960 tips in 10 racks, sterilized, ShaftGard	10 µL	17014972
960 tips in 10 racks, sterilized, ShaftGard, filter	10 µL	17014973
960 tips in 10 racks, sterilized, filter	20 µL	17014974
960 tips in 10 racks, sterilized, filter	100 µL	17014975
960 tips in 10 racks, sterilized, filter	200 µL	17014976
960 tips in 10 racks, sterilized	250 µL	17014977
768 tips in 8 rack, sterilized	300 µL	17014978
768 tips in 8 rack, sterilized, filter	300 µL	17014979
768 tips in 8 rack, sterilized	1,000 µL	17014980
768 tips in 8 rack, sterilized, filter	1,000 µL	17014981



TerraRack – universal

Rainin QuickFlow

Convenient, Trouble-Free Aspiration

The Rainin QuickFlow™ benchtop aspirator combines exceptional ergonomics with a broad range of features and conveniences. Labs with central vacuum systems can purchase the handle and adapter kit separately.



Easy Assembly

With self-sealing quick connectors, QuickFlow is designed for easy and intuitive disassembly and reassembly.

Liquid Level Sensor

The QuickFlow's non-contact level sensor offers exceptional performance and reliability.

Speed Control

Continuous Flow

QuickFlow's continuous mode isn't just more efficient – it's a hand saver. QuickFlow allows users to select continuous flow and the amount of suction.

QuickFlow	Material No.
QuickFlow aspirator – 4L	30519826
QuickFlow Lite aspirator – 4L	30551511
QuickFlow Handle Kit – standard	30519824

Complete ordering information for the QuickFlow product family is available online at www.mt.com/Rainin

The Rainin NanoRep Electronic Repeater Pipette

NEW

**Rainin NanoRep™ allows automatic dispensing of up to 1,000 aliquots
– with no contact necessary from vessel to vessel.**

100 nanoliter aliquots

Conserve samples and reagents.

No Touch Off™ dispense

Proprietary technology completely dispenses the entire aliquot without touching off.

Simple operation

High resolution color screen and joystick control make NanoRep simple and intuitive.

Fewer tips, larger volume range

Three tips covering 100 nanoliters to 50 milliliters – each capable of dispensing 1,000 aliquots – simplifies inventory, saves space and reduces plastic waste.

Positive displacement syringe tips

Safely and accurately handle viscous, volatile and other challenging liquids.



NanoRep	Material No.
NanoRep repeater pipette (includes: charging cable, Hang-Ups, and 10 mL syringe tip)	30568171

NanoRep Syringe Tips	Max. Capacity	Material No.
1 pack of 100 tips	0.1 mL	30575705
1 pack of 25 tips, sterile	0.1 mL	30575777
1 pack of 100 tips	10 mL	30575707
1 pack of 25 tips, sterile	10 mL	30575779
1 pack of 25 tips	50 mL	30575789
1 pack of 25 tips, sterile	50 mL	30575781

Accessories	Material No.
Charging cable	30348182
Hang-Ups (for pipettes with fingerhook)	30584027

Trust the Service Experts

Minimize Risk and Maximize Reproducibility

The METTLER TOLEDO difference: controlled laboratory environments, manufacturer-authorized spare parts, certified pipette technicians and specialized calibration software.

METTLER TOLEDO operates the world’s most extensive network of ISO/IEC 17025 accredited pipette calibration laboratories.

Global network

With a global network of ISO/IEC 17025 accredited laboratories and one of the largest factory-trained support and service forces, we can provide you with application support and technical assistance anytime, anywhere.

Comprehensive offering

- Calibration
- Preventive maintenance
- Service repair
- Calibration certificates

Uptime



Our global network of factory-trained technicians and ISO/IEC 17025 certified service labs enables us to respond quickly to all repair and calibration needs.

Performance



Environmentally controlled labs and original manufacturer spare parts ensure that instruments are always returned to the highest accuracy and precision.

Compliance



With specialized calibration software and ISO/IEC 17025 accredited labs, METTLER TOLEDO is a partner you can trust to help maintain ISO 8655 and FDA 21 CFR Part 11 standards.

Request Rainin service today

► www.mt.com/RaininService



Expertise



Our certified pipette service technicians perform more than 10 million readings each year, giving us extraordinary data analytics for understanding how all brands of pipettes perform over time.

Good Pipetting Practice

Better Results through Better Understanding

The performance of any instrument is improved in the hands of a skilled operator. Through GPP™, labs can reduce errors and improve the reliability and repeatability of their results. The key: better understanding the factors that affect experiments and learning application-specific techniques.

You can improve data quality with Good Pipetting Practice™ – METTLER TOLEDO's comprehensive, systematic approach to maximizing pipetting accuracy.

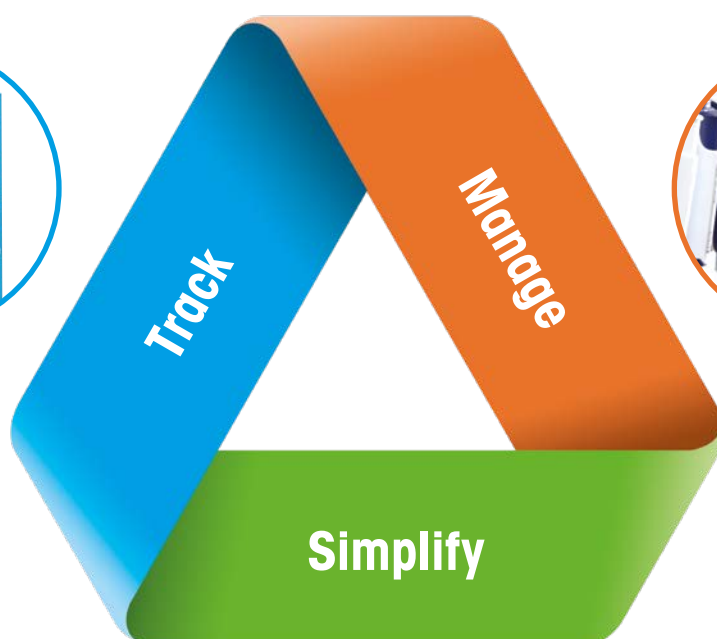


See how much GPP has to offer
▶ www.mt.com/GPP

Pipette Asset Management: Flexible, Integrated and Easy to Implement

- Assign locations, users and groups
- Search, filter, custom reports and schedules
- Know everything about your pipettes

- One location for all key calibration data
- Schedule calibrations and retirements
- Calibration certificates electronically transferred from service center to PipetteX



- Eliminate time-consuming reading of serial numbers, barcodes or stickers
- Automated alerts, notifications and reminders to help plan and schedule service or other activities
- 21 CFR Part 11 compliant software includes optional pipette verifications with SmartCheck™

PipetteX Software – Initial Setup ¹	Material No.
PipetteX – start	30475911
PipetteX – site	30475913
PipetteX – unlimited	30475915
PipetteX – audit trail	30587187

Validation Handbooks	Material No.
PipetteX Validation Handbook 1	30583206
PipetteX Validation Handbook 2 – Basic	30583207
PipetteX Validation Handbook 2 – Extended	30590989

¹ Not a renewal

Rainin SmartCheck

Fast Pipette Accuracy Verification

Reduce experimental errors, between-calibration compliance failures and improve pipetting technique.

Trust your pipettes! SmartCheck™ is a quick and easy way to verify that your pipettes are working properly. It takes very little space on the benchtop so you can use it every day.

Avoid expensive rework

Reduce out-of-tolerance challenges such as having to re-do expensive experiments or incur costly downstream process waste.

60 seconds or less!

Pipette verification in less than a minute: SmartCheck provides a clear pass/fail indication following a simple process with just four gravimetric measurements.

Verify any brand of pipette

Verify the performance of any brand of pipette dispensing volumes between 10–1,000 µL. You can verify individual channels of multichannel pipettes too.

Ideal for regulated environments

SmartCheck is the only verification tool that can operate within a 21 CFR Part 11 compliant process (requires PipetteX software).

SmartCheck	Material No.
SmartCheck	30564095
SmartCheck Function test kit	30448961
EasyScan™ RFID LAN set	30448967

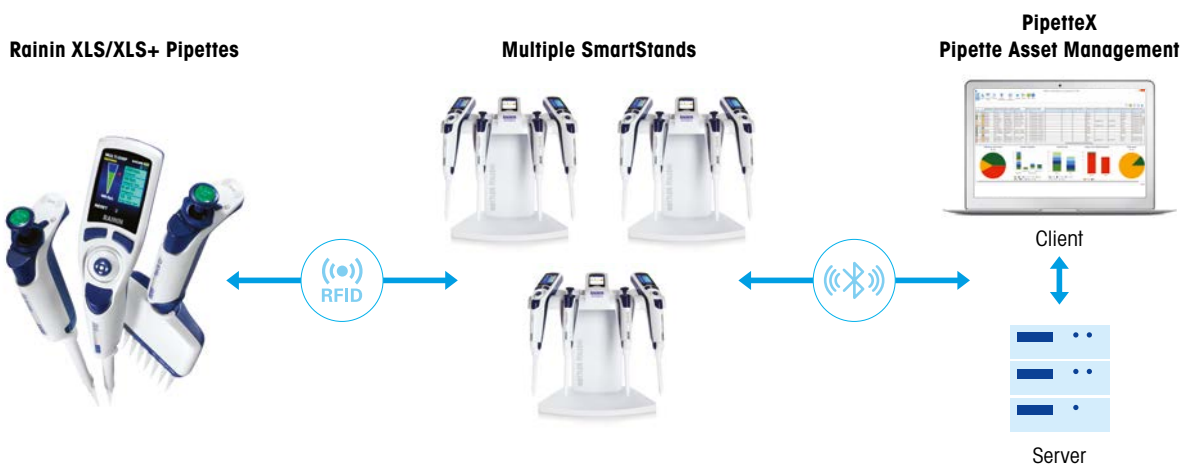


With PipetteX, You're in Control

Bringing Order to Your Pipette Collection

PipetteX™ asset management software, together with SmartStand, SmartCheck and Rainin calibration services, is a unique pipette tracking and calibration management system. Using the RFID chip embedded in every Rainin XLS/XLS+ pipette, PipetteX automatically tracks and manages calibration data, pipette usage and location.

- Automatic transfer of calibration documentation from service center to software
- Controls all elements of calibration tracking and movement
- 21 CFR Part 11 compliant management system
- Integrated in-line pipette validations



A simple, unified system for tracking and managing pipettes (all brands)

Place any Rainin XLS-brand pipette on a SmartStand to instantly see the pipette's calibration status and service details right at the bench. PipetteX connects to SmartStand via Bluetooth or USB to automatically transfer serial numbers, service dates and calibration data to the PipetteX database.

PipetteX maintains a complete history of your entire pipette inventory including calibration certificates and verification reports. This makes it easy to track the status, location, calibration and service schedule for any pipette.

That's pipette management... simplified!

UV/Vis

Spectrophotometry

Time and Space Matter





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Scan this code for more information.

▶ www.mt.com/UVVIS

UV/Vis Spectrophotometry Instruments

Tailored to Your Applications

Our range of UV/Vis spectrophotometry instruments means you enjoy ease, accuracy and flexibility in all your analytical workflows. From standalone UV/Vis analyses to the creation of robust multiparameter systems, METTLER TOLEDO instruments and accessories have you covered.

Leverage pre-installed methods that enable reliable life science research, water testing, color measurement, and more. Adding LabX™ software can ensure data integrity that complies with standards such as 21 CFR Part 11, while EasyDirect™ UV/VIS software enables simplified results evaluation.

Versatile and Easy

The scanning-based Easy-Plus UV/VIS spectrophotometer integrates conventional spectrophotometry, color measurement and water testing into one device. With hundreds of built-in and validated methods, it significantly shortens time to result. A very small footprint and a guided user interface make a difference in your routine analysis.



EasyPlus Line



Fast and Reliable

FastTrack™ UV/Vis technology integrates robust, state-of-the-art components into a unique spectroscopic system design. The result is a powerful, compact stand-alone device, which can be easily operated thanks to the One Click™ user interface. This enables fast reliable measurements with high traceable accuracy on a compact footprint.



Excellence Line

Flexible Automation

Excellence line UV/Vis automation systems bring more speed, consistency and compliance to spectrophotometric workflows. Easily increase your throughput from 18 up to 303 samples.



Automation

Smart Accesories

Plug-and-play Excellence line accessories for automated sample changing, performance verification, sample recovery and cell cleaning support your individual UV/Vis workflow. LabX UV/VIS software supports multiparameter analysis and automated calculations to enhance lab productivity.



Accessories

Performance Ensured

Support and service for your spectrophotometer through its entire lifecycle, from installation to preventive maintenance and calibration to equipment repair. Our globally accepted IQ/OQ service provides complete documentation that helps to ensure compliance with all regulatory requirements.



Service

3-in-1 UV/Vis Spectrophotometer

Boost Efficiency and Versatility

Conventional spectrophotometry, color measurements and water analyses can be performed using one instrument. Two easy-to-use models have been designed to greatly facilitate routine spectroscopic workflows in the chemical, food and beverage, testing lab, and academic teaching segments.

Easy UV



Based on the scanning technology, Easy UV is equipped with a xenon flash lamp, which provides a long lifetime with few maintenance requirements.

- Covers wavelengths in both UV and visible light range
- Supports multiple optical path lengths from 0.1 up to 50 millimeters
- 30 built-in color scales covering UV and visible applications
- The SQKitReader™ accessory enables over 150 Spectroquant®¹ water test kit methods
- Removable and washable drip tray

Easy VIS



Easy VIS provides an economic option for the spectrophotometric analysis using visible light, and an easy-to-replace lamp module for self-maintenance.

- Covers wavelengths in visible light range
- Supports multiple optical path lengths from 0.1 up to 50 millimeters
- 25 built-in color scales for colorful samples
- The SQKitReader accessory enables over 150 Spectroquant® water test kit methods
- Removable and washable drip tray

¹ Spectroquant® is a trademark of Merck KGaA, Darmstadt, Germany



Avoid Errors with XPathHolder™

Easy and secure operation with the unique carousel holder that accommodates multiple optical path lengths by simple rotation. The PathDetect™ function automatically detects the chosen path length.



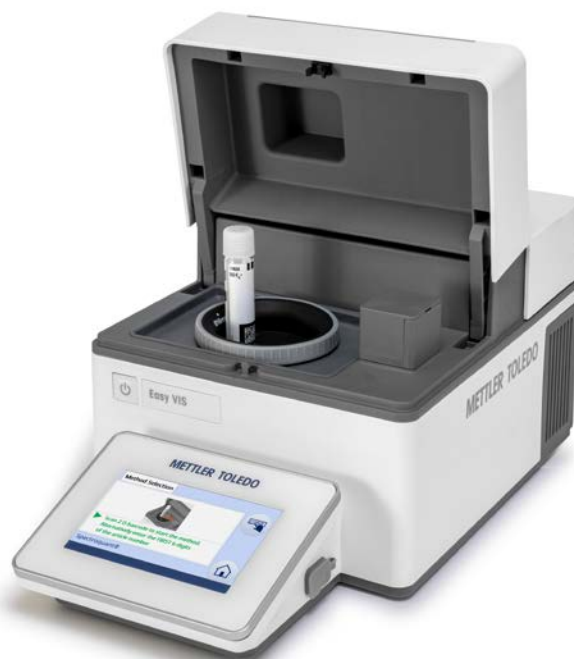
SmartLid™ Operation

Closing the lid automatically starts the measurement. This simplifies your workflows and saves clicks on the user interface to reduce effort and improve ergonomics.



Lean Method Management

The ScanStart™ function will automatically start a method via barcode scan, when scanning is predefined in method protocols. Such automation helps to create smoother workflows and significantly reduce process errors.



Watch the EasyPlus UV/VIS product video
[▶ www.mt.com/EasyPlus-UVVIS](http://www.mt.com/EasyPlus-UVVIS)

		Easy UV	Easy VIS
Light Source	Xenon flash lamp	•	–
	Tungsten lamp	–	•
Detector	Dual silicon photodiodes	•	•
Optical System	Dual beam with reference detector	•	•
Optical Performance	Wavelength range [nm]	190–1,000	330–1,000
	Wavelength accuracy (holmium oxide) [nm]	±1.5	±1.5
	Photometric accuracy at 1 A (neutral density filter) [A]	±0.005	±0.005
	Photometric repeatability at 1 A (neutral density filter) [A]	≤0.001	≤0.001
	Stray light at 340 nm (sodium nitrite) [%T]	≤0.1	≤0.1
	Spectral bandwidth (SBW) [nm]	3	4
Scanning Speed	Max. 2,000 nm/min	•	–
	Max. 2,800 nm/min	–	•
Favorites	Number of user-defined methods in favorites list	10	10
Path Lengths	Cuvette dimensions supported by the XPathHolders: 10, 16, 20, 30, 40, 50 mm and 1 inch		
Applications and Methods	Max. user-defined methods	80	80
	Built-in color scales (e.g. CIELAB, APHA, Gardner, etc.)	30	25
	Spectroquant® water testing methods ¹	•	•
PC Software	EasyDirect UV/VIS	•	•
Languages	Bahasa Indonesian, Chinese, English, French, German, Italian, Japanese, Korean, Polish, Portuguese, Spanish, Thai, Turkish		
Connectivity	USB-A: ×3 (e.g. for keyboard, mouse, barcode reader, printer)	•	•
	USB-B: ×1 (EasyDirect PC software)	•	•
	Pogo pin: ×1 (SQKitReader for water testing methods)	•	•
Material No.		30705169	30705170

¹ The SQKitReader is required and must be purchased separately

EasyPlus Applications and Accessories

Simplify Your Daily Routines

Conventional spectrophotometry analysis, color measurements and water testing – all integrated into one instrument.

Conventional Spectrophotometry



Run a photometric measurement at multiple wavelengths or scan a sample spectrum with customizable parameter settings and the peak finding function. Guided operation makes spectrophotometric analysis simple.

Color Measurement



30 standard-compliant color scales are ready to use. These scales help shorten the time to result while eliminating data transcription and calculation errors.

Water Testing



Bring water quality testing to your lab in one convenient package with EasyPlus UV/VIS spectrophotometers and Spec-troquant® test kits. The optional SQKitReader automatically reads the 2D barcode and starts the corresponding method which simplifies method management and secures the workflow.

Product	Specifications	Material No.
Cuvette Standard O optical glass	10 mm matched pair, optical glass, 320–2,500 nm, tolerances of ± 0.05 mm, transmission >80%, PTFE lid	30675053
Cuvette Standard O optical glass	50 mm matched pair, optical glass, 320–2,500 nm, tolerances of ± 0.05 mm, transmission >80%, PTFE lid	30675054
Cuvette Standard Q quartz glass	10 mm matched pair, quartz glass, 200–2,500 nm, tolerances of ± 0.02 mm, transmission >80%, PTFE lid	30675051
Cuvette Standard Q quartz glass	50 mm matched pair, quartz glass, 200–2,500 nm, tolerances of ± 0.02 mm, transmission >80%, PTFE lid	30675052
SQKitReader	2D barcode reader for Spectroquant® water testing	30705183
XPathHolder 10 mm/16 mm	Interchangeable cell holder for 10 mm and 16 mm	30705122
XPathHolder 20 mm/30 mm	Interchangeable cell holder for 20 mm and 30 mm	30705123
XPathHolder 40 mm/50 mm /1 inch	Interchangeable cell holder for 40 mm, 50 mm and 1 inch	30705124
USB-P25 printer	USB-P25 dot matrix printer	30702998
Barcode scanner	1D handheld barcode scanner, requires USB cable (21901309)	21901297
EasyDirect UV/VIS PC software ¹	License for 1 instrument	30657871
	License for 5 instruments	30657877
USB transfer cable EasyDirect UV/VIS PC software ¹	To connect the instrument with a PC	51191926

¹ Only supported by instrument firmware version 1.1.00 or higher

EasyDirect UV/VIS Software

Your Solution for Lean Data Management

EasyDirect™ PC software¹ automatically acquires, stores and displays your spectrophotometry data to make analysis and reporting easy and efficient.

Configurable Data Retrieval



Measurement results are stored in a structured archive and displayed according to user configuration. You get a fast access to the data you need and an easy ability to compare analytical results. Additionally, your customized data structure can be transferred to other applications such as automated table calculation programs.

Backup



Results can be automatically exported to EasyDirect PC software to seamlessly integrate the measuring system into external or centralized data management systems (e.g. LIMS). Backup and restore of all methods is performed by one click.

Spectral Analysis



A seamless workflow from spectra recording to evaluation and processing is ensured by easy access to Spectragryph software integrated into EasyDirect.



Measurement data evaluation made easy: integrated Spectragryph software.

¹ Only supported by instrument firmware version 1.1.00 or higher

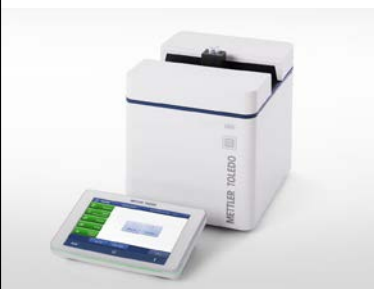
FastTrack Technology

Speed Up Your Measurements

The UV/VIS Excellence line provides fast and reliable measurements within a very compact footprint thanks to FastTrack™ technology. Intuitive One Click operation and predefined application methods speed up the spectroscopic workflow.

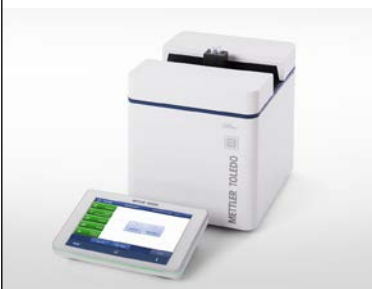
Excellence

UV5 – The Entry to Excellence



The UV5 provides you with spectrum scans within one second enabled by instant instrument readiness, predefined direct measurements and intuitive One Click touchscreen operation. It helps you optimize UV/Vis measurement workflows in quality control.

UV5Bio – The Life Science Expert

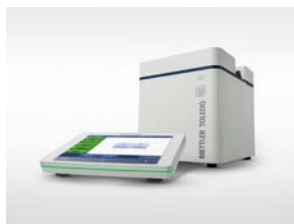


The UV5Bio is the ideal instrument for cuvette-based life-science UV/Vis applications. Preprogrammed DNA, RNA, and protein applications are available as direct measurement routines or ready-to-use METTLER TOLEDO methods for an instant start. The One Click touchscreen interface provides intuitive and efficient shortcut operation.

UV7 – The Excellence Performer



The UV7 offers superior optical performance that enables compliance with strict Pharmacopeia regulations. Advanced automation routines and pre-verified METTLER TOLEDO methods are ideal foundations for reliable measurements in regulated industries.



Fast Measurements

FastTrack UV/Vis technology comprises modern fiber optics in combination with array detection and a Xenon flash lamp for analyses within seconds. The instrument is always ready for use – no warm-up time required.



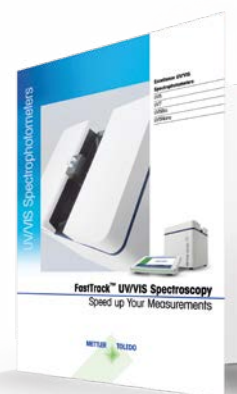
A Cleaner Lab Bench

UV/VIS Excellence spectrophotometers fit into a notepad-sized footprint. The instruments can be operated standalone and do not require PC connection, saving bench-top space.



Sustainable Performance

The absence of moving parts, a long-lasting Xenon flash lamp, and state-of-the-art optical fibers provide ruggedness and reliability. Maintenance costs are reduced and performance remains sustainable.



Download the UV/VIS Excellence brochure

► www.mt.com/UVVIS

		UV5	UV5Bio	UV7
Optical Performance	Wavelength range [nm]	190–1,100	190–1,100	190–1,100
	Wavelength resolution (toluene in hexane abs.)	>1.5	>1.5	>1.9
	Wavelength accuracy (holmium oxide) [nm]	±0.9	±0.9	±0.5
	Photometric accuracy (potassium dichromate) [A]	±0.005	±0.005	±0.005
	Stray light at 198 nm (potassium chloride) [A]	>2.0	>2.0	>2.3
One Click Spectroscopy	Shortcuts per user	24	24	24
Automation	Peristaltic pump FillPalMini	•	•	•
	Peristaltic pump SPR200	•	•	•
	CuvetteChanger	•	•	•
	Automatic performance verification CertiRef™	•	•	•
	InMotion™ Autosampler	•	•	•
Applications and Methods	Direct measurement types	3	5	4
	METTLER TOLEDO methods	–	•	•
	Method editor	•	•	•
	Kinetics	–	•	•
	Temperature control	•	•	•
	Colors: Tristimulus, CIE Lab, CIE Luv, Lab according to Hunter, Chromaticity, Yellowness Index, APHA, Pt-CO, Hazen, Gardner, Saybolt, Hess-Ives, EBC, ASBC	•	•	•
	Dissolution testing	–	–	•
	Water testing	•	•	•
PC Software	LabX UV/VIS software	•	•	•
Languages	Chinese, English, French, German, Italian, Japanese, Portuguese, Russian, Spanish			
Connectivity	USB memory stick storage (reports (PDF), data (CSV), methods)	•	•	•
	USB devices (barcode reader, compact printer, fingerprint reader)	•	•	•
	Ethernet (PC, network printer (HP PCL 3, Epson protocol), reports (PDF), data (CSV))	•	•	•
Material No.		30254725	30254728	30254726

UV5 A: 30254727 (UV5 unit with CuvetteChanger)

OneDrop UV/Vis Spectroscopy

Designed for the Life Sciences

The UV5Nano is the micro-volume spectrophotometry specialist for life science applications. FastTrack UV/Vis technology makes the instrument a powerful, compact standalone device that is easily operated thanks to the One Click user interface.

Shortcuts for direct and indirect DNA and protein purity and concentration measurements can be launched from the home screen with a tap of a finger. The automatic path length selection allows measurements over a large concentration range with only 1–3 μL of sample. Just pipette and measure!

UV5Nano – The Micro Master



Measure μL volumes of precious DNA, RNA or protein samples in wide concentration ranges on the micro-volume platform. The additional cuvette measurement option doubles the application power. LockPath™ technology ensures exact and repeatable path length adjustment. No need for sample dilution – just pipette and measure.

Life Sciences Applications



- Nucleic acid analysis: 260/280 nm ratios (with optical reference at 320 nm) for nucleic acid purity
- Protein analysis: Biuret (modified) Lowry, Bradford, bicinchoninic acid, and trinitrobenzene sulfonate protein quantification methods
- Kinetic tests such as enzyme activity
- Standard cuvette or micro-volume down to 1 μL sample size



Micro-Volume Performance

Measure a wide range of sample concentrations down to 1 µL volume using the micro-volume platform. Tips and tricks are provided to enhance measurement quality and reduce risks and costs.



Avoid Errors with LockPath

LockPath makes sure that the available path lengths at 0.1 millimeter and 1 millimeter are accurately defined. Thanks to the rugged design, path length drift is excluded to eliminate expensive recalibration.



Regulatory Compliance

The optional LabX UV/VIS PC software supports compliance with FDA 21 CFR Part 11/EU Annex 11 regulations concerning electronic data and electronic signatures. All results and metadata are stored in a single SQL database, along with a complete audit trail.



Download the micro-volume UV/Vis guide
www.mt.com/UVVIS

		UV5Nano
FastTrack Technology	Pulsed Xenon flash lamp, CCD array detector	•
LockPath Technology	Automatic path length adjustment	•
Optical Performance	Wavelength range [nm]	190–1,100
	Wavelength resolution (toluene in hexane abs.)	>1.7
	Wavelength accuracy (holmium oxide) [nm]	±0.9
	Photometric accuracy (potassium dichromate) [A]	±0.005
	Stray light at 198 nm (potassium chloride) [A]	>1.7
One Click Spectroscopy	Shortcuts per user	24
Automation	Peristaltic pump FillPalMini	•
	Peristaltic pump SPR200	•
	CuvetteChanger	–
	InMotion sample changer	•
Applications and Methods	Direct measurement types	5
	METTLER TOLEDO methods	•
	Method editor	•
	Bio-direct measurement applications	•
	Kinetics	•
	Micro-volume direct measurement applications	•
	Temperature control	–
	Colors: Tristimulus, CIE Lab, CIE Luv, Lab according to Hunter, Chromaticity, Yellowness Index, APHA, Pt-CO, Hazen, Gardner, Saybolt, Hess-Ives, EBC, ASBC	•
PC Software	LabX UV/VIS software	•
Languages	Chinese, English, French, German, Italian, Japanese, Portuguese, Russian, Spanish	
Connectivity	USB memory stick storage (reports (PDF), data (CSV), methods)	•
	USB devices (barcode reader, compact printer, fingerprint reader)	•
	Ethernet (PC, network printer (HP PCL 3, Epson protocol), reports (PDF), data (CSV))	•
Material No.		30254729

Accessories and Consumables

The UV/VIS Excellence Line

Optimize the efficiency and security of your spectroscopic system with easily installable plug-and-play accessories that expand workflow capability within the instrument's compact footprint.

CuveT Thermostat for Exacting UV/Vis Analyses



Life science UV/Vis applications can require reproducible and accurate temperature conditions. CuveT controls the temperature of samples in a 10 millimeter cuvette within a temperature range of 4 °C to 95 °C.

Automated Performance Verification



The fully automatic CertiRef™ and LinSet™ modules perform all tests required to comply with both Ph. Eur. and USP regulations including linearity test. Certified reference materials traceable to NIST are used and a report documents all results.

UV/Vis Cuvettes



Whether you need high accuracy or the best value, the comprehensive range of the METTLER TOLEDO cuvette portfolio meets your requirements.



Product	Specifications	Material No.
CuveT	Thermostating unit	30361677
CertiRef EUP	Performance verification unit containing certified reference materials sealed in mini cuvettes to automatically calibrate the instrument according to current Ph. Eur. regulations (for UV5, UV7, UV5Bio)	30254732
CertiRef USP	Performance verification unit containing certified reference materials sealed in mini cuvettes to automatically calibrate the instrument according to current USP regulations (for UV5, UV7, UV5Bio)	30254733
LinSet PDC	Set of certified reference materials (potassium dichromate and neutral density filters) and respective blanks sealed in mini cuvettes to automatically calibrate the instrument according to current Ph. Eur. and USP regulations	30564229
LinSet Niacin	Set of certified reference materials (nicotinic acid and neutral density filters) and respective blanks sealed in mini cuvettes to automatically calibrate the instrument according to current Ph. Eur. and USP regulations	30564230
Cuvette Excellence O optical glass 10 mm	Single, optical glass, 320–2,500 nm, tolerances of ± 0.01 mm, transmission >80%, PTFE lid	30258736
Cuvette Excellence O optical glass 50 mm	Single, optical glass, 320–2,500 nm, tolerances of ± 0.01 mm, transmission >80%, PTFE lid	30258737
Cuvette Excellence Q quartz glass 10 mm	Single, SUPRASIL quartz glass, 200–2,500 nm, tolerances of ± 0.01 mm, transmission >82%, PTFE lid	30258738
Cuvette Excellence Q quartz glass 50 mm	Single, SUPRASIL quartz glass, 200–2,500 nm, tolerances of ± 0.01 mm, transmission >82%, PTFE lid	30258739
1 cm precision cuvette holder	Enables mounting of 1 cm standard cuvettes, included in standard delivery of UV5, UV5Bio, UV7	30236314
Base holder plate	Plate required to mount long path length cell holder and solid sample holder	30236315
Long path length cell holder	Enables mounting of cuvettes with path lengths ranging from 10–50 mm	30254738
Solid sample holder	Enables measuring of solid sample films	30258692
Barcode scanner	1D handheld barcode scanner, requires USB cable (21901309)	21901297
LogStraight™	Fingerprint reader, USB connection	51192107

Modular Automation Units

Adapt to Your Throughput Demand

Expand your spectroscopic system with modular automation units. Reduce operator time and improve user safety while enhancing productivity and results reliability by automating your workflows.

FillPalMini



Sample loading is easily automated with the FillPalMini, which pumps the sample safely and quickly into the flow cell. It can also be used for sample recovery and cell cleaning.

CuvetteChanger



This cell changer offers efficient automatic measurement of series of up to 8 cuvettes for both standard measurements with blank subtraction or complex kinetic applications thermostatable from 10 °C to 80 °C.

InMotion™ Autosampler



InMotion Autosampler for UV/VIS Excellence can automate many analysis steps for up to 303 samples, executing them repeatedly without fail.

Product	Specifications	Material No.
CuvetteChanger	8×10 mm cuvette positions, thermostatable	30236313
Flow Cell Excellence Q 10 mm	Quartz glass, 170–2,700 nm, tolerances of ±0.01 mm, M6 connectors 440 µL vol	30258741
Peristaltic pump FillPalMini	Four rolls peristaltic pump, includes tube set to connect to flow cell, can be operated in two pump directions at varying pump speeds	30254735
Fiber probe adapter	Connects the spectrophotometer to optical fiber probes with SMA 905 connection	30526548
Compact stirrer	Overhead stirrer, homogenizes the sample	51109150

UV/VIS Sample Kits for InMotion Autosamplers

With Flow Cell

Easy flow cell-based automation. Connected via a flow cell within the spectrophotometer, the sample is transferred, analyzed, and disposed of. Then, the cell is cleaned and ready for the next measurement, all without manual intervention.

With Fiber Probe Adapter

For the ultimate productivity gain, connect a fiber optics immersion probe to the InMotion Autosampler. Samples are measured within the beakers in the InMotion, decreasing time-to-result to a minimum. With this setup, operator time is reduced by 70 percent compared to manual methods when a workflow involving the analysis of 10 samples is considered.

A Fit for Any Lab

Choose between the Flex, Pro and Max UV/VIS InMotion Autosampler bases and combine it with the sample rack that fits your throughput and sample size needs. Completed with a UV/VIS sample kit, your system becomes the perfect fit for your laboratory.

UV/VIS Base Kits

Base Type	Specifications	Material No.
UV/VIS Flex	Base for Autosampler InMotion Flex UV/VIS ¹	30750261
UV/VIS Pro	Base for Autosampler InMotion Pro UV/VIS ¹	30750262
UV/VIS Max	Base for Autosampler InMotion Max UV/VIS ¹	30750263

¹ Autosampler base only, to be completed with InMotion sample rack and UV/VIS sample kit

InMotion Sample Racks

Base Type	No. of Samples	Beaker Size (mL)	Material No.
UV/VIS Flex	50	25 ²	30094142
	27	80	30094143
	18	100	30094144
UV/VIS Pro	182	25 ²	30094147
	69	80	30094148
	34	100	30094149
UV/VIS Max	303	25 ²	30094151
	113	80	30094152
	55	100	30094153

² No PowerShower™ support for 25 mL beaker size

UV/VIS Sample Kits

Description	Beaker Size (mL)	Material No.
Probe kit ³	25	30750264
	80	30750265
	100	30750266
Flow cell kit ⁴	25	30750267
	80	30750268
	100	30750269

³ Immersion probe not included

⁴ Flow cell not included

A complete UV/VIS InMotion system consists of three article numbers
UV/VIS base kit + InMotion sample rack + UV/VIS sample kit



InMotion Autosampler with Flow Cell Excellence



Download the UV/VIS InMotion data sheet
www.mt.com/UV-VIS-Automation

LabX PC Software

Manage Samples and Data Effectively

Simplify the way you work with LabX PC software. Schedule workflows, avoid transcription errors and ensure data integrity.

Increased Productivity



Boost lab productivity with features such as task scheduling to execute work plans, sample series handling with automation accessories, and barcode reader for sample identification. LabX gives you the opportunity to run complex multiparameter setups, hassle-free.

Regulatory Compliance



SOP guidance on the instrument terminal and PC supports regulatory compliance. Built-in security features such as electronic signatures and user management options ensure 21 CFR Part 11/ EU Annex 11 compliance so your lab can be audit-ready at any time. A secure database, full result traceability and data integrity is ensured.

Reliable Results Management



The LabX results database provides immediate access to all data at any time. Automatic plausibility checks, report generation and statistical evaluations of your results provide an unparalleled overview of all your processes. Developing methods and correcting input errors become easy tasks with the help of the reanalysis tool.

Tailor your UV/VIS LabX system modularity to meet your needs

LabX UV/VIS offers a modular licensing approach to address current and future workflow design.

<p>Starter Pack LabX Express Connect up to 3 instruments</p> <ul style="list-style-type: none"> LabX Express Instrument License 	<p>Starter Pack LabX Server Connect up to 60 instruments</p> <ul style="list-style-type: none"> LabX Server Instrument License User Management Auto Import/Export 	<p>LabX UV/VIS Express</p> <p>Includes one UV/Vis instrument license to connect one UV7, UV5, UV5Bio or UV5Nano instrument. Can be expanded with any optional packages (e.g. regulation) and 2 additional instrument licenses (UV/VIS, titration, density meter, refractometer, melting point instrument, pH meter, automatic balance/balance).</p>
<p>Option Licenses</p> <ul style="list-style-type: none"> User Management Auto Import/Export Regulation¹ Product Database Statistical Evaluation Report Designer System Integration STAReX Integration 		<p>LabX UV/VIS Server</p> <p>Includes one UV/Vis instrument license to connect one UV7, UV5, UV5Bio or UV5Nano instrument. Can be expanded with any optional packages (e.g. regulation) and 59 additional instrument licenses (UV/VIS, titration, density meter, refractometer, melting point instrument, pH meter, automatic balance/balance).</p>

¹ Includes User Management

Compliance and Support

Right from the Start

Our professional services ensure your UV/Vis spectrophotometer and accessories are installed and operating correctly, and that your investment continues to provide accurate and reliable measurements. Detailed yet easy-to-read documentation provides the required evidence for your regulatory audits.

Installation and Qualification



EQPac¹ supports the highest level of regulatory compliance, providing IQ/OQ with PQ and maintenance recommendations. It also includes initial calibration and basic training. The comprehensive, fully compliant documentation supports all your regulatory needs.

StarterPac provides professional installation and includes a performance check and basic training. Summary documentation provides an installation record that is perfect for internal quality records – and your peace of mind.

Calibration and Certification



Regular calibration by a manufacturer-trained service technician ensures that your UV/Vis spectrophotometer performs accurately and within manufacturer specifications. A professional calibration certificate provides all the evidence you need for a trouble-free audit.

Extended Care



Extended Care provides assurance for the first 24 months after installation. With Extended Care you also receive two preventive maintenance visits. Regular and professionally performed maintenance prevents unexpected breakdown and ensures operational performance and reliability. Detailed checklists itemize the work carried out and support you during quality audits.

GVUP™¹ – Good UV/Vis Practice™ improves measurement quality by minimizing risks through a 5-step lifecycle program. It provides professional evaluation and selection tools, comprehensive installation and qualification services and tailored training and maintenance programs to ensure correct operation.

¹ Only available for UV/VIS Excellence line

For more information about our service offerings, see pages 20–23.



► www.mt.com/GVUP

Titration

Full Product Range for a World of Applications





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Scan this code for more information.

► www.mt.com/Titration

Titration Systems Overview

Select the Right One

Determine chemical concentrations with the highest accuracy and throughput.

Titration is a widely used analytical laboratory technique with an extensive range of applications. METTLER TOLEDO offers a corresponding variety of titrators and accessories to meet your needs. We also assist with a deep knowledge of hundreds of titration applications to ensure accurate and repeatable results with high levels of productivity.



Excellence Titrator T9 with KF Coulometric kit

Titration Excellence

The modular Titration Excellence line provides efficient and secure titration analyses in a large variety of industry segments.



Titration Excellence Line

Automation Solutions

Our wide range of sample changers and accessories allow for complete automation of sample preparation, titration, cleaning and more.



Automation

Compact Titrators

The easy operation of the One Click™ Compact line, including potentiometric and volumetric titrators, as well as coulometric Karl Fischer titrators, ensures accurate results in a small, space-saving footprint.



Compact Titrator Line

LabX Software

LabX™ Titration software integrates all METTLER TOLEDO instruments in your lab, allowing you to keep complete control of your analytical systems and results.



LabX Titration Software

Entry-Level Titrators

Upgrading from basic manual titration to EasyPlus™ automated titration brings immediate gains in accuracy, speed and reproducibility.



EasyPlus Titrators

Titration Excellence

Powerful Applications in One Click

The Titration Excellence T5, T7 and T9 instrument models combine powerful analysis with intuitive and easy operation. The unique One Click™ user interface allows storage of predefined test methods, which can later be started with a single touch. Titration Excellence instruments run over 700 general titration applications including volumetric and coulometric Karl Fischer analyses.

Efficient



Intuitive user guidance and a color touchscreen make operation simple. Operators can watch titration curves and follow analyses in real time. Results are calculated automatically and can be downloaded or transferred right away.

Secure



Both the titrant and the sensor are automatically detected upon connection and all relevant data is saved on the burette or sensor chip. This data is directly transferred to the titrator where it can be saved and monitored. Safe and secure titration does not get any simpler.

Modular



The expandable platform of the Titration Excellence line guarantees that you are optimally prepared for future challenges. Your investment is protected by the possibility for a tailored hardware or software upgrade at any time.



One Click shortcuts on the home screen

The unique One Click user interface allows up to 24 user-defined shortcuts on the instrument's home screen. Operators can start any analysis or other automated task with a single touch. Sophisticated plug-and-play functionality instantly recognizes sensors, burettes, sample changers, balances and other accessories upon connection.



InMotion Autosampler with Excellence Titrator T5

In high-throughput laboratories, automation becomes a near necessity. Excellence Titrators connect with one or more InMotion™ Autosamplers to accommodate the widest range of application workflows while ensuring accurate, fast throughput. Automated systems also handle complex cleaning tasks and other time-consuming manual operations.

Get more information
 ► www.mt.com/Titration-Excellence

Titration Excellence

Convenient, Intelligent, Versatile

Convenient and Versatile



The T5 titrator is a ready-to-go system capable of general potentiometric titration, as well as volumetric and coulometric Karl Fischer titration, for users who need a simple, rugged and easily understandable titrator for fast routine analyses. The T5 offers top-of-the-line features such as SmartSample™, which offers error-free transfer of your sample information from the balance to the titrator.

Flexible and Expandable



The T7 is a titrator for any application, capable of multitasking, flexible method-editing, upgradeability (additional pH-sensor or conductivity board for T9 functionality) and method loops for the integration of various methods into one or more sample series sequences. It is a flexible and expandable system that adapts easily to current and future needs.

Intelligent and Powerful



The high-end T9 titrator runs two titrations in parallel with conditional method functions using “if ... then” logic and sample series sequences that integrate various methods into one. It provides the highest flexibility in method development to solve complex analyses and automation tasks.

Feature Comparison Table – Titration Excellence Line

		T5	T7	T9
One Click Titration	User specific home screen with shortcuts	•	•	•
	Shortcuts per user	24	24	24
	KF solvent control	•	•	•
Hot Plug-and-Play	Plug-and-play sensor recognition	•	•	•
	Burette recognition with titrant and titer	•	•	•
	Burette drive	•	•	•
	Solvent Manager	•	•	•
	USB printer	•	•	•
	USB memory stick	•	•	•
	USB barcode reader	•	•	•
Security	LevelSens™	•	•	•
	LogStraight™ fingerprint reader	•	•	•
Automation	InMotion Autosampler	•	•	•
	DispenSix liquid handler	–	1	2
	Rondolino automated titration stand	•	•	•
	InMotion KF Oven Autosampler	–	•	•
Burette Drives	Max. number to dose and titrate	1 internal +1 external	1 internal +3 external	1 internal +7 external
	Max. number to dose only	+2 external	–	–
Methods and Series	Learn titration	•	•	•
	Karl Fischer methods volumetric	V2OS equivalent methods	•	•
	Karl Fischer methods coulometric	C2OS equivalent methods	•	•
	Bromine index determination	•	•	•
	Accompanying stating	–	•	•
	Standard addition	•	•	•
	Thermometric titration	•	•	•
	SmartSample	•	•	•
	Number of method functions per method	15	60	150
	Number of loops per method	1	3	6
	Continuous run	–	•	•
	If ... then conditions	–	–	•
	Result buffer	–	–	•
	Series sequences	–	10	10
	Number of samples per series	303	303	303
	Predefined METTLER TOLEDO methods	>60	>70 (incl. KF methods)	>70 (incl. KF methods)
	Max. number of methods ¹	150	150	150
Task List	Number of tasks	10	10	30
	Number of tasks running in parallel	–	7	8
LabX SmartCodes™		•	•	•
SmartChemicals Functionality		•	•	•
Online Help		•	•	•
Parallel Titration Including KF		–	–	•
Expandable		–	to T9	–
StatusLight and Event Sounds		•	•	•
Data Export/Printing	RS-232, USB, Ethernet, PDF	•	•	•
Sensor Boards	pH/mV or conductivity or coulometry	1	2/1 ²	3/1 ²
Sensor Inputs	Potentiometric	2	4/2 ²	6/2 ²
	Polarized	1	2/1 ²	3/1 ²
	Reference	1	2/1 ²	3/1 ²
	PT1000	1	2/1 ²	3/1 ²
	Conductivity	1/0 ²	2/0 ²	3/0 ²
PC Software	LabX Titration connectivity: Express/Server	•	•	•
Homogenizer		TTL	RS/TTL	RS/TTL
Languages	Chinese, English, French, German, Italian, Korean, Polish, Portuguese, Russian, Spanish			
Material No.		30252672	30252675	30252676

¹ Unlimited with T5, T7 and T9 titrators when connected with LabX Titration software² 4/2 means for example: maximum number of inputs is 4, 2 are already available in standard delivery

Automation Solutions

Efficient Titration for Accelerated Throughput

Automating repetitive manual tasks instantly improves laboratory workflows, accelerates sample throughput and reduces variances and errors between operators. From the entry-level Rondolino sample changer to advanced multifunctional InMotion Autosampler and accessories, automated tasks expand to include preconditioning, cleaning, waste management and many more. From the simple-to-use Rondolino to our high-throughput InMotion Autosampler, we have a solution for you. More than just exchanging samples, our wide range of accessories can fully automate sampling, identification, temperature control and more.

Automation Solutions

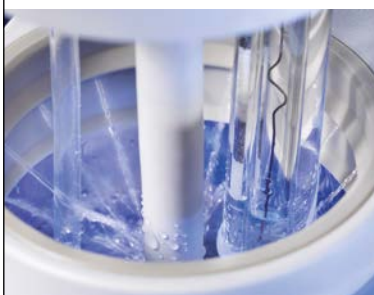
Need	Solution
Temperature control	Water bath racks and DH100
Liquid sampling/pipetting	InMotion aliquot kit, DispenSix liquid handler and TV6 valve
Reading sample IDs	Barcode reader and SmartSample weighing
Reagent and waste control	Solvent Manager, peristaltic and diaphragm pumps
Protection	CoverUp™ lid handling and LevelSens™
Cleaning	PowerShower™ cleaning system and line rinse
Connectivity	LED status indicators
Water extraction	InMotion KF
Transfer titrant and standards data	SmartChemicals

High Throughput



From the simple-to-use 9 sample Rondolino up to managing more than 300 samples with the InMotion Max 25-milliliter system, maximize your productivity with minimal bench space.

More Than Sample Changing



Advanced programming allows for complex series of cleaning, rinsing and conditioning steps. Automatically pipette and transfer samples with the DispenSix liquid handler and TV6 sampling valve.

Protect Your Samples



Protect your samples and operators with the CoverUp lid-handling system and control the temperature of the entire rack of samples with water-bath racks. Integrate a barcode reader or SmartSample RFID technology for automatic sample identification.



Put Your Lab InMotion

Flexible and Efficient Autosamplers

InMotion Bases		Corresponding InMotion Rack Kits		
Base Type	Material No.	Number of Samples	Beaker Size (mL)	Material No.
Flex	30094121	50	25	30094124
		27	80	30094125
		18	100	30094126
		15	180	30094127
		11	250	30094128
Pro	30094122	182	25	30094129
		69	80	30094130
		34	100	30094131
		23	180	30094132
Max	30094123	303	25	30094134
		113	80	30094135
		55	100	30094136
		43	180	30094137
		24	250	30094138

InMotion Complete Autosampler	Material No.
InMotion Flex base and 100 mL rack kit	30094120
InMotion Flex base and 80 mL rack kit	30276336

Temperature Control Water-Bath Rack Kits	
Flex 18 samples, 100 mL	30094139
Pro 61 samples, 80 mL	30094140
Pro 29 samples, 100 mL	30094141

Rondolino	
Automatic titration stand for 9 samples	51108500

Excellence Titrator T5 Rondolino	
T5 with Rondolino	30252674

Compact Titrator G20S Rondolino	
G20S with Rondolino	30252671

Liquid Handler	
DispenseSix liquid handler ¹	30673118

InMotion KF Oven Autosampler	
InMotion KF Flex 24 samples, 10 mL	30407500
InMotion KF Pro 26 samples, 5 mL	30407503
InMotion KF Pro 24 samples, 10 mL	30407502
InMotion KF Pro 20 samples, 20 mL	30407501

¹ The set includes two suction tubes (87 cm) and one dispensing tube (100 cm). The dDrive unit (30673134), additional tubes and bottle adapter for the suction tubes need to be ordered separately.

SevenExcellence pH meter with InMotion Flex, Excellence Refractometer with InMotion Pro and T9 Titrator with InMotion Max



Flex, Max and Pro 100 mL racks

Get more information
www.mf.com/Titration

Compact Titrators

Your Choice for Routine Applications

The Compact line of G10S and G20S titrators combines solid simple operation with space-saving design for dedicated routine titration applications. Ideal for standard industrial laboratory potentiometric titrations and daily quality control tasks.



G10S titrator

Just a Press of a Button



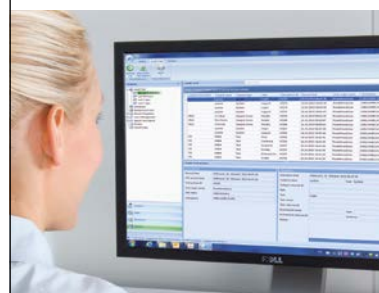
The large color touchscreen features the simple-to-understand and fast-to-operate One Click user interface. All users have their own home screen with dedicated shortcut buttons to directly start specific routine tasks. For secure operation, users can be assigned to different user groups and access the instrument with their own username and password.

Compact Automation



The automatic Rondolino titration stand is simple to install and uses minimal bench space. Series of up to 9 samples are processed quickly and safely. Dip-rinsing after each analysis ensures minimal carryover, and, after the series, the sensor is moved to a fixed conditioning beaker.

Single Software Solution



LabX Titration PC software offers full titrator control, safe database archiving, efficient results management with graphic monitoring and tailored result-search filters. The convenient Windows®-based user interface and integrated online help system enable safe and reliable G20S operation.



G20S titrator

		G10S	G20S
One Click Titration	Shortcuts per user on user-specific home screen	4	12
Plug-and-Play	Solvent Manager (optional)	•	•
	Burette recognition with titrant and titer	•	•
Automation Option	Rondolino (up to 9 samples)	•	•
User Management	4 fixed user groups: administrator, expert, technician and operator	•	•
	User password protection	•	•
Method and Series	Max. number of user methods	5	150
	Backtitration	–	•
Burette Drives	Number of burette drives for dosing and titrating	1	1
	Number of burette drives for dosing only	–	1
Data Export and Printing	USB, network, PDF	•	•
PC Software	LabX Titration Express	–	•
Material No. for Ready-to-Start Package	Manual titration stand	30267117	30252669
	Automatic titration stand (Rondolino bundle)	–	30252671

Get more information
 ► www.mt.com/Compact-Titration

One Click Water Determination

Simple and Secure

Karl Fischer titration is the specific standard method for water content determination, and it gives accurate and precise results within minutes. With our volumetric and coulometric Karl Fischer titrators, you only need to press one button to run a water determination. The precise and efficient InMotion KF Autosampler can work unattended and will analyze up to 26 samples at once saving time and user effort.

V10S/V20S/V30S
Volumetric KF Titrators



The Compact Volumetric Karl Fischer titrator determines water from 100 ppm to 100 percent in a wide range of liquid, solid and gaseous samples.

C10S/C20S/C30S
Coulometric KF Titrators



The Compact Coulometric Karl Fischer titrator offers particularly fast and precise titration of samples with low water content (from 1 ppm to 5 percent).

Solvent Manager

Safe Handling



The Solvent Manager takes care of filling, draining and exchange of reagents. It is controlled by the titrator and full security is ensured by the overflow protector in the waste bottle. User safety is increased by limiting exposure to dangerous chemicals.

Coulometric Generator

No Diaphragm Needed



For most analyses a generator electrode without diaphragm provides best usability. Chemical consumption is also lower as no catholyte reagent is needed.

DO308

Drying Oven



The manual Karl Fischer DO308 drying oven allows safe oven applications with single samples using manual sample addition. It can be operated with both coulometric and volumetric Karl Fischer titrators.

InMotion KF

Oven Autosampler



The efficient InMotion KF Autosampler allows for up to 26 samples to be analyzed using the gas extraction technique. The innovative one-piece cap enables simple and fast sample preparation. The temperature scan functionality speeds analysis of unknown samples.

		Volumetric			Coulometric		
		V10S	V20S	V30S	C10SD/ C10SX ¹	C20SD/ C20SX ¹	C30SD/ C30SX ¹
One Click Titration	Shortcuts per user on user-specific home screen	4	12	12	4	12	12
	Solvent or reagent control	–	–	•	–	–	•
Hot Plug-and-Play	Solvent Manager	•	•	•	Optional	•	•
	Burette recognition with titrant and titer	•	•	•	–	–	–
	USB printer	•	•	•	•	•	•
Automation	InMotion KF Flex/Pro Autosampler	–	–	•	–	–	•
	Homogenizer	–	–	TTL	–	–	–
User Management	4 fixed user groups: administrator, expert, technician and operator	•	•	•	•	•	•
	User password protection	•	•	•	•	•	•
Methods and Series	External extraction/dissolution	–	–	•	–	–	•
	Number of samples per series	120	120	120	120	120	120
	Preprogrammed METTLER TOLEDO methods	–	–	11	–	–	11
	Bromine index determinations	–	–	–	–	–	•
	Max. number of user methods	5	5	150	5	5	150
Languages	Selectable languages (specific per user)	Chinese, English, French, German, Italian, Korean, Polish, Portuguese, Russian, Spanish					
Data Export and Printing	USB, network, PDF	•	•	•	•	•	•
PC Software	LabX Titration Express	–	•	•	–	•	•
	LabX Titration Server	–	•	•	–	•	•
Material No. for Ready-to-Start Package	Volumetric	30267116	30252666	30252667	–	–	–
	Coulometric with diaphragm (SD) ¹	–	–	–	30267115	30252661	30252663
	Coulometric without diaphragm (SX) ¹	–	–	–	30267114	30252660	30252662

¹ X = Generator without diaphragm

D = Generator with diaphragm

InMotion KF Autosamplers

Accelerate Your Water Analyses

The InMotion Karl Fischer Autosampler provides precise and efficient Karl Fischer measurement performance. With a variety of innovative features and accessories, you can improve workflow efficiency and user safety. With improved productivity and an ergonomic space-saving design, it is the perfect instrument to improve your Karl Fischer titrations.



Straightforward Sample Prep



The innovative one-piece cap enables simple and fast sample preparation with less chance of chemical exposure. Just weigh your sample directly and fasten the screw cap to protect your sample from moisture and air contamination.

Secure Gas Flow Control



The electronic gas flow meter allows you to control the gas flow entering the titration cell. Once the flow rate is set, it cannot be changed and can be checked at a glance. This modular system adapts to the operator's workflows: The gas flow can either be generated with the air pump or controlled through the lab's own gas line.

Save Precious Time



The Temperature Scan feature speeds up analyses by determining the optimum heating temperature for your sample. Record the substance's heating curve and determine the optimal temperature in just a single run. When the ideal heating temperature of a substance is uncertain, Temperature Scan provides the answer.



Features and Accessories		InMotion KF Flex	InMotion KF Pro
Compatible Titrators	Excellence titrators	T7, T9	T7, T9
	Compact titrators	C30SX, C30SD, V30S	C30SX, C30SD, V30S
Automation and PC Software	Integrated digital gas flow meter	•	•
	Unattended solvent replacement within series	–	• ¹
	LED StatusLight	•	•
	LabX Titration Express/Server	•	•
Method and Series	Temperature range	40–280 °C	40–280 °C
	Maximum number of samples per series ²	120	120
	Flexible method with multiple loops	–	•
	Temperature scan and ramp functionality	–	•
Carrier Gas Option	Air pump AP200	•	•
	Gas stop valve SV2	•	•
	Heated transfer tube	• ³	• ⁴
Solvent Handling Option	Solvent Manager	•	•
	SP280 peristaltic pump	–	•
Vial and Cap	Vial volume	10 mL	5, 10 and 20 mL
	Cap type	One-Piece FEP Screw Cap	One-Piece FEP Screw Cap
Rack Kit Option No. of Positions × Vial Volume	26 × 5 mL rack	–	•
	24 × 10 mL rack	•	•
	20 × 20 mL rack	–	•
	Customized rack	–	•
Optional Long Needle for Oil Analysis	Long needle for 26 × 5 mL rack	–	•
	Long needle for 24 × 10 mL rack	•	•
	Long needle for 20 × 20 mL rack	–	•
	Long needle for customized rack	–	•

¹ Only with peristaltic pump SP280

² Reloading the rack

³ Optional

⁴ Included in the standard delivery

Get more information

► www.mt.com/InMotionKF-Oven

LabX Titration Software

Single Software for the Entire Lab

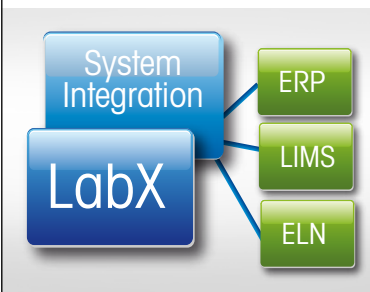
LabX™ software from METTLER TOLEDO offers a powerful range of possibilities to connect your titrators, balances, automation systems, density meters, refractometers, melting point instruments and UV/Vis spectrophotometers all with one single software. One uniform interface means increased efficiency, less training, and faster sample preparation, analysis and reporting.

Workflow Optimization



LabX offers many tools to help you optimize your workflow in the laboratory and increase efficiency. Connect your METTLER TOLEDO instruments to LabX and benefit from simplified operation, efficient method editing with the graphical layout, fast sample series modifications and tailored reports.

System Integration

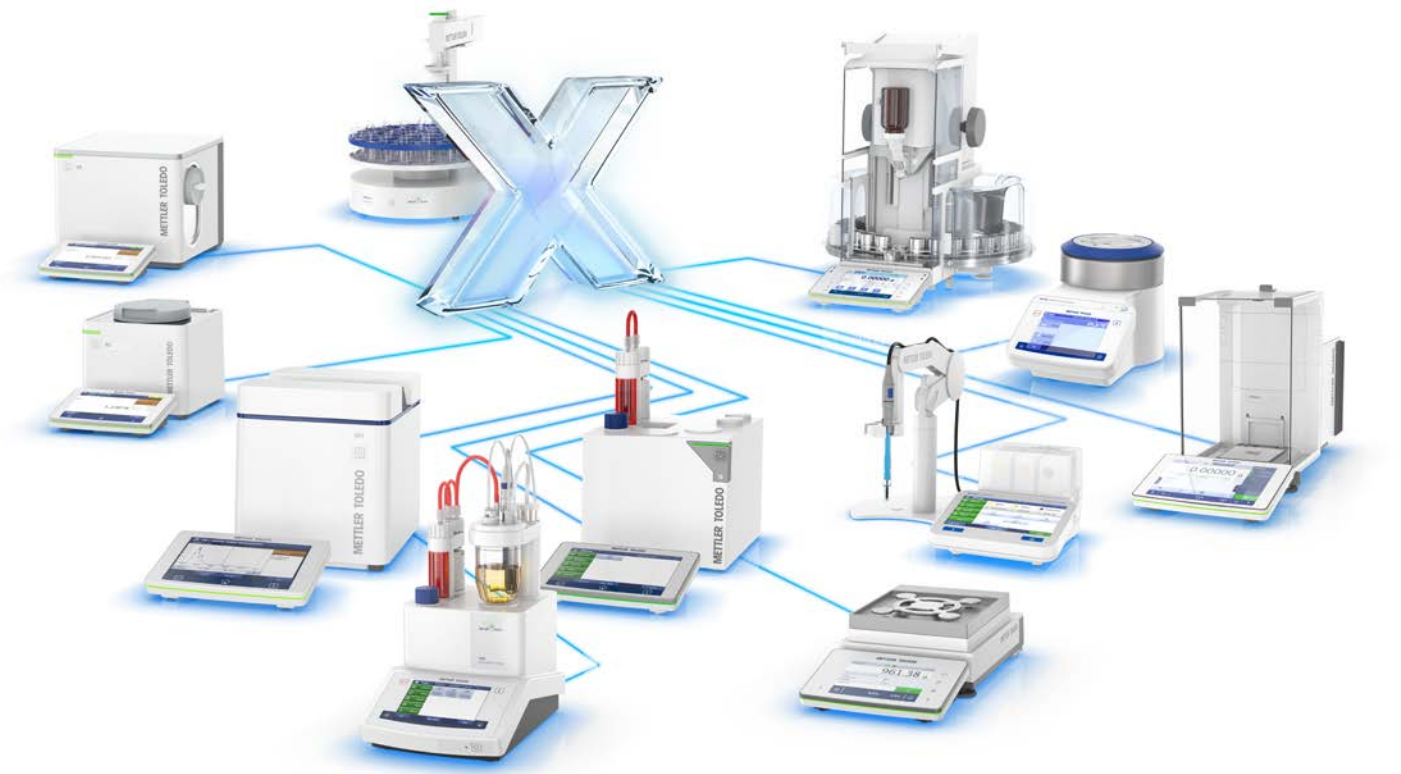


Integrating data systems presents an ever-present challenge. With LabX integration options, third party software such as ERPs, LIMS and ELNs can be connected seamlessly. LabX also offers an API interface with your main system to import sample lists, begin tasks and route results.

Regulatory Compliance



LabX Server provides all the necessary tools to meet FDA regulation 21 CFR Part 11 requirements for data management and storage. All relevant actions taken at the instrument or PC are recorded in the audit trail of LabX for full traceability and flexibility, no matter where you work.



Electronic Signature



Define electronic signature policies according to your standards. Ensure that new methods follow your own review and approval process before release into daily lab applications. Objects such as methods, results and reports are protected from any alteration.

Automation



Use LabX to simplify sample changer operation with the transparent and easy-to-manage sample series tables. Track the status of your series from any LabX-connected PC in your laboratory. Alter your sample series by adding or inserting urgent samples while operating.

SmartSample™



Eliminate transcription and sample order errors while also improving efficiency with SmartSample RFID technology. Identify and weigh your titration samples on an Excellence analytical balance with the SmartSample kit. Enter the sample identification at the balance to make sure an ID and weight are properly assigned to the each sample.

Get more information
 ► www.mt.com/LabXTitration

EasyPlus Titrators

Upgrade from Manual Titration

The EasyPlus™ titrator line is designed for routine applications and simple operation. Operators upgrading to semi- or fully automated EasyPlus titrations from manual methods instantly improve speed and accuracy. An intuitive user interface guides both initial setup and everyday analyses.

Easy EPM: Semi-Automated Titration and Sample Preparation

Easy EPM speeds up manual titration, and Easy Dose helps simplify standard preparation and dispensing tasks. The iTitrate software, with its easy to learn interface, is shared between all EasyPlus instruments. It ensures that your methods are easily configured and that your laboratory tasks are completed with minimal effort.

Easy Dose: Automated Sample Preparation

With the Standard Preparation application on the EasyDose instrument, there is no need to weigh the substance to a particular value in order to achieve the target concentration for the stock standard solution. The Easy Dose instrument will calculate and accurately dose the necessary amount of solvent for you, achieving precise sample preparation to simplify and speed up your everyday standard preparation and dispensing tasks.

Get more information

► www.mt.com/EasyPlusTitration

Simple Operation



Perform analyses using the touchscreen or a responsive wheel controller to synchronize with the 4.3-inch touchscreen for exact control and comfortable operation.

Precise Measurements



Improve accuracy with the automated burette and by staying focused on the sample color change. An immersed dispensing tip further increases precision, avoiding drop-to-drop variations.

Avoid Transcription Errors



Connect METTLER TOLEDO MS, ML, or ME balances directly to the instrument and transfer sample weights automatically. Export your results to a USB flash drive or print them using a USB printer.



Easy KFV titrator



Easy Ox titrator



Easy Pro titrator

Features Comparison Table	Easy pH	Easy CI	Easy Ox	Easy Pro	Easy KFV
Application	Acid/base	Precipitation	Redox	Acid/base, precipitation, redox	Karl Fischer volumetric
Number of Titration Methods	1	1	1	3	1
LongClick™	•	•	•	•	•
Easy Start Tutorial	•	•	•	•	•
Online Help	•	•	•	•	•
Predefined Calculation	•	•	•	•	•
EasyDirect™ PC Connectivity	•	•	•	•	•
Material No.	30060041	30060043	30060042	30060044	30060045
Languages	Arabic, Chinese, English, French, German, Italian, Japanese, Korean, Polish, Portuguese, Russian, Spanish, Thai, Turkish, Vietnamese				

	Easy EPM	Easy Dose
Fix Dosing	•	•
Manual Dosing	•	•
Dose Programs	•	•
Standard Preparation	•	•
Manual Titration	•	–
pH Sensor	•	–
Easy Wheel	•	•
USB P-25 Printer	•	•
uMix™	•	•
uPlace™	•	•
Material No.	30470855	30470856
EasyPlus Burette Size	<ul style="list-style-type: none"> • 20 mL (included) • 50 mL and 10 mL (optional) 	<ul style="list-style-type: none"> • 50 mL (included) • 20 mL and 10 mL (optional)



Easy EPM



Easy Dose

Versatile Dosing Application



Today's laboratories perform a broad variety of dispensing applications. Set your required volume, dispensing speed and time to tailor dispensing activities to meet your requirements.

Accurate Dispensing



Dispensing appears to be easy – at first glance. Accurate and reproducible liquid handling and sample preparation is time-consuming and requires well-trained laboratory personnel. The instrument accurately and reproducibly dispenses volumes down to 10 µL.

Clear Touchscreen Guidance



Designed for simplicity, the Easy Dose starts your routine task with a tap on the home screen. The user interface speaks your language – and 14 more. Learning and using an analytical instrument has never been easier.

Protect Your Investment

Maintain Titrator Uptime

Our professional services ensure your titrator and automation units are installed and operating correctly, and that your investment continues to provide accurate and reliable measurements. Detailed yet easy-to-read documentation provides the required evidence for your regulatory audits.

Installation and Qualification



EQPac supports the highest level of regulatory compliance, providing IQ/OQ with PQ and maintenance recommendations. It also includes system suitability testing, initial calibration and basic training.

IPac provides professional installation including IQ/OQ with PQ and maintenance recommendations. It includes system suitability testing and basic training with a standard level of documentation for your audit.

Calibration



Regular calibration by a manufacturer-trained service technician ensures that your titration system performs accurately and within manufacturer specifications. Our professional calibration certificate provides all the evidence you need for a trouble-free audit.

Extended Care



Extended Care provides assurance for the first 24 months after installation. With Extended Care you also receive two preventive maintenance visits. Regular and professionally performed maintenance prevents unexpected breakdown and ensures operational performance and reliability. Detailed checklists itemize the work carried out and support you during quality audits.

For more information about our service offerings, see pages 20–23.



Training



Our customized training, live and on-demand webinars, in-person seminars and consulting services help you to build titration knowledge and expertise. They are suitable for both existing teams and new recruits.

Continuously dependable results are only possible if measurement risks are identified and eliminated. METTLER TOLEDO's Good Titration Practice™ (GTP™) supports you in analyzing your specific process risk with our unique risk-check tool. In addition, GTPSecure™ provides all services necessary to achieve accurate and reliable titration.



► www.mt.com/GTP

	IPac	EQPac	Calibrate SCC	Extended Care
	B39920002	B39920003	S39905038	B39950001
Titration Excellence T5/T7/T9	•	•	•	•
Volumetric KF titrators V20S/V30S	•	•	•	•
Coulometric KF titrators C20S/C30S	•	•	•	•
Compact titrators V10S/C10S/G10S/G20S	•	–	•	•
¹ Add-on devices				
InMotion Autosampler	•	•	–	•
InMotion KF Oven Autosampler	•	•	•	•
dDrive and DispenseSix liquid handler	•	•	•	•
Additional burettes and dosing units	•	•	•	•

¹ Add-on devices can also be qualified and/or calibrated at the initial installation

Get detailed information about the titration service offering ► www.mt.com/Titration-Service

Accessories



Compact G20S with manual titration kit and DGi115-SC sensor in a glass titration beaker

Excellence and Compact Potentiometric Titrators

Description	Material No.
Dosing unit for dispensing and titration purposes	51109030
Y-cable for simultaneous pump and stirrer connection	51109889
Electrode holder set containing: electrode holder, attachment screw, electrode sleeve	51109195
Manual titration stand containing: titration stand, attachment screw, spacing, clamping, threaded ring, titration vessel (2 pcs), stopper set, ground joint adapter, electrode sleeve	51109190
Manual titration kit containing: manual titration stand, compact stirrer	51109220
Auto titration kit containing: electrode holder set, compact stirrer	51109221
Manual titration stand without accessories	51109118
Diaphragm pump SD660 with suction tube	30094165
Suction tube with filter for SD660	30094166
Peristaltic pump SP280	30094237
Novoprene tubes for SP280/SPR200, 1 m (1 pc) and 12 cm (10 pcs)	51190969
Silicone tubes for SP280/SPR200, 12 cm (5 pcs)	51108149
ChemSure tube for SP280/SPR200	30094297
Solvent Manager kit	51105652

Compact Titrators

Description	Material No.
Protective touchscreen cover	51105567
External power supply 100–240 VAC	51105795
USB A-B cable for PC connection, 1.8 m	51191926

Excellence Titrators (T5, T7, T9)

Description	Material No.
Terminal (with connection cable and protective cover)	51109017
Protective cover for terminal	30125377
Conductivity sensor board	51109840
pH/mV sensor board	51109818
T7→T9 upgrade set	51109960
External power supply unit	30253597
6-pol CAN cable, 20 cm	51109874
6-pol CAN cable, 60 cm	51109886
USB A-A cable for PC connection, 1.8 m	51191689
OE06 auxiliary output expander OE06	51108065
DH100 heating system 110 V	51108779
DH100 heating system 230 V	51108780
Volumetric KF kit (Solvent Manager included)	51105605
DV704 External KF volumetric kit	30378857
Coulometric KF kit (generator with diaphragm)	30267112
Coulometric KF kit (generator without diaphragm)	30267113
DispenseSix liquid handler ¹	30673118
dDrive unit	30673134
Handheld USB barcode reader	21901297
Dosing tube adapter 4 to 1	51108356



SmartSample reader on Titration Excellence

¹ The set includes two suction tubes (87 cm) and one dispensing tube (100 cm). The dDrive unit, additional tubes and bottle adapter for the suction tubes need to be ordered separately.

Karl Fischer Titration

Description	Material No.
Solvent Manager set	51105600
DM143-SC double pin Pt sensor	51107699
72 cm sensor cable for DM143-SC	51109183
Silicone tube 133 mm	51107480
Silicone tube 850 mm, Solvent Manager to solvent exchange bottle	51105581
Clear glass bottle, 1 L	30079610
Flat gasket seal for bottles	00023981
Molecular sieve 3Å (250 g)	00071478
O-ring for screw caps, black (4 pcs)	51107496
Screw cap for solvent bottle	00023937
Magnetic stir bar	51191159
Drying tube with cover	00023961
Silicone grease	00071300

Compact KF Volumetric Titrators (V10S, V20S, V30S)

Description	Material No.
Adapter for automatic draining of cell	51105594
O-ring for titration head	51190366
ST24 3-hole adapter incl. ST10, ST7.5 and pinhole stoppers	00023982
Stopper for 3-hole adapter (1 set: 1 ST10, 1 ST7.5, 6 pin hole stopper)	00025883
Septum stopper ST24 (10 pcs)	00023950
Septum stopper ST10 (10 pcs)	00023949
Solvent delivery/drain tube with screw fitting	51107481
Thermostatable titration vessel, 150 mL	51107497
Titration vessel, 250 mL	51107463
Homogenizer adapter set for IKA, 18 mm hole	51107409
Homogenizer adapter set for IKA, 19 mm hole	30030846
Homogenizer adapter set for Kinematica/Polytron, 12 mm hole	51107534

Compact KF Volumetric Titrators (C10S, C20S, C30S)

Description	Material No.
Coulometric solvent-exchange set	51105606
Solvent delivery/drain tube	00023936
Titration vessel	51108732
Thermostatable titration vessel	51109416
Generator electrode with diaphragm	51108751
Generator electrode without diaphragm	51108753
Cable for generator electrode	51107830
PTFE stopper with septum disk	51108741
Septum disk (12 pcs)	51108740

General Titration

Accessories	Material No.
Barcode reader (requires USB cable)	21901297
USB cable to barcode reader	21901309
LogStraight fingerprint reader	51192107
Micropropeller stirrer rod	00655073
Propeller stirrer rod	00101229
Sensor holder (when not in use)	00025654
Bottle rack for 2 × 1 liter bottles	51107065
TTL-I/O TBox DR42	51107420
TTL interface cable	51190589
RS232 connection cable (DB9 F/F)	51190362

LevelSens Description

LevelSens with holder, non-aqueous	51109853
LevelSens with holder, aqueous	51109854
LevelSens box (connects up to 4 LevelSens) – includes 20 cm CAN cable	51109210

Sample Handling

Accessories	Material No.
Visco-Spoon™	51107668
Syringes, 1 mL (100 pcs)	00071492
Syringes, 10 mL (100 pcs)	00071482
Needles, 80 × 0.8 mm (100 pcs)	00071484
Needles, 80 × 1.2 mm (12 pcs)	00071483
Glass weigh boat for powders, 20 × 60 mm (5 pcs)	00023951
Glass weigh boat for powders, 30 × 80 mm (5 pcs)	00023952



Visco-Spoon for grease and wax samples

LevelSens used with Solvent Manager and exchange set

Accessories

InMotion Autosamplers

Description	Material No.
SmartSample RFID kit	30094251
SmartSample 100 mL sleeve w/tag (20 pcs)	30094269
SmartSample tag (100 pcs)	30094271
InMotion aliquot kit for Pro 25 mL	30094248
InMotion COD kit for Flex 100 mL	30094249
InMotion Karl Fischer Direct kit for 100 mL	30094250
CoverUp lid handling for InMotion Flex	30094252
CoverUp lid handling for InMotion Pro 80 mL	30094253
CoverUp lid handling for InMotion Pro 100 mL	30094254
CoverUp lid handling for InMotion Pro 180 mL	30094255
InMotion CoverUp lids, 80 mL (10 pcs)	30094274
InMotion CoverUp lids, 100 mL (10 pcs)	30094275
InMotion CoverUp lids, 180 mL (10 pcs)	30094276
Option board barcode/SmartSample	30094233
Option board CoverUp/Stirrer/Pump	30094234
Tower InMotion Flex (cover not included)	30094160
Cover InMotion Flex/Pro 2 nd Tower	30094267
Tower InMotion Pro left type w/cover	30094236
Tower InMotion Max left type w/cover	30094232
Under-rack magnetic stirrer	30094263
InMotion barcode reader with mount	30094235
Reversible peristaltic pump SPR200	30094285
Titration sync cable, 5 pin	30094246
Stirrer/Pump Y cable, 6 pin	30094247
InMotion dispensing tube w/tip, 135 cm	51108070
InMotion dispensing tube w/tip, 3 m	30094162
Diaphragm pump dispensing tube w/o tip	51108147

Rondolino Sample Changer

Description	Material No.
PowerShower for Rondolino	51108219
Rinse tube for Rondolino PowerShower	51108116
Diaphragm pump for Rondolino	51108012



InMotion Pro 100 mL with CoverUp lid handling



InMotion KF 10 mL vials with an innovative one-piece cap

InMotion KF Oven Autosampler

Description	Material No.
Rack kit InMotion KF Pro 5 mL	30407438
Rack kit InMotion KF Pro 10 mL	30407439
Rack kit InMotion KF Pro 20 mL	30407440
Air pump AP200	30407441
Gas stop valve SV2	30407442
Drying unit for InMotion KF (w/o tubes)	30407430
Tube set for InMotion KF drying unit	30407431
Transfer tube for InMotion KF	30407432
Heated transfer tube for InMotion KF	30407443
Sample vials, 5 mL (228 pcs)	30407444
Sample vials, 5 mL (2,280 pcs)	30601007
Sample vials, 10 mL (192 pcs)	30407445
Sample vials, 10 mL (1,920 pcs)	30601008
Sample vials, 20 mL (144 pcs)	30407482
Sample vials, 20 mL (1,440 pcs)	30601009
Screw cap for 5 and 10 mL vials (228 pcs)	30407436
Screw cap for 20 mL vials (144 pcs)	30407437
Long needle for oil analysis, 20 mL vial	30407447
Long needle for oil analysis, 10 mL vial	30407448
Long needle for oil analysis, 5 mL vial	30407449
Tube set for automatic solvent exchange (pro only)	30407450
SP280 – peristaltic pump	30094237
Gas inlet adapter for coulometric cell	51108668
USB A-B cable for PC connection, 1.8 m	51191926

DO308 Drying Oven

Description	Material No.
Sample boat (glass)	51108657
Gas drying unit and flow meter (needs tubes)	51108660
Guide rod for sample boat	51371101
Screw cap GL37 for sample tube	51191129
Stop cock	51191130
Aluminium inserts for sample boat (50 pcs)	51108649
Furnace sample tube	51371206
Tube set	51108676
Gas outlet tubing	51108837
Silicone stopper ST14.5 (10 pcs)	00023276
3-hole adapter with plug stoppers, for volumetric titrations	00023982
Gas inlet stopper for operation with DO308	51108761
Air-pump box	51108670
Drying tube with 3-way tap	00105071

Titration Sensors

Plug-and-Play Combined pH Glass Electrodes with Sensor Chip	Material No.
DGi101-SC pH micro-electrode (3 mm shaft diameter) for small titration vessels and aqueous solutions	51109507
DGi102-mini pH micro-electrode (6 mm shaft diameter) for small titration vessels and aqueous solutions	51109508
DGi111-SC pH glass electrode	51109500
DGi112-Pro pH glass electrode with movable sleeve diaphragm for critical samples	51109501
DGi113-SC pH glass electrode with movable sleeve diaphragm for non-aqueous titrations	51109502
DGi114-SC pH glass electrode with movable sleeve diaphragm for aqueous solutions	51109503
DGi115-SC pH glass electrode with sleeve diaphragm	51109504
DGi116-solvent pH glass electrode with movable sleeve junction for non-aqueous media	51109505
DGi117-water pH glass electrode with integrated temperature sensor	51109506

Classical Combined pH Glass Electrodes	Material No.
DG111-SC pH glass electrode	00089596
DG113-SC pH glass electrode with movable sleeve diaphragm for non-aqueous titrations	00089632
DG115-SC pH glass electrode with sleeve diaphragm	00089806

Classical Half-Cell Electrode	Material No.
DG300-SC half-cell pH electrode in conjunction with a reference electrode (e.g. DX202)	51109286
Sb850 half-cell pH/mV electrode in conjunction with a reference electrode (e.g. DX202)	59904405

Classical Reference Electrodes for pH/ISE/Surfactants Half-Cell Electrode Sensors	Material No.
DX200 glass reference electrode	51089935
DX202-SC plastic reference electrode	51109295
DX205-SC glass reference electrode for sodium ISE	30066675
DX222-Na	

Sensors for Thermometric Titration	Material No.
Thermotrode with integrated cable, 1.2 m	30322060
Thermotrode with integrated cable, 2.0 m for InMotion Autosampler	30322061



DP5 Phototrode™ sensor set at different wavelengths



Titration sensors

Plug-and-Play Combined Metal Electrodes with Sensor Chip	Material No.
DMi101-mini semi-micro platinum-ring electrode (6 mm shaft diameter) with ceramic frit for argentometric titrations – small sample volumes	51109523
DMi102-SC semi-micro silver-ring electrode (6 mm shaft diameter) with ceramic frit for argentometric titrations – small sample volumes	51109533
DMi140-SC platinum-ring electrode for redox titrations	51109520
DMi141-SC silver-ring electrode for argentometric titrations	51109530
DMi144-SC platinum-ring electrode for redox titrations on the InMotion 20 COD rack	51109521
DMi145-SC silver-ring electrode with a movable easy-to-clean sleeve junction for argentometric titrations – dirty or viscous samples	51109531
DMi147-SC platinum-ring electrode for redox titrations without changing pH value – pH glass as reference element without ceramic junction	51109522
DMi148-SC silver-ring electrode for argentometric titrations without changing pH-value – pH glass as reference element without ceramic junction	51109532

Classical Metal Electrodes	Material No.
DM140-SC combined platinum-ring electrode for redox titrations	00089598
DM141-SC combined silver-ring electrode for argentometric titrations	00089599
DM143-SC double-pin platinum electrode	51107699
DM405-SC combined Ag ₂ S-sulfidized silver-billet electrode with annular ceramic junction for argentometric titrations	51109291
DM240-SC half-cell platinum pin electrode for redox titration in HF-bearing media with a reference electrode (e.g. DX202)	51109510

Photometric Sensors	Material No.
Phototrode DP5 with 5 selectable wavelengths: 520 nm, 555 nm, 590 nm, 620 nm, 660 nm – includes LEMO connection cable	51109300

Temperature Probes	Material No.
DT1000 – Pt1000 temperature sensor	51109828
DT1000 adapter for Rondolino and InMotion	51108032

Surfactant Electrodes	Material No.
DS500-SC for aqueous surfactant titrations	51107670
DS800-TwoPhase for two-phase surfactant titrations	51109540

Titration Conductivity Sensors	Material No.
InLab717 glass 4 pole cell, 10 µS/cm – 500 mS/cm, for conductivity titrations	51302401
InLab718 glass 2 pole cell, 0.1 µS/cm – 200 µS/cm, for low-conductivity titrations	51340266

Sodium Determination Sensor	Material No.
DX222-Na sodium selective sensor	30079619

Accessories

Sensor Cables and Parts

Description	Material No.
SC-LEMO 72 cm cable for plug-and-play and classical sensors	00089601
SC-LEMO 100 cm cable for plug-and-play and classical sensors	00089602
SC-LEMO 160 cm cable for plug-and-play and classical sensors	51108034
SC-LEMO 250 cm cable for plug-and-play and classical sensors	30094211
SC-LEMO 70 cm cable for amperometric/voltametric titrations and for DM143-SC	51109183
SC-LEMO 100 cm cable for amperometric/voltametric titrations and for DM143-SC	51109184
SC-LEMO 160 cm cable for amperometric/voltametric titrations and for DM143-SC	51109185
Cable MultiPin™ – Lemo/Pf1000 100 cm for DGi117-water	30281914
Y-cable (connection of the DP5 to the power supply and the titrator)	51109905
Sensor extension cable for electrode, 120 cm, female/male Lemo (for InMotion Max)	30259608

Spare Sensor Parts

Adapter, DIN to LEMO	00089600
DS500 membrane kit	51107669
DS800-TwoPhase emulsifier	51109543
Sensor-sleeve adapter	52001220

Printers

Description	Material No.
USB-P25 printer	30702998
Cable USB-P25 to Excellence and Compact titrators	51191926
Paper roll for USB-P25/RS-P26 (2 pcs)	12120799
Paper roll, adhesive backed	11600388
OKi B412dn USB-commercial printer (cables not included) EU version	51192203

Bottle-Top Adapters

Description	Material No.
Diameter 40.5 mm, slope 3.5 mm (Germany/Merck)	00023774
Diameter 37.5 mm, slope 5 mm (USA)	00023787
Diameter 28.5 mm (China)	30060026
Diameter 34 mm (India)	30060024

Burettes

Description	Material No.
1 mL burette DV1001 with RFID chip for plug-and-play installation	51107503
5 mL burette DV1005 with RFID chip for plug-and-play installation	51107500
10 mL burette DV1010 with RFID chip for plug-and-play installation	51107501
20 mL burette DV1020 with RFID chip for plug-and-play installation	51107502
Burette housing with RFID chip	51109117

Spare Burette Parts

Centering ring 5 mL	51107519
Centering ring 10 mL	51107520
Centering ring 20 mL	51107521
Glass cylinder 1 mL	51107533
Glass cylinder 5 mL	51107100
Glass cylinder 10 mL	51107101
Glass cylinder 20 mL	51107102
Piston 1 mL	51107535
Piston 5 mL	51107115
Piston 10 mL	51107116
Piston 20 mL	51107117
Locking screw	51107518
Stopcock/ceramic valve disk for reagents with tendency for crystallization	51107525
Stopcock/PTFE valve (standard)	51107537
Amber glass bottle, 1 L	00071296
Burette holder	00023645
Connection tubing	51107129
Dispensing tube with siphon tip, 70 cm	00025687
Dispensing tube with siphon tip, 100 cm	00025961
Suction tube, 83 cm	00025688
Suction tube, 3 m	30094262
Drying tube with cover	00023961
Drying tube holder	00023915
Anti-diffusion tips (5 pcs)	00023240



DV1020 20 mL burette



EasyPlus Titrators and Sodium Analyzer

Description	Material No.
EasyPlus burette 10 mL	30043900
EasyPlus burette 20 mL	30043901
EasyPlus burette 50 mL	30043902
EasyPlus tubing set instrument	30065464
EasyStir GT stirrer	30065467
EasyStir KF stirrer	30065468
EasyPlus titration head GT	30041102
Insert set titration head GT	30057635
EasyPlus titration head KF	30041103
Insert set titration head KF	30057636
KF vessel set	30065471
EasyPlus drying tube	30044701
Weighing boat and stopper set	30065466
Desktop power supply	51105795
Burette cover set	30057633
Valve	30042860
Bottle head	30060023
EasyPump	30064218
EasyPlus tubing set EasyPump	30065465
EasyDirect software, 3 titrators per PC installation	30065449

Sensors for EasyPlus Titrator

Description	Material No.
EG11-BNC: pH aqueous	30043103
EG13-BNC: pH non-aqueous	30043104
EM40-BNC: Redox mV	30043106
EM43-BNC: KF/Redox Ipol	30043105
EM45-BNC: Silver/Precipitation	30043107

Sodium Analyzer

Description	Material No.
DX222-Na for sodium analyzer	30079616
DX205-SC (ISE reference)	30066675
Sodium analyzer head Na	30079612
Insert set sodium analyzer head Na	30079618
Electrolyte 0.5 M DIPA-HCL-ISA, 25 mL	30064081
Electrolyte 0.5 M DIPA-HCL-ISA, 250 mL	30066674

Titration Beakers

Description	Material No.
Polypropylene beakers, 100 mL (120 pcs)	51109388
Polypropylene beakers, 100 mL (480 pcs)	51109389
Polypropylene beakers, 100 mL (1,400 pcs)	00101974
Polypropylene beakers, 250 mL (500 pcs)	00023829
Polypropylene beakers, red, 100 mL (1,400 pcs)	00025777
Two-phase beaker for surfactant titrations	51107655
Covers for 100 mL beakers (16 pcs)	00101448
Glass beakers, 100 mL (20 pcs)	00101446
Polypropylene beakers 80 mL (30 pcs)	51108030
Polypropylene beakers 80 mL (1,352 pcs)	51109328
Polypropylene, 180 mL (500 pcs)	30094245
Glass beakers, not for autosamplers, 250 mL (10 pcs)	00023515
Glass micro beaker for sample vol. 5–20 mL	00023516
Glass micro beakers for sample vol. 5–20 mL (20 pcs)	51108125
Glass aliquot beaker, 20 mL	51108314
Glass aliquot beaker, 100 mL	51108161
Thermostatable glass, 100 mL	00023517
Glass tubes for InMotion, 25 mL (100 pcs)	51190936

Multiparameter Accessories

Description	Material No.
TV6 multi-port valve (6-port, 2 way)	30026544
Adapter M8×1.5 M/M8×1 F (SP×pump)	30094295
Titration to density/refractive index tube	51337240
Connection cable, density/refractive to titrator	51105856



Titration beakers

Get more information on our multiparameter solutions
www.mt.com/Titration-Multiparameter



Density Meters and Refractometers

Solutions for the Quality Control of Liquids



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Scan this code for more information.

- ▶ www.mt.com/Density
- ▶ www.mt.com/Refractometry

Density and Refractive Index

Simple and Efficient Measurement

Digital Instruments

Digital density meters and refractometers have mostly replaced manual methods like hydrometers, pycnometers or Abbe refractometers, which are often prone to operator handling errors. Get repeatable results at a push of a button, measuring density, specific gravity, refractive index, Brix and more. For increased efficiency and data integrity, the data can be transferred to a PC software.

Built-In Temperature Control

For highly accurate results, our benchtop models have a built-in Peltier temperature control and a very precise temperature sensor, ensuring that the measurement is performed at the exact target temperature.

Simplified Quality Control

Get immediate color-coded pass/fail information at the end of the measurement. Target values, limits and methods can be defined for each product. Measurement results are then displayed in red if they are outside the limits.

Performance Meets Simplicity!

Improve the performance in your lab with our Excellence Density Meters and Refractometers, measuring almost any sample with a very high accuracy and offering modular solutions for workflow automation.



Excellence Line

Simple and Affordable for Daily Routines

With a remarkably simple user interface, EasyPlus™ Density Meters and Refractometers allow anyone to obtain accurate results in the lab or near the production line.



EasyPlus Line

Portable Instruments in Your Hands

Made for use in the lab and on the go, portable density meters and refractometers are lightweight, ergonomic and easy to use.



Portable Line

Tailored Performance

A wide range of accessories and consumables is available to adapt your instrument to your application and workflow.



Accessories

Instrument Verification and More

To help ensure accurate instrument performance, we offer different workflows to verify its accuracy, guiding you through the tests with our certified and traceable standards.



Service

Excellence Line

Performance Meets Simplicity

Developed for a wide range of applications, our intuitive Excellence Density Meters and Refractometers measure almost any sample with very high accuracy. A modular instrument design adapts to expanding workflows, allowing today's investment to be ready for tomorrow's demands.

Keep It Simple



Start the measurement with a touch on your shortcut. One Click™ gives easy access to the tasks you need, simplifying your daily work and making you feel right at home.

Density Meters



Offering highly accurate measurements of up to 6 decimal places, intuitive operation, and a modular workflow, Excellence Density Meters are the perfect solution for today and a valuable foundation for tomorrow.

Refractometers



Developed for a broad range of industries, Excellence Refractometers can measure almost any sample with very high accuracy and be connected to other instruments and automation units.



Excellence Density Meters		D4	D5	D6
Density (g/cm ³)	Measuring range	0.000–3.000	0.000–3.000	0.000–3.000
	Accuracy	±0.0001	±0.00005	±0.000005
	Repeatability	±0.00005	±0.000005	±0.000001
	Resolution	0.0001	0.00001	0.000001
Temperature (°C)	Temperature range	0–95 (32–203 °F)	0–95 (32–203 °F)	0–95 (32–203 °F)
	Accuracy	±0.03	±0.02	±0.01
Languages		Chinese, English, French, German, Italian, Korean, Polish, Portuguese, Russian, Spanish		
Display/User interface		7-inch display with color touchscreen with real time view of the measuring cell		
PC software		LabX™ PC software	LabX PC software	LabX PC software
Dimensions (W×H×D) mm		267 × 226 × 256	267 × 226 × 256	267 × 226 × 256
Weight		17.5 kg	17.5 kg	17.5 kg
Material No.		30474900	30474901	30474902



► www.mt.com/Excellence-Density

Excellence Refractometers		R4/RX4 Measuring Cell	R5/RX5 Measuring Cell
Refractive index (nD)	Measuring range	1.32–1.70	1.32–1.58
	Accuracy	±0.0001	±0.00002 around adjustment point ±0.00004 entire range
	Repeatability	±0.00005	±0.00001
	Resolution	0.0001	0.00001
Brix (% w/w)	Measuring range	0–100	0–100
	Accuracy	±0.05	±0.014
	Repeatability	±0.05	±0.01
	Resolution	0.01	0.01
Temperature (°C)	Temperature range	5–100 (41–212 °F)	5–75 (41–167 °F)
	Accuracy	±0.1 (5–100 °C)	±0.03 (15–50 °C) ±0.05 (5–75 °C)
Languages		Chinese, English, French, German, Italian, Korean, Polish, Portuguese, Russian, Spanish	
Display/User interface		7-inch display with color touchscreen	7-inch display with color touchscreen
PC software		LabX PC software	LabX PC software
Dimensions (W×H×D) mm		208 × 193 × 226	208 × 193 × 226
Weight		4.8 kg	4.8 kg
Material No.		R4: 30474903, RX4: 30474905	R5: 30474904, RX5: 30474906



► www.mt.com/Excellence-Refractometry

Automate Your Workflow

Increase Throughput, Assure Accuracy

Save time, reduce costs and improve operational safety by minimizing the need for operator interaction with the instrument. Increase the quality of your measurement data by ensuring that all steps are performed the same way each time. Increase results repeatability and reliability with fully automatic determination.

Free up time for operators to perform other tasks by replacing your manual workflow using syringes with automated sampling, measuring, draining, rinsing and drying. Increase your throughput with autosamplers.

Automate Your Sampling



Increase repeatability by avoiding operator-dependent sampling. Fill and rinse the measuring cell with the SPR200 sampling pump with sample specific speed and duration. Utilize the powerful DryPro drying pump for quick and efficient drying of your density meter.

Optimize Sampling and Cleaning



Powerful SC1 and SC30 autosamplers automate your workflow with up to 30 samples and – thanks to overpressure sampling – allow for the analyses of all types of samples, including highly viscous ones. Save time and rinsing solution with highly efficient cleaning.

Measure Demanding Samples



Nothing is impossible. Measure extremely viscous samples as well as samples that are solid at room temperature with the SC1H and SC30H. Heated to 80 °C, samples like bitumen or lipstick become fluid enough to be analyzed.



Run Multiple Samples

Load up to 303 samples on our autosamplers and press start. The system does all the work for you, whether for a single analysis or a multiparameter measurement.

► www.mt.com/Excellence-Automation

	DryPro Drying Pump	SV3 3-Way Valve ¹	SPR200 Sampling Pump ¹	SC1 Single Sample Automation	SC30 Multiple Samples Automation	SC1H Heated Version of SC1	SC30H Heated Version of SC30	InMotion™ Autosampler
Sampling	No	No	Auto	Auto	Auto	Auto	Auto	Auto
Draining	No	No	Semi-auto	Auto	Auto	Auto	Auto	Auto
Rinsing	No	No	Semi-auto	Auto	Auto	Auto	Auto	Auto
Drying	Yes	No	With DryPro	Auto	Auto	Auto	Auto	Requires DryPro and SV3
Heating	No	No	No	No	No	Yes	Yes	Yes
No. of samples	–	–	1	1	30	1	30	Up to 303
Material No.	30474899	30474898	30094285	51326000	51327000	51326400	51327500	30094290

¹ Available as SV3/SPR200 bundle (30474907)
SV3 can also be used for waste separation

Multiparameter Systems

Customer-Tailored Performance

Save time and increase data quality. Multiparameter analyses combining density, refractive index, color, pH, titration, and more prevent the alteration of samples between individual analyses. Results can be displayed directly on the instrument screen, ensuring that all your data is at your fingertips.

The modular approach of our Excellence Density Meters and Refractometers allows you to add one or more instruments in a multiparameter system according to your workflow and needs.

Density and Refractive Index



Our space-saving system enables you to combine a density meter with a refractive index cell to measure both parameters in one run.

Refractive Index and pH or Conductivity



Combine a pH or conductivity meter with a refractometer or a density meter for multiparameter analysis, e.g. to measure Brix and pH of beverages.

Acid-Corrected Brix and More



Connect a refractometer to a titrator and determine the acid-corrected Brix value. Additional instruments are supported with the auxiliary instrument function.



Save up to 70% of Labor Time

With a multiparameter analysis system, density, pH, refractive index and color measurements can be performed in one run! Save time, improve the quality of your results and increase throughput up to 50%.

► www.mt.com/Excellence-Automation

Connecting Kits	Material No.
Connecting kit – Refractive index cell	51337024
Connecting kit – pH SevenCompact	51337023
Connecting kit – Conductivity SevenCompact	51337022
Connecting kit – Spectrophotometer UV5	30474868
Auxillary instrument adapter ¹	51105856

¹ USB-RS232 adapter to control external instruments via RS232



Go Digital

LabX Software Connects Your Lab

Future-proof your lab. Much more than just an instrument management software, LabX™ manages data, instruments, and users and brings your tasks directly to the instrument's touchscreen with bidirectional integration into your ELN, LIMS, or SAP system. Save paper, avoid transcription errors and ensure data integrity.

Manage Your Data



Organize and edit methods, viewing results the way you want to see them. Store all data, videos and metadata in real-time. Create customized reports to display the information you need.

Manage Your Instruments



Power your bench by integrating a variety of METTLER TOLEDO Excellence line instruments on one multiparameter platform. Manage different instruments with one PC software that includes step-by-step user guidance and communication with LIMS and other lab systems.

Manage Your Users



Customize user roles and define user permissions and rights to protect your methods and data. Enable electronic signatures to sign off on measurements. Ensure secure user authentication with the use of password protection or fingerprint identification.



Ensure Compliance

Be ready for audits with our software validation service, which supports LabX system compliance with regulations such as 21 CFR Part 11, EU GMP, and ISO 17025.

► www.mt.com/Excellence-Software

Product	Description	Material No.
LabX Express Starter Pack DERE	LabX software for 1 computer with up to 3 instruments	11153130
LabX Server Starter Pack DERE	LabX software for a distributed (client/server) installation with up to 60 instruments	11153131
Instrument License DERE	License needed to connect 1 DERE instrument	11153250
Instrument License Melting Point	License needed to connect 1 Melting Point instrument	30005811
Instrument License Titrator	License needed to connect 1 Titrator	30097756
Instrument License UV/Vis	License needed to connect 1 UV/Vis instrument	30247986
Instrument License Balance	License needed to connect 1 balance	11153220
Instrument License pH	License needed to connect 1 pH meter	30247989

EasyPlus Density Meters and Refractometers

Simple and Affordable for Daily Routines

Designed to bring simplicity to your operation, compact and rugged EasyPlus™ Density Meters and Refractometers are suitable for a variety of industries whether in your lab or near your production line. With an accuracy of up to 4 decimal places and fast automatic temperature control, the instruments deliver high results repeatability and stability.

Accurate and Intuitive by Design



Prevent operator errors and save time on training thanks to the intuitive app-based user interface. Ensure proper sampling by observing your measurement with a real-time video view of the density measuring cell and securely manage users with different rights.

Precise Results Just a Few Steps Away



Measure within seconds with FastStart™. Start your analyses the second the sample hits the cell – without pressing a button. EasyPlus Refractometers are engineered with high quality components to withstand rough environments.

Say Goodbye to Your Pen



Manage your data efficiently with EasyDirect™ Density and Refractometry PC software. Easily create and tailor reports and transfer your results to Excel or PDF. For more thorough analysis, create graphs and monitor your samples over time.



EasyPlus Density Meters		Easy D30	Easy D40
Density (g/cm ³)	Measuring range	0.000–3.000	0.000–3.000
	Accuracy	±0.001	±0.0005
	Resolution	0.001	0.0001
Temperature (°C)	Temperature range	15–25 (59–77 °F)	15–50 (59–122 °F)
	Accuracy	±0.2	±0.1
Languages		Bahasa Indonesian, Chinese, English, French, German, Italian, Korean, Polish, Portuguese, Russian, Spanish, Thai, Turkish	
Number of methods		1	6
User management		Yes	Yes – 3 user groups: admin, expert, operator; up to 10 users; password protection
Automatic viscosity correction		Yes	Yes
Automatic bubble detection (BubbleCheck™)		No	Yes
Color-coded results identification		Yes	Yes
Integrated drying pump		Yes	Yes
Material No.		30468670	30468671

► www.mt.com/EasyPlus-Density

EasyPlus Refractometers		Easy Brix	Easy R40	Easy Bev
Refractive index (nD)	Measuring range	1.32–1.58	1.30–1.72	1.32–1.58
	Accuracy	±0.0001	±0.0001	±0.0001
	Resolution	0.0001	0.0001	0.0001
Brix (% w/w)	Measuring range	0–100	0–100	0–100
	Accuracy	0.05	0.05	0.05
	Resolution	0.01	0.01	0.01
Temperature (°C)	Temperature range	15–25 (59–77 °F)	10–65 (50–149 °F)	15–25 (59–77 °F)
Languages		Bahasa Indonesian, Chinese, English, French, German, Italian, Korean, Polish, Portuguese, Russian, Spanish, Thai, Turkish		
Number of methods		1	6	6
User management		No	Yes – 3 user groups: admin, expert, operator; up to 10 users; password protection	
Automatic sample detection (FastStart)		Yes	Yes	No
Color-coded results identification		Yes	Yes	Yes
Material No.		30468673	30468672	30468674

► www.mt.com/EasyPlus-Refractometry

Portable Instruments

Light, Intuitive and Rugged

Designed to fit comfortably in the hand, our lightweight and robust portable density meters and refractometers allow for accurate and precise measurement in the lab or on the go. Results are temperature-compensated and can be delivered in the measurement unit needed – specific gravity, Brix, and many more.

Simply Intuitive



With an intuitive user interface, menus and selections are self-explanatory. The portable density meter's bright display ensures excellent visibility both indoors and outdoors. Color-coded results enable instant identification of acceptable samples.

Precise Results Just a Few Steps Away



Save precious time with quick, simple density, refractive index and Brix measurements. Directly add the the sample on the prism of the portable refractometer and fill the measuring cell of the portable density meter using the automated pump. You receive the result instantaneously and can move on to the next sample.

Reliable Results



Get accurate results no matter the temperature. For up to 30 products in Densito and 10 products in Refracto, sample specific temperature compensation factors can be entered to correct the measurement value to the desired temperature (e.g. 20 °C).



Portable Density Meters		Densito	DensitoPro
Density (g/cm ³)	Measuring range	0.000–3.000	0.000–3.000
	Accuracy	±0.001	±0.001
	Repeatability	±0.0005	±0.0005
	Resolution	0.0001	0.0001
Temperature (°C)	Temperature range	0–50 (32–122 °F)	0–50 (32–122 °F)
	Accuracy	±0.2	±0.2
Languages		Chinese, English, French, German, Indonesian, Italian, Korean, Polish, Portuguese, Russian, Spanish, Thai, Turkish	
Display/User interface		2.4-inch color screen with buttons and joystick	
PC software		EasyDirect PC software	EasyDirect PC software
Dimensions (W×H×D) mm		267×226×256	267×226×256
Weight		355 g	355 g
Material No.		30330857	30330858

► www.mt.com/Densito

Portable Refractometers		Refracto 30PX	Refracto 30GS	MyBrix
Refractive index (nD)	Measuring range	1.32–1.50	1.32–1.65	1.33–1.53
	Accuracy	±0.0005	±0.0005	±0.0003
	Resolution	0.0001	0.0001	0.0001
Brix (% w/w)	Measuring range	0–85	0–100	0–95
	Accuracy	±0.2	±0.2	±0.2
	Resolution	0.1	0.1	0.1
Temperature (°C)	Temperature range	10–40 (50–104 °F)	10–40 (50–104 °F)	5–40 (41–104 °F)
	Accuracy	±0.2	±0.2	±0.1
Languages		English	English	English
Display/User interface		Backlit LCD with keyboard	Backlit LCD with keyboard	Digital LCD with keys
PC software		EasyDirect PC software	EasyDirect PC software	No
Dimensions (W×H×D) mm		186×55×60	186×55×60	120×55×35
Weight		250 g	250 g	115 g (incl. batteries)
Material No.		51324650	51324660	30693200

► www.mt.com/Refracto

Accessories and Consumables

Tailored Performance



Excellence Line

Description	Material No.
LabX PC software – Express	11153130
LabX PC software – Server	11153131
Infrared motion sensor – ErgoSens™	11132601
Level sensor – LevelSens™	51109853
Fingerprint reader – LogStraight™	51192107
Handheld barcode scanner	21901297
USB-P25 printer	30702998
USB-P-56RUE printer	30094673
USB-P-58RUE printer	30094674
Refractometer press for pasty products	51337155
Refractometer foil stamp set	30384986
Syringe adapter, density meter DM	51337154
Syringe holder, density meter DM	30474897
In-use cover	30474889





EasyPlus Line

Description	Material No.
EasyDirect Density and Refractometry PC software	30451628
USB-P25 printer	30702998
Luer lock, cell adapter and syringe kit	30622730
Handheld barcode scanner	21901297
USB keyboard	51192111
Syringe pressing tool	30475288
Drying tower (desiccator, screwdriver, screws, drying tube with adaptor, silica gel, for Easy D30 and Easy D40)	30468675
Wall mount kit (for Easy Bev)	30465247



Portable Line

Description	Material No.
EasyDirect Density and Refractometry PC software	30451628
Bluetooth printer Godex MX20 with dongle, Densito	30330864
USB-P25 printer	30702998
Protective cover, Densito	30330860
Connector syringe/Filling tube, Densito	30330853
Tags SmartSample, Densito	30449268
Tags SmartSample film for tanks, Densito (10 pcs)	30449269
Sampling tube, 190 mm, Densito	30330847
Sampling tube, 600 mm, Densito	30330848
Carrying case, Densito	30330861
Battery Li-ion 2400 mAh, Densito	30330855

Lifecycle Protection

Ensure Accuracy and Reliability

Use our professional services from day one to ensure your density and refractometry systems are installed and operating correctly, and that they continue to provide accurate and reliable measurements throughout their whole lifecycle. Detailed yet easy-to-read documentation provides required evidence for your audits.

Installation and Qualification



EQPac supports the highest level of regulatory compliance for your Excellence Meter, providing IQ/OQ with PQ and maintenance recommendations. It also includes initial calibration and basic training. The comprehensive, fully-compliant documentation supports all your regulatory needs.

IPac provides professional installation of your Excellence Meter, including IQ/OQ with PQ and maintenance recommendations. It includes performance testing and basic training with a standard level of documentation for your audit.

Calibration



Regular calibration by a manufacturer-trained service technician ensures that your device performs accurately and within manufacturer specifications. A professional calibration certificate provides all the evidence you need for a trouble-free audit.

Extended Care



Extended Care provides you with added assurance for the first 24 months after installation. With Extended Care you also receive two preventive maintenance visits. Regular and professionally performed maintenance prevents unexpected breakdown and ensures operational performance and reliability. Detailed checklists itemize the work carried out and support you during quality audits.

For more information about our service offerings, see pages 20–23.



Training



Our customized training, live and on-demand webinars, in-person seminars and consulting services help you to build density and refractometry knowledge and expertise. They are suitable for both existing teams and new recruits.

GDRP™ – 5 Steps to Excellence

Good Density and Refractometry Practice™ is a 5-step program to improve your lab processes. It covers the entire lifecycle of your investment and helps to improve quality while reducing risk and cost.



► www.mt.com/GDRP

	StarterPac	IPac	EQPac	Calibrate SCC	Basic Test Report (1 Point)	Extended Care
	B39920001	B39920002	B39920003	S39905038	S39905022	B39950001
Excellence Density and Refractometry	–	•	•	•	–	•
EasyPlus Density and Refractometry	•	–	–	•	–	•
Handheld meters	–	–	–	•	•	•
Automation (SC1/SC30/DryPro)	–	–	–	–	–	•

pH Meters, Sensors and Solutions

Quick and Reliable Measurements of pH,
Conductivity, Ion Concentration, ORP,
and Dissolved Oxygen





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Scan this code for more information.

► www.mt.com/pH

Reliable Results

Comprehensive Portfolio

METTLER TOLEDO provides complete solutions for the determination of pH, conductivity, ion concentration, ORP and dissolved oxygen – from simple equipment to fully automated systems. Our wide range of sensors ensures reliable measurements for virtually any type of sample. We offer benchtop meters for use in laboratories as well as portable meters for flexible use on the go or outside. Our portfolio of calibration standards is the basis for accurate measurements. With our services and expertise, we support you throughout your product's lifecycle, from selecting the right system until its retirement or replacement.

Benchtop Meters

Benchtop meters from simple to sophisticated lab applications support user-friendly and intuitive single and multichannel instruments for high precision and solid compliance.



SevenDirect™

SevenExcellence
SevenDirect
FiveEasy and FiveEasy Plus

Portable Meters

These handheld meters provide optimum convenience and high performance during mobile work on the factory floor or out in the field.



**Seven2Go
SevenGo Duo
FiveGo**

Sensors for Lab and Field

Our sensors combine innovative technologies and glass-blowing tradition for reliable pH, ORP, ion-selective, conductivity and DO analysis.



InLab and LE Sensors

Calibration and Care Solutions

Our certified calibration standards ensure accurate measurements. By using care solutions, you can keep sensors at peak performance and prolong their usable life.



**Calibration Standards
Maintenance and Storage Solutions**

Service and Expertise

Our large network of service technicians can help to ensure your instruments are working at their highest potential, while Good Electrochemistry Practice™ (GEP™) helps to ensure day-to-day accuracy.



**Good Electrochemistry Practice
Installation and Qualification
Care Contracts**

SevenExcellence

Powerful, Secure Instruments

SevenExcellence™ stands for convenient, easy-to-understand operation combined with high measurement accuracy and outstanding flexibility. A capacitive touchscreen and large 7-inch display make the instrument truly intuitive, with ease-of-use reinforced by the availability of menus in 10 languages. The instrument can effectively cope with complex applications and stringent requirements in regulated markets, but it also provides added value for routine laboratory measurements.

Excellence

Seamless Processes



SevenExcellence has been designed to optimize your workflows and make lab work more efficient. Just one click starts a sample or a measurement/analysis series with an optional autosampler. Once set up, data archiving is a standard procedure that will take place automatically following each analysis.

Solid Compliance



SevenExcellence comes with security functions that support your workflow during all phases of calibration, measurement and archiving. It is suitable for routine tasks as well as professional measurements under stringent GLP conditions. Connected to LabX™ pH, SevenExcellence offers effective compliance support.

Sustainable Value



SevenExcellence offers flexibility on all levels, ranging from the number of measurement parameters to the choice of a vast collection of peripheral devices. The instrument's interfaces allow you to connect multiple peripherals simultaneously, supporting your workflow in the best way possible.

► www.mt.com/SevenExcellence



Unmatched Performance for:

- pH
- Conductivity
- Ion concentration
- Dissolved oxygen/BOD
- Oxidation-reduction potential



SevenExcellence S479

Convenient Versatility

Excellent Measurement Flexibility

SevenExcellence offers flexibility on all levels, ranging from the number of measurement parameters to the choice of a vast collection of peripheral devices. The instrument's interfaces allow you to connect multiple peripherals simultaneously, supporting a streamlined workflow.



SevenExcellence S475

7 Good Reasons for SevenExcellence:

- **Touchscreen convenience** – easy to learn, quick to operate
- **Menu guidance in 10 languages** – user-friendly operation
- **Large, well-arranged color display** – information identifiable at a glance
- **Modular design** – ready to expand when your needs change
- **Many peripheral options** – to ensure efficient measurement workflows
- **Intelligent sensors** – peace of mind, error elimination
- **Comprehensive service offering, incl. EQPac** – high uptime and compliance

Automated Efficiency



With flexible InMotion™ Auto-samplers, automated sensor calibration and measurement of up to 303 samples is possible. Professional automation ensures maximum security, comfort and efficiency.

Professional User Management



SevenExcellence includes ingenious user management with 4 levels from user to administrator, enabling the experience-based assignment of rights. The risk of unintentional or unauthorized setting changes or results deletion is eliminated.

LabX Laboratory Software



Connected to LabX software (see pages 14–19), SevenExcellence profits from many additional functionalities such as report creation, compliance support (e.g. 21 CFR Part 11) and connection to ERP/LIMS systems. LabX also enables smart connection to other METTLER TOLEDO lab instruments.

► www.mt.com/SevenExcellence

SevenExcellence Meters and Kits

Model	Channel	Parameter	Measuring Range	Resolution and Accuracy	InLab™ Sensor	Material No.	
S400-Basic	1	pH mV Temperature	-2.000–20.000 pH; -2,000.0–2,000.0 mV -30.0–130.0 °C	0.001/0.01/0.1; ±0.002 0.1/1; ±0.1 0.1; ±0.1	None	30046240	
S400-Kit					Expert Pro-ISM®	30046241	
S400-Bio					Routine Pro-ISM	30046242	
S400-Micro					Ultra-Micro-ISM	30092982	
S400-uMix					Expert Pro-ISM and uMix™ stirrer	30092983	
S700-Basic		Conductivity Temperature	0.001 µS/cm – 2,000 mS/cm -30.0–130.0 °C	0.001–1; ±0.5% 0.1; ±0.1	None	30046244	
S700-Kit					731-ISM	30046245	
S700-Trace					Trace including flow cell	30046246	
S500-Basic		pH mV Ion concentration Temperature	-2.000–20.000 pH; -2,000.0–2,000.0 mV 0–999,999 mg/L, ppm -30.0–130.0 °C	0.001/0.01/0.1; ±0.002 0.1/1; ±0.1 0.001–1; ±0.5% 0.1; ±0.1	None	30046248	
S500-Kit					Expert Pro-ISM	30046249	
S500-Bio					Routine Pro-ISM	30046250	
S500-F					perfectION™ Fluoride	30046251	
S900-Basic			Dissolved oxygen	0.000–50 mg/L, ppm	0.001 ±0.1 mg/L from 0–8 ±0.2 mg/L from 8–20 ±10% from 20–50 0.1; ±0.1	None	30092984
S900-Kit						OptiOx	30092986
S900-BOD						OptiOx	30092987
S600-Kit	Dissolved oxygen Temperature		0.000–99 mg/L, ppm -30.0–130.0 °C ²	0.001; ±0.5% 0.1; ±0.1	605-ISM	30092985	
S470-Basic	2		pH mV Conductivity Temperature	See S400 and S700	See S400 and S700	None	30046252
S470-Kit						Expert Pro-ISM, 731-ISM	30046253
S470-USP/EP		Pure Pro-ISM, 741-ISM				30046254	
S475-Basic	3	See S470 and S500	See S400, S700 and S500	See S400, S700 and S500	None	30046255	
S479-Kit		See S470 and S900	See S470 and S900	See S470 and S900	Expert Pro-ISM 731-ISM, OptiOx	30092988	
S975-uMix		See S900, S700 and S500	See S900, S700 and S500	See S900, S700 and S500	Expert Pro-ISM 731-ISM, OptiOx and uMix stirrer	30092989	

¹ 0.0–50.0 °C for InLab OptiOx

² 0.0–60.0 °C for InLab 605-ISM

Basic versions include:

Meter, the specified expansion units, uPlace™ electrode holder, semi-transparent cover, operating instructions, installation and quick guide, EasyDirect™ pH PC software, declaration of conformity and test certificate. Electrode is NOT included.

Kit versions include:

As above plus appropriate electrode, buffer sachets and theory guides.

Accessories for SevenExcellence

Expansion Units	Material No.
pH/mV expansion unit	30034472
Conductivity expansion unit	30034473
DO/BOD expansion unit	30034474
pH/Ion expansion unit	30034471
General Accessories	
uPlace electrode holder (included in standard delivery)	30019823
uMix magnetic stirrer	30040000
USB-P25 printer (with USB cable)	30702998
LogStraight™ fingerprint reader	51192107
Barcode scanner	30417466
EasyDirect PC software (included in standard delivery)	30323214
USB A-B cable for EasyDirect PC software (not included with EasyDirect PC software)	51191926
Automation	
InMotion sample changer Flex Base and 100 mL rack bundle (for other configurations see www.mt.com/InMotion)	30094120
Compact stirrer for InMotion including 2 propeller stirrers	51109150
LabX Laboratory Software	
Starter Pack LabX Express edition (for standalone systems, includes 1 SevenExcellence instrument license)	30247987
Starter Pack LabX Server edition (for client server installations, includes 1 SevenExcellence instrument license)	30247988
1 SevenExcellence instrument license	30247989

SevenDirect Straight to the Point

Developed for a wide range of applications, SevenDirect™ benchtop meters combine precise electrochemical measurement technologies with flexibility and innovative design. Their ease of use, data handling options and robustness will delight discerning users.



Advanced

Mastered in No Time



The intuitive user interface of the generous 7-inch touchscreen facilitates the measurement process by avoiding unnecessary steps and focusing on the most important information. On-screen instructions guide the calibration process while the integrated help system provides immediate support.

Tracks Your Records



The instruments support GLP compliance by storing time stamps as well as sample, sensor and user IDs with every measurement. Settings are protected from unwanted changes by a two level user management. Automatic data transfer to PC or printer minimizes transcription errors.

Tough Enough



SevenDirect meters feature a closed connector compartment to prevent corrosion and a replaceable protective cover to keep the instrument safe from dust and spills even with sensors attached (IP54 in-use).

General Accessories for SevenDirect

Description	Material No.
EasyPlace™ electrode arm (included in standard delivery)	30671569
Protective cover (included in standard delivery)	30671529
Power supply 18 W (included in standard delivery)	30671580
Barcode scanner	30417466
Licence for EasyDirect pH software	30323214
USB A-B cable 1.8 m for EasyDirect	51191926
EasyMix magnetic stirrer	30671570
ISM cable 1.2 m, BNC/RCA-MultiPin™	30281896

► www.mt.com/SevenDirect

Meters and Measurement Specifications

	pH	mV	Conductivity	Ions	Temperature
SD20	•	•			•
SD30			•		•
SD50	•	•		•	•
SD23	•	•	•		•
Range	-2.000–20.000	-2,000.0–2,000.0 mV	Conductivity: 0.000 µS/cm – 2,000 mS/cm TDS: 0.00 mg/L – 1,000 g/L Salinity: 0.00–80.00 psu Resistivity: 0.00–100.0 MΩcm	mmol/L, mol/L, mg/L, ppm: 0–999,999, %: 0.000–100.000, pX: -2.000–20.000	Automatic: -5.0–130.0 Manual: -30.0–130.0
Resolution	0.1/0.01/0.001	1/0.1	Auto-range, max. 0.001	mmol/L, mol/L, mg/L, ppm: 0.001, %: 0.0001, pX: 0.1/0.01	0.1 °C
Accuracy	-0.002	±0.1 (-500.0–500.0 mV) ±0.2 (-2,000.0–2,000.0 mV)	0.5% of measured value	mmol/L, mol/L, mg/L, ppm, %: ±0.5% of measured value, pX: ±0.002	±0.1 °C
Calibration methods	Linear, segmented	–	Linear, manual cell constant	Linear, segmented	–
Calibration points	1 to 5	–	1 or 2	1 to 5	–

Description and Order Information for SevenDirect Instruments and Kits¹

Instrument	Kit	Scope of Delivery	Material No.
pH meter SevenDirect SD20	Basic instrument	Instrument, power supply, protective cover, Get Started guide, electrode holder EasyPlace	30671550
	Kit	SD20, plus pH electrode InLab Expert Pro-ISM and 3×2 calibration buffer sachets (pH 4.01, 7.00 and 9.21 OR 10.01)	30671554
	Stirrer Kit	SD20 Kit plus EasyMix magnetic stirrer	30671555
	HA Kit	SD20 Kit, with InLab Routine Pro-ISM instead of InLab Expert Pro-ISM	30671556
	Organic Kit	SD20 Kit, with InLab Science Pro-ISM instead of InLab Expert Pro-ISM	30671557
	Pure H ₂ O Kit	SD20 Kit, with InLab Pure Pro-ISM instead of InLab Expert Pro-ISM	30671558
	Solids Kit	SD20 Kit, with InLab Solids Pro-ISM instead of InLab Expert Pro-ISM	30671559
	Viscous Kit	SD20 Kit, with InLab Viscous Pro-ISM instead of InLab Expert Pro-ISM	30671560
pH/Ion meter SevenDirect SD50	Low Vol Kit	SD20 Kit, with InLab Micro Pro-ISM instead of InLab Expert Pro-ISM	30671561
	Basic Instrument	Instrument, power supply, protective cover, Get Started guide, electrode holder EasyPlace	30671552
	Kit	SD50, plus pH electrode InLab Expert Pro-ISM and 3×2 calibration buffer sachets (pH 4.01, 7.00 and 9.21 OR 10.01)	30671544
	F-ion Kit	SD50, plus perfectION Fluoride sensor	30671545
	HA Kit	SD50 Kit, with InLab Routine Pro-ISM instead of InLab Expert Pro-ISM	30671546
	Organic Kit	SD50 Kit, with InLab Science Pro-ISM instead of InLab Expert Pro-ISM	30671547
	Pure H ₂ O Kit	SD50 Kit, with InLab Pure Pro-ISM instead of InLab Expert Pro-ISM	30671548
	Low Vol Kit	SD50 Kit, with InLab Micro Pro-ISM instead of InLab Expert Pro-ISM	30671549
Cond meter SevenDirect SD30	Basic Instrument	Instrument, power supply, protective cover, Get Started guide, electrode holder EasyPlace	30671551
	Kit	SD30, plus conductivity sensor InLab 731-ISM and 2×2 conductivity standard sachets (1,413 µS/cm and 12.88 mS/cm)	30671562
	Pure H ₂ O Kit	SD30 Kit, with InLab 741-ISM instead of InLab 731-ISM and 2 conductivity standard sachets (84 µS/cm)	30671563
pH/Cond meter SevenDirect SD23	Basic Instrument	Instrument, power supply, protective cover, Get Started guide, electrode holder EasyPlace with holder for up to 3 sensors	30671553
	Kit	SD23, plus pH electrode InLab Expert Pro-ISM, conductivity sensor InLab 731-ISM, 3×2 pH buffer (pH 4.01, 7.00 and 9.21 OR 10.01) sachets and 2×2 conductivity standards (1,413 µS/cm and 12.88 mS/cm)	30671567
	Pure H ₂ O Kit	SD23, plus pH electrode InLab Pure Pro-ISM, conductivity sensor InLab 741-ISM, 3×2 pH buffer (pH 4.01, 7.00 and 9.21 OR 10.01) sachets and 2 conductivity standards (84 µS/cm)	30671568

¹ Profit from our ready-to-use kits which include a sensor and standards for initial calibration (except F-ion Kit)

FiveEasy and FiveEasy Plus

Quality in the Lab for the Budget-Minded

FiveEasy™ and FiveEasy Plus™ benchtop instruments provide quality pH/mV or conductivity measurements with the simple click of a button. Compact in design and featuring various data export opportunities, FiveEasy series instruments are the perfect companion to get reliable measurement data at a reasonable price.

Standard



Easy Operation



Featuring a large, well-structured display for easy viewing, the instrument's intuitive button arrangement and simple menu ensure measurements can be performed in just a few clicks.

Compact Design – Save Space



Thanks to its compact design, little bench space is needed for FiveEasy series meters. The sensor holder is integrated into the housing so that the sensor can be easily removed and stored on the side of the meter after use.

Simple Data Transfer



FiveEasy Plus series meters allow data to be exported directly either to a printer or PC for further processing using its RS232 or USB ports.

► www.mt.com/FiveEasy

Technical Specifications

Specifications	FiveEasy Plus pH FP20	FiveEasy pH F20	FiveEasy Plus Conductivity FP30	FiveEasy Conductivity F30
General Measurement	Measuring range	-2.00–16.00 pH	0.00–14.00 pH	0.00 µS/cm – 500.0 mS/cm (conductivity)
		-2,000–2,000 mV		0.00 mg/L – 300.0 g/L (TDS)
		0.00–42.00 psu (salinity)	–	0.00 mg/L – 200.0 g/L (TDS)
	-5.0–105.0 °C (23.0–221.0 °F)	0.0–100.0 °C (32.0–212.0 °F)	-5.0–105.0 °C (23.0–221.0 °F)	0.0–100 °C (32.0–212.0 °F)
Resolution	0.01/0.1 pH	0.01 pH	Automatic range	
	1 mV		0.01 psu (salinity)	
	0.1 °C		0.1 °C	
Accuracy (instrument)	±0.01 pH		±0.5% of the measured value	
	±1 mV			
	±0.3 °C	±0.5 °C	±0.3 °C	±0.5 °C
Temperature compensation	Automatic or manual		Linear correction factor: 0.00–10.00%/°C Reference temperature: 20 or 25 °C	
Calibration	Max. 5 points	Max. 3 points	1 point	1 point
	Linear/segmented	Linear	–	–
	4 predefined buffer groups		3 predefined standards, manual cell constant input	3 predefined standards

Kits Overview and Order Information

	Meter	Kits	Kits Description	Ideally Suited For	Material No.
pH/mV, ORP	FiveEasy Plus FP20 pH/mV	FP20-Meter	Meter only	Applications that require a specific sensor not included in a kit	30266627
		FP20-Standard	Standard Kit with LE438 sensor	Wide range of general aqueous samples	30266628
		FP20-Bio	Kit with LE410 sensor	Fast results in aqueous samples such as acids, bases etc.	30266629
		FP20-Micro	Kit with LE422 sensor	Small samples in vials and test tubes	30266940
		FP20-TRIS	Kit with LE420 sensor	Demanding, "dirty" samples such as emulsions, oily samples, wastewater, TRIS etc.	30266941
	FiveEasy F20 pH/mV	F20-Meter	Meter only	Applications that require a specific sensor not included in a kit	30266658
		F20-Standard	Standard Kit with LE438 sensor	Wide range of general aqueous samples	30266626
Conductivity	FiveEasy Plus FP30 Conductivity	FP30-Meter	Meter only	Applications that require a specific sensor not included in a kit	30266944
		FP30-Standard	Standard Kit with LE703 sensor	Aqueous samples with mid-to-high conductivity	30266945
	FiveEasy F30 Conductivity	F30-Meter	Meter only	Applications that require a specific sensor not included in a kit	30266942
		F30-Standard	Standard Kit with LE703 sensor	Aqueous samples with mid-to-high conductivity	30266943

Accessories for FiveEasy Plus/FiveEasy

Description	Material No.
FiveEasy Plus/FiveEasy electrode arm (includes sensor holder and pole)	30239139
FiveEasy Plus/FiveEasy electrode arm extension for larger sample beakers	30239140
FiveEasy Plus/FiveEasy rubber cap (2 pcs for electrode arm opening on instrument)	51302952
FiveEasy Plus/FiveEasy side cover	30239146

Non-kit versions include:

Meter, operating manual, power adapter (electrode is NOT included), electrode arm.

Kit versions include:

As above, plus appropriate electrode, buffer sachets and guides.

Seven2Go

Quality Measurement Made Mobile

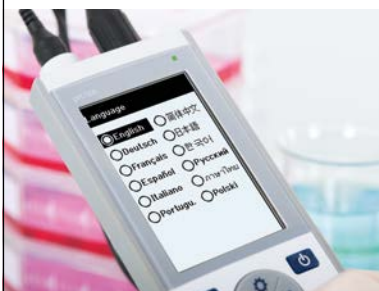
Simple, reliable, attractive and robust. Seven2Go™ portables are engineered to provide you with quality data, fast. Their one-handed operation and durability make them ideally suited for mobile applications in the laboratory, at-line, and outdoors.

Advanced



Seven2Go Pro and Seven2Go

Laboratory: Quality Data Fast



Seven2Go's intuitive menu enables out-of-the-box operation for anyone. Thanks to Intelligent Sensor Management (ISM®), the sensor is automatically reconditioned to save time and reduce errors when changing it out.

At-Line: One-Handed Operation



Faster, more intuitive navigation shortens the time to actual measurement.

Outdoors: Durable Investment



Thanks to its IP67 protection and drop resistance, Seven2Go portables are able to withstand harsh and demanding environments.

► www.mt.com/Seven2Go

Seven2Go

	Seven2Go S2 pH	Seven2Go S3 Conductivity	Seven2Go S4 DO
Material No.	30207949 (meter only)	30207954 (meter only)	30207958 (meter only)
Measuring Range	pH: -2.00-20.00 ±0.01	Cond.: 0.010 µS/cm – 500.0 mS/cm ±0.5%	DO: 0.00-99.99 mg/L ±0.2 mg/L (0-15); ±10% (15-60)
	Rel. mV: -1,999-1,999 mV ±1	TDS: 0.01 mg/L – 300.00 g/L ±0.5%	Pressure: 500-1,100 mbar ±2%
	Temp.: -5.0-105.0 °C ±0.5	Spec. res.: 0.010-1,000 MΩcm ±0.5%	Temp.: 0.0-60.0 °C ±0.2
		Sal.: 0.01-42.00 psu ±0.5%	
Cond. ash: 0.01-2,022.00% ±0.5%			
	Temp.: -5.0-105.0 °C ±0.2 °C		
Sensor Connector	BNC/RCA (cinch) (both IP67)	LTW 7-pin (IP67)	BNC/RCA (cinch) (both IP67)
All Seven2Go	Memory: 200; operating hours: 250-400 h; display: segmented LDC; rubber holster		

Seven2Go Pro

	Seven2Go S8 pH/Ion	Seven2Go S7 Conductivity	Seven2Go S9 DO
Material No.	30207874 (meter only)	30207961 (meter only)	30207970 (meter only)
Measuring Range	pH: -2.000-20.000 ±0.002	Cond.: 0.010 µS/cm – 1,000 mS/cm ±0.5%	DO: 0.00-50.00 mg/L ±0.1 mg/L (0-8); ±0.2 mg/L (8-20); ±10% (20-50)
	Rel. mV: -2,000.0-2,000.0 mV ±0.1	TDS: 0.01 mg/L – 600.00 g/L ±0.5%	Pressure: 500-1,100 mbar ±2%
	Ion: 1.00e ⁻⁹ -9.99 ⁺⁰⁹ ±0.5%	Spec. res.: 0.01-100.00 MΩcm ±0.5%	Temp.: 0.0-5.0 °C ±0.1
	Temp. ATC: -5.0-130.0 °C ±0.2	Sal.: 0.01-42.00 psu ±0.5%	
	Temp. MTC: -30-130 ±0.2	Cond. ash: 0.01-2,022.00% ±0.5%	
	Temp.: -5.0-105.0 °C ±0.1 °C		
Sensor Connector	BNC/RCA (cinch) (both IP67)	LTW 7-pin (IP67)	Mini LTW (IP67)
All Seven2Go Pro	Memory: 2,000 (GLP conform); operating hours: 200-250 h; display: graphic LCD; micro USB connection, 12 languages, EasyDirect pH; rubber holster		

Seven2Go Meter Kits

	Description	Ideally Suited For	Material No.
pH/mV, ORP, Ion	S2-Standard Kit with InLab Expert Go-ISM sensor	Wide range of samples including emulsions and suspensions	30207950
	S2-Field Kit with InLab Expert Go-ISM sensor and uGo™ carrying case	As above, but especially for measurements on the go	30207951
	S2-Food Kit with InLab Solids Go-ISM sensor and uGo carrying case	Solid and semi-solid samples like cheese and meat	30207952
	S2-Light Kit with InLab Versatile Pro sensor	Academic and educational purposes	30207953
	S8-Standard Kit with InLab Expert Go-ISM sensor	Wide range of samples, also suited for emulsions and suspensions	30207975
	S8-Field Kit with InLab Expert Go-ISM sensor and uGo carrying case	As above, but especially for measurements on the go	30207875
	S8-Biotechnology Kit with Routine Go-ISM sensor	Fast results in a wide range of samples including harsh chemicals	30207878
	S8-Fluoride Kit with perfectION Fluoride sensor	Aqueous samples, toothpaste and mouthwash	30207879
Conductivity	S3-Standard Kit with InLab 738-ISM sensor	Aqueous samples with mid-to-high conductivity	30207955
	S3-Field Kit with InLab 738-ISM sensor and uGo carrying case	As above, but especially for measurements on the go	30207956
	S3-Bioethanol Kit with InLab 725 sensor and uGo carrying case	Bioethanol and biofuels	30207957
	S7-Standard Kit with InLab 738-ISM sensor	Aqueous samples with mid-to-high conductivity	30207962
	S7-Field Kit with InLab 738-ISM sensor and uGo carrying case	As above, but especially for measurements on the go	30207963
	S7-USP/EP Kit with InLab 742-ISM sensor and uGo carrying case	Ultra-pure water and low conductivity samples	30207873
Dissolved Oxygen	S4-Standard Kit with InLab 605-ISM sensor	Aqueous samples, alcoholic and non-alcoholic beverages	30207959
	S4-Field Kit with InLab 605-ISM sensor and uGo carrying case	As above, but especially for measurements on the go	30207960
	S9-Standard Kit with InLab OptiOx sensor	Fast results in aqueous samples	30207971
	S9-Field Kit with InLab OptiOx sensor and uGo carrying case	As above, but especially for measurements on the go	30207972
	S9-BOD Kit with InLab OptiOx sensor, BOD adapter and uGo carrying case	BOD measurements in all types of water samples	30207939
Accessories	Robust carry case uGo (IP67)	For measurements on the go or to securely store the instrument	30122300
	EasyDirect pH PC software	Transfer data from Seven2Go Pro to PC (included in Seven2Go Pro delivery)	30323214

SevenGo Duo

Mobile Dual-Channel Measurements

The SevenGo Duo™ combines ease-of-use, quality and reliable measurement functions. The instrument is designed so that a single keystroke triggers calibration, measurement or access to stored results and system settings.

Advanced



SevenGo Duo SG68

Measurements with One Hand



The rotatable electrode clip can be attached on the left, right or both sides of all instruments. It allows measurements to be taken with just one hand and is a convenient, space-saving way of storing electrodes.

An Ergonomic Masterpiece



SevenGo Duo fits neatly into your hand whether you are right- or left-handed. The size of the buttons reflects their importance. SevenGo Duo is so easy to use that you can really save time and increase your productivity.

Status At-A-Glance



The large SevenGo Duo display shows all relevant settings and highlights the most important items. You can read the measurement value and check the state of the electrode at a glance. The results of parallel measurements appear in an alternating fashion on the display.

► www.mt.com/SevenGo

SevenGo Duo SG23 pH/Conductivity

Material No. (meter only): **51302600**

	Measuring Range Channel 1	Measuring Range Channel 2	
pH	0.00–14.00 ±0.01	0.01 µS/cm – 500.00 mS/cm ±0.5%	Conductivity
mV	–1,999–1,999 ±1	0.01 mg/L – 300.00 g/L ±0.5%	TDS
		0.00–100.00 MΩcm ±0.5%	Resistance
		0.00–80.00 ppt ±0.5%	Salinity
Temperature	–5.0–105.0 ±0.5 °C	–5.0–105.0 ±0.2 °C	Temperature
Sensor Connector	BNC, RCA/(cinch) (both IP67)	LTW 7-pin (IP67)	Sensor connector

SevenGo Duo Meter Kits	Remarks	Material No.
SG23-Electrode Kit with InLab Expert Go-ISM and InLab 738-ISM	–	51302601
SG23-Field Kit with InLab Expert Go-ISM and InLab 738-ISM	Includes uGo carry case, pH and conductivity sachets and calibration bottles	51302602
SG23-Field Kit 5 m with InLab Expert Go-ISM and InLab 738-ISM	Includes uGo carry case, pH and conductivity sachets and calibration bottles	51302603

SevenGo Duo pro SG68 pH/Ion/DO

Material No. (meter only): **51302610**

	Measuring Range Channel 1	Measuring Range Channel 2	
pH	–2.000–20.000 ±0.002	0.0–600.0% ±0.5%	Oxygen saturation
mV	–1,999.9–1,999.9 ±0.1	0.00–99.00 mg/L ±0.5%	Oxygen
Ions (mg/L; mol/L; ppm)	1.00e ⁻⁹ –9.99e ⁺⁹ ±0.5%	500–1,100 ±1 mbar	Pressure
Temperature	–5.0–130.0 ±0.2 °C (ATC)	0.0–60.0 ±0.1 °C	Temperature
Sensor Connector	BNC, RCA/(cinch) (both IP67)	BNC, RCA/(cinch) (both IP67)	Sensor connector

SevenGo Duo Meter Kits	Remarks	Material No.
SG68-Electrode Kit with InLab Expert Go-ISM and InLab 605 ISM	–	51302611
SG68-Field Kit with InLab Expert Go-ISM and InLab 605-ISM	Includes uGo carry case, pH buffer sachets and calibration bottles	51302612
SG68-Field Kit 5 m with InLab Expert Go-ISM and InLab 605 ISM	Includes uGo carry case, pH buffer sachets, 5 m cables and calibration bottles	51302613

SevenGo Duo pro SG78 pH/Ion/Conductivity

Material No. (meter only): **51302620**

	Measuring Range Channel 1	Measuring Range Channel 2	
pH	–2.000–20.000 ±0.002	0.01 µS/cm – 1,000.00 mS/cm ±0.5%	Conductivity
mV	–1,999.9–1,999.9 ±0.1	0.01 mg/L – 600.00 g/L ±0.5%	TDS
Ions (mg/L; mol/L; ppm)	1.00e ⁻⁹ –9.99e ⁺⁹ ±0.5%	0.00–100.00 MΩcm ±0.5%	Resistivity
		0.00–80.00 ppt ±0.5%	Salinity
Temperature	–5.0–130.0 ±0.2 °C (ATC)	–5.0 (–30.0)–130.0 ±0.2 °C ATC (MTC)	Temperature
Sensor Connector	BNC, RCA/(cinch) (both IP67)	LTW 7-pin (IP67)	Sensor connector

SevenGo Duo Meter Kits	Remarks	Material No.
SG78-Electrode Kit with InLab Expert Go-ISM and InLab 738-ISM	–	51302621
SG78-Field Kit with InLab Expert Go-ISM and InLab 738-ISM	Includes uGo carry case, pH and conductivity sachets and calibration bottles	51302622
SG78-Field Kit 5 m with InLab Expert Go-ISM and InLab 738-ISM	Includes uGo carry case, 5 m cables, pH and conductivity sachets and calibration bottles	51302623
SG78-Field Kit USP/EP with InLab Expert Go-ISM and InLab 742-ISM	Includes pH and conductivity sachets and calibration bottles	51302625

SevenGo Duo pro SG98 pH/Ion/optical DO

Material No. (meter only): **51302661**

	Measuring Range Channel 1	Measuring Range Channel 2	
pH	–2.000–20.000 ±0.002	0.0–500.0% ±10%	Oxygen saturation
mV	–1,999.9–1,999.9 ±0.1	0.00 mg/L – 50.00 mg/L ±0.1 (0–8); ±0.2 (8–20); ±10% (20–50)	Oxygen
Ions (mg/L; mol/L; ppm)	1.00e ⁻⁹ –9.99e ⁺⁹ ±0.5%	500–1,100 ±1 mbar	Pressure
Temperature	–5.0–130.0 ±0.2 °C (ATC)	0.0–50.0 ±0.1 °C	Temperature
Sensor Connector	BNC, RCA/(cinch) (both IP67)	Mini LTW 7-pin (IP67)	Sensor connector

SevenGo Duo Meter Kits	Remarks	Material No.
SG98-Electrode Kit with InLab Expert Go-ISM and InLab OptiOx	–	51302662
SG98-Field Kit with InLab Expert Go-ISM and InLab OptiOx	Includes uGo carry case, pH buffer sachets and calibration bottles	51302663
SG98-Field Kit 5 m with InLab Expert Go-ISM and InLab OptiOx	Includes uGo carry case, pH buffer sachets, 5 m cables and calibration bottles	51302664

FiveGo

Quality on the Go for the Budget-Minded

FiveGo™ portable instruments provide quality pH/mV, conductivity or dissolved oxygen measurements with the simple click of a button whether you are working in the lab, at-line or outdoors. A robust and waterproof design makes FiveGo instruments the perfect companion for reliable measurement data in wet conditions.

Standard



Robust Design



A robust and waterproof design makes FiveGo instruments a perfect companion to get reliable measurement data at a reasonable price, even in harsh conditions.

Ergonomic Design – Comfortable Handling



Thanks to its ergonomic design, working with FiveGo portables is a comfortable experience for both big and small hands. The foldable foot stand provides optimal viewing while situated on a lab bench.

Intuitive Operation – Measurement Made Easy



Featuring a large, well-structured display for easy viewing, the instrument's intuitive button arrangement and simple menu ensure measurements can be performed in just a few clicks.

www.mt.com/FiveGo

Technical Specifications

Specifications		FiveGo pH F2	FiveGo Conductivity F3	FiveGo DO F4
General Measurement	Measuring range	0.00–14.00 pH	0.00 µS/cm – 200.0 mS/cm (conductivity)	0.0–400.0%
		–1,999–1,999 mV	0.00 mg/L – 200.0 g/L (TDS)	0.00–45.00 mg/L 0.00–45.00 ppm
		0.0–100.0 °C (32.0–212.0 °F)	0.0–100.0 °C (32.0–212.0 °F)	0.0–50.0 °C (32.0–122.0 °F)
	Resolution	0.01 pH	Automatic range	0.1%
		1 mV		0.01 mg/L
		0.1 °C		0.01 ppm 0.1 °C
	Accuracy (instrument)	±0.01 pH	±0.5% of the measured value	±1% of the measured value
		±1 mV		
		±0.5 °C		
	Temperature compensation	Automatic or manual	Automatic or manual Linear correction factor: 0.00–10.00%/°C Reference temperatures: 20 or 25 °C	Automatic or manual
	Calibration	Max. to 3 points	1 point	Max. to 2 points
		4 predefined buffer groups	3 predefined standards	100% and 0%

Kits Overview and Order Information

	Meter	Kits	Kits Description	Ideally Suited For	Material No.
pH/mV, ORP	FiveGo F2 pH/mV	F2-Meter	Meter only	Applications that require a specific sensor not included in a kit	30266946
		F2-Standard	Standard Kit with LE438 IP67 sensor	Wide range of general aqueous samples	30266889
		F2-Food	Kit with LE427 IP67 sensor and carrying case	Solid samples such as meat, fruit, cheese, and more	30266881
		F2-Field	Kit with LE438 IP67 sensor and carrying case	Same as F2-Standard, but especially for measurements on the go	30266882
Conductivity	FiveGo F3 Conductivity	F3-Meter	Meter only	Applications that require a specific sensor not included in a kit	30266883
		F3-Standard	Standard Kit with LE703 IP67 sensor	Aqueous samples with mid-to-high conductivity	30266888
		F3-Field	Standard Kit with LE703 IP67 sensor and carrying case	Same as F3-Standard, but especially for measurements on the go	30266887
DO	FiveGo F4 DO	F4-Meter	Meter only	Sensor not included	30266884
		F4-Standard	Kit with LE621 IP67 sensor	All aqueous samples	30266885
		F4-Field	Kit with LE621 IP67 sensor and carrying case	Same as F4-Standard, but especially for measurements on the go	30266886

Accessories for FiveGo

Description	Material No.
FiveGo carrying case (4 sample bottles included)	30239142
FiveGo sample bottles (set of 4 pcs)	30239143
FiveGo electrode clip (1 pc) and electrode clip covers (2 pcs)	30239144
FiveGo wrist strap	30122304

Non-kit versions include:

Meter, operating manual, batteries, electrode clip, wrist strap (electrode is NOT included).

Kit versions include:

As above, plus appropriate electrode, carrying case incl. 4 sample bottles (field kits only), buffer sachets and guides.

InLab Sensors

The Right Choice for Your Application

Accurate measurements begin with the right analytical sensor. We offer a comprehensive range of laboratory sensors for pH, conductivity, ion, dissolved oxygen and ORP measurements. METTLER TOLEDO combines a history of trusted technologies with innovation for high accuracy and performance in any laboratory or field application.

Simplify your sensor selection
www.mt.com/Electrode-Guide

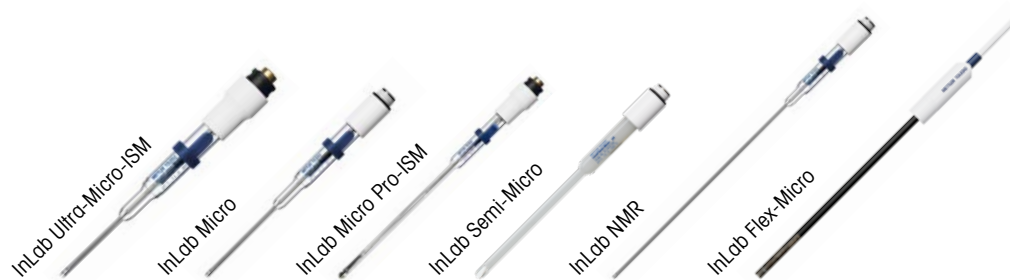
pH General-Purpose Electrodes



Name	Features/Description	Connector	Material No.
Routine Electrodes	Combined pH Glass Electrode with a Ceramic Diaphragm for Fast Results; TRIS Compatible		
InLab™ Routine	Shaft length: 120 mm	S7	51343050
InLab Routine Pro	With temperature probe (NTC 30 kΩ)	MultiPin	51343054
InLab Routine Pt1000	With temperature probe (Pt1000)	MultiPin	51343056
InLab Routine Pro-ISM	With temperature probe (NTC 30 kΩ) and ISM	MultiPin	51344055
Expert Electrodes	Combined pH Electrode with a PEEK Shaft; Clog-Free Open Junction; Maintenance-Free		
InLab Expert	Shaft length: 120 mm	S7	51343100
InLab Expert Pro	With temperature probe (NTC 30 kΩ) and 1.2 m fixed cable	BNC/RCA	51343101
InLab Expert Pro-ISM	With temperature probe (NTC 30 kΩ), fixed cable 1.2 m and ISM	BNC/RCA	30014096
InLab Expert Pro-2m-ISM	With temperature probe (NTC 30 kΩ), 2 m fixed cable and ISM	BNC/RCA	51343102
InLab Expert DIN	With temperature probe (Pt1000) and fixed cable 1.2 m	DIN/4 mm banana	51343103
InLab Expert NTC30	With temperature probe (NTC 30 kΩ)	MultiPin	51343104
InLab Expert Pt1000	With temperature probe (Pt1000)	MultiPin	51343105
Combined General Purpose Electrodes			
InLab Science	Movable glass sleeve; glass shaft	S7	51343070
InLab Science Pro-ISM	Movable glass sleeve; with temperature probe (NTC 30 kΩ) and ISM	MultiPin	51343072
InLab Max Pro-ISM	Immovable glass sleeve; with temperature probe (NTC 30 kΩ) and ISM	MultiPin	30248830
InLab Power	Pressurized reference system Steady Force™; glass shaft	S7	51343110
InLab Power Pro-ISM	With temperature probe (NTC 30 kΩ); Steady Force and ISM; shaft length: 170 mm	MultiPin	51344211
InLab Easy	Gel-filled; polysulfone shaft	S7	51343010
InLab Easy BNC	Gel-filled; polysulfone shaft; 1.2 m fixed cable	BNC	51343011
InLab Versatile Pro	Liquid-filled; polysulfone shaft; with temperature probe (NTC 30 kΩ) and 1.2 m fixed cable	BNC/RCA	51343031

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pH Specialist: Micro and Long Electrodes



Name	Features/Description	Connector	Material No.
Combined Micro Electrodes for Small Volumes			
InLab Ultra-Micro-ISM	3 mm shaft diameter; min. sample volume 15 µL; with ISM	MultiPin	30244732
InLab Micro	3 mm shaft diameter; min. sample volume 45 µL	S7	51343160
InLab Micro Pro-ISM	5 mm shaft diameter; min. sample volume 100 µL; with temperature probe (NTC 30 kΩ) and ISM	MultiPin	51344163
InLab Semi-Micro	6 mm shaft diameter; min. sample volume 100 µL; maintenance-free	S7	51343165
InLab Semi-Micro-L	6 mm shaft diameter; min. sample volume 100 µL; shaft length: 230 mm	S7	51343161
InLab Flex-Micro	6 mm flexible shaft; min. sample volume 500 µL; shaft length: 180 mm; 1 m fixed cable	BNC	51343164
InLab NMR	3 mm shaft diameter; min. sample volume 45 µL; shaft length: 200 mm	S7	59904572
Long Combined Glass Electrodes for Deep Vessels; Ceramic Diaphragm			
InLab Reach 225	Shaft length: 225 mm	S7	30244733
InLab Reach Pro-225	Shaft length: 225 mm; with temperature probe (NTC 30 kΩ)	MultiPin	30248826
InLab Reach Pt1000-225	Shaft length: 225 mm; with temperature probe (Pt1000)	MultiPin	30248828
InLab Reach 425	Shaft length: 425 mm	S7	30248120
InLab Reach Pro-425	Shaft length: 425 mm; with temperature probe (NTC 30 kΩ)	MultiPin	51343061
InLab Reach Pt1000-425	Shaft length: 425 mm; with temperature probe (Pt1000)	MultiPin	51343062

pH Specialist: Specific Applications



Name	Features/Description	Connector	Material No.
Electrodes for Specific Applications			
InLab Solids	Puncture electrode with spear tip; maintenance-free	S7	51343153
InLab Solids Pro-ISM	Puncture electrode with temperature probe (NTC 30 kΩ) and ISM; maintenance-free	MultiPin	51343155
InLab Viscous	Pressurized reference system Steady Force; special 6 mm thin tip	S7	51343150
InLab Viscous Pro-ISM	With temperature probe (NTC 30 kΩ), Steady Force and ISM; special 6 mm thin tip	MultiPin	51343151
InLab Dairy	Triple ceramic junction	S7	59904591
InLab Surface	Flat-ended membrane; for surfaces like paper, agar plates, skin	S7	51343157
InLab Surface Pro-ISM	Flat-ended membrane; shaft with temperature probe (NTC 30 kΩ) and ISM	MultiPin	30249570
InLab Cool	Temperature range: -30–80 °C	S7	51343174
InLab Cool Pro-ISM	Temperature range: -30–80 °C with temperature probe (NTC 30 kΩ) and ISM	MultiPin	30247850
InLab Pure	For pure water	S7	51343170
InLab Pure Pro-ISM	With bridge electrolyte for ultra-pure water; with temperature probe (NTC 30 kΩ) and ISM	MultiPin	51343172
InLab Hydrofluoric	Special HF resistant membrane	S7	51343176

pH Half-Cells and Reference Electrodes

Name	Features/Description	BNC Cable	Cable for Titrator	Connector	Material No.
InLab Mono	pH half-cell	30281915	089601	S7	51343195
InLab Mono Plus	pH half-cell	30281915	089601	S7	51343196
InLab Reference	Reference electrode	30281923	30281922	S7	51343190
InLab Reference Plus	Reference electrode with PTFE sleeve	30281923	30281922	S7	51343191
InLab Reference Flow	Reference electrode with triple ceramic diaphragm	30281923	30281922	S7	51343192

ORP/Redox Electrodes

Name	Features/Description	Connector	Material No.
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ORP/Redox Electrodes

InLab Redox	Combined glass electrode with a platinum ring	S7	51343200
InLab Redox-L	Combined glass electrode with a platinum ring; shaft length: 170 mm	S7	51343202
InLab Redox Flow	Combined glass electrode with a platinum ring and a movable sleeve-junction	S7	51343201
InLab Redox Micro	Combined glass electrode with a platinum ring; shaft diameter: 6 mm	S7	51343203
InLab Redox Au	Combined glass electrode with a gold ring	S7	51343204
InLab Redox Ag	Combined glass electrode with a silver ring; KNO ₃ electrolyte	S7	51343205

Temperature Sensors

Name	Features/Description	Connector	Material No.
InLab NTC 30 kΩ	Temperature sensor in glass shaft	S7	51343310
InLab Pt1000	Temperature sensor in glass shaft	S7	51343312
NTC 30 kΩ	Temperature sensor in stainless steel	RCA	51300164

Conductivity Probes

Name	Types	Measuring Range	Cell Constant	Connector	Material No.
InLab 731	4 graphite poles; epoxy shaft	10 μS/cm – 1,000 mS/cm	0.57 cm ⁻¹	Mini DIN	51344020
InLab 731-ISM	4 graphite poles; epoxy shaft; with ISM	10 μS/cm – 1,000 mS/cm	0.57 cm ⁻¹	Mini DIN	30014092
InLab 741	2 steel poles; stainless-steel shaft	0.001 μS/cm – 500 μS/cm	0.105 cm ⁻¹	Mini DIN	51344024
InLab 741-ISM	2 steel poles; stainless-steel shaft; ISM	0.001 μS/cm – 500 μS/cm	0.105 cm ⁻¹	Mini DIN	30014094
InLab Trace-ISM	2 titanium poles; epoxy shaft	0.0001 μS/cm – 1,000 μS/cm	0.01 cm ⁻¹	Mini LTW	30014097
InLab 710	4 platinum poles; glass shaft	10 μS/cm – 500 mS/cm	0.80 cm ⁻¹	Mini DIN	51302256
InLab 720	2 platinum poles; glass shaft	0.1 μS/cm – 500 μS/cm	0.06 cm ⁻¹	Mini DIN	51302255
InLab 725	2 platinum poles; glass shaft	0.1 μS/cm – 500 μS/cm	0.10 cm ⁻¹	Mini DIN	30014160
InLab 751-4	2 platinum poles; shaft diameter: 4 mm	0.01 mS/cm – 100 mS/cm	1.0 cm ⁻¹	Mini DIN	51344030
InLab 752-6	2 platinum poles; shaft diameter: 6 mm	0.01 mS/cm – 100 mS/cm	1.0 cm ⁻¹	Mini DIN	51344031

Cables

Connection	Plug	Length	Material No.
MultiPin	BNC/RCA (cinch)	1.2 m	30281896
MultiPin	BNC/RCA (cinch)	3.0 m	30281897
MultiPin	BNC/RCA (cinch)	5.0 m	30281898
MultiPin	BNC/RCA (cinch) IP67	1.8 m	30281913
MultiPin	BNC/1 × 4 mm	1.2 m	30281899
MultiPin	DIN 19262/RCA	1.2 m	30281910
MultiPin	DIN 19262/1 × 4 mm	1.2 m	30281911
MultiPin	Lemo 00/2 × 4 mm	1.2 m	30281912
S7	BNC	1.2 m	30281915
S7	BNC	3.0 m	30281916
S7	BNC	5.0 m	30281917
S7	BNC IP67	1.2 m	30281918
S7	DIN 19262	1.2 m	30281919
S7	DIN 19262	3.0 m	30281920
S7	DIN 19262	5.0 m	30281921
S7	Lemo 00	1.2 m	30281925
S7	4 mm banana	1.2 m	30281922
S7	2 mm banana	1.2 m	30281923
S7	RCA (cinch)	1.2 m	30281924



MultiPin connection

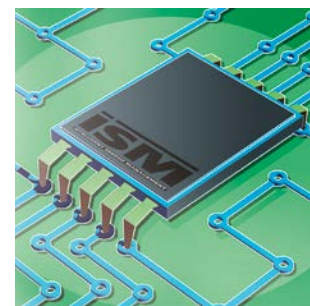


S7 connection



ISM® – Intelligent Sensor Management

- Secure and efficient**
 Calibration data and sensor ID are automatically transferred to the meter
- Always up-to-date**
 New calibration data is stored in the sensor
- Backup certificate safely stored**
 Initial factory calibration is stored in the sensor
- Conclusive calibration history**
 The last 5 calibrations are stored in the sensor
- Easy lifetime monitoring**
 The maximum temperature that the sensor has been exposed to is monitored automatically



IP67 Sensors for Portable Meters

Name	Feature/Description	Cable Length	Connector	Material No.
InLab™ Sensors for pH Portables				
InLab Expert Go-ISM	Combined pH electrode with a PEEK shaft; clog-free open junction; maintenance-free; with a temperature probe (NTC 30 kΩ), fixed cable and ISM	1.8 m	BNC/RCA	51344102
InLab Expert Go-ISM-5 m		5 m	BNC/RCA	51344103
InLab Expert Go-ISM-10 m		10 m	BNC/RCA	51344104
InLab Expert Go	As Expert Go-ISM but without ISM	1.8 m	BNC/RCA	51340288
InLab Routine Go-ISM	Combined glass electrode with temperature probe (NTC 30 kΩ) and ISM	1.8 m	BNC/RCA	30248832
InLab Solids Go-ISM	Puncture electrode with temperature probe (NTC 30 kΩ); maintenance-free	1.8 m	BNC/RCA	51343156
InLab Water Go	For weak surface water, polysulfone shaft with temperature probe (NTC 30 kΩ)		BNC/RCA	30253098
Conductivity				
InLab 738-ISM	Type: 4 graphite poles; epoxy shaft; with fixed cable and ISM Measuring range: 10 μS/cm – 1,000 mS/cm; cell constant: 0.57 cm ⁻¹	1.8 m	LTW	51344110
InLab 738-ISM-5 m		5 m	LTW	51344112
InLab 738-ISM-10 m		10 m	LTW	51344114
InLab 738	As InLab 738-ISM but without ISM	1.8 m	LTW	51344120
InLab 742-ISM	Type: 2 steel poles; stainless-steel shaft; with fixed cable and ISM Measuring range: 0.001 μS/cm – 500 μS/cm; cell constant: 105 cm ⁻¹	1.8 m	LTW	51344116
InLab 742-ISM-5 m		5 m	LTW	51344118
InLab 742		As InLab 742-ISM but without ISM	1.8 m	LTW
Dissolved Oxygen¹				
InLab 605-ISM	Polarographic DO sensor with temperature probe (NTC 22 kΩ), fixed cable and ISM; shaft material: PPS	1.8 m	BNC/RCA	51344611
InLab 605-ISM-5 m		5 m	BNC/RCA	51344612
InLab 605-ISM-10 m		10 m	BNC/RCA	51344613
InLab 605	As InLab 605-ISM but without ISM	1.8 m	BNC/RCA	51340291
InLab OptiOx	Optical DO sensor with temperature probe, fixed cable and ISM; shaft material: PC/ABS	1.8 m	Mini LTW	51344621
InLab OptiOx 5 m		5 m	Mini LTW	51344622
InLab OptiOx 10 m		10 m	Mini LTW	51344623

¹ The DO sensors can also be used with SevenExcellence



Combined ISE: perfectionION Series

Ion	Name	Reference Electrolyte	Membrane Module	ISA Solution	Connector	Material No.
Calcium	Combined Ca ²⁺	Ion Electrolyte A 51344750	51344850	51344761	1.2 m; BNC	51344703
					1.2 m; Lemo	51344803
Chloride	Combined Cl ⁻	Ion Electrolyte B 51344751	N/A	51344760	1.2 m; BNC	51344706
					1.2 m; Lemo	51344806
Copper	Combined Cu ²⁺	Ion Electrolyte D 51344753	N/A	51344760	1.2 m; BNC	51344712
					1.2 m; Lemo	51344812
Cyanide	Combined CN ⁻	Ion Electrolyte B 51344751	N/A	10 mol/L NaOH	1.2 m; BNC	51344709
					1.2 m; Lemo	51344809
Fluoride	Combined F ⁻	Ion Electrolyte A 51344750	N/A	51344765	1.2 m; BNC	51344715
					1.2 m; Lemo	51344815
Iodide	Combined I ⁻	Ion Electrolyte D 51344753	N/A	51344760	1.2 m; BNC	51344718
					1.2 m; Lemo	51344818
Lead	Combined Pb ²⁺	Ion Electrolyte B 51344751	N/A	5 mol/L NaClO ₄	1.2 m; BNC	51344730
					1.2 m; Lemo	51344830
Nitrate	Combined NO ₃ ⁻	Ion Electrolyte F 51344755	51344852	51344763	1.2 m; BNC	51344727
					1.2 m; Lemo	51344827
Potassium	Combined K ⁺	Ion Electrolyte E 51344754	51344851	51344762	1.2 m; BNC	51344721
					1.2 m; Lemo	51344821
Silver/Sulphide	Combined Ag ⁺ /S ²⁻	Ion Electrolyte B 51344751	N/A	Ag ⁺ : 51344760 S ²⁻ : see manual	1.2 m; BNC	51344700
					1.2 m; Lemo	51344800
Sodium	Combined Na ⁺	3 mol/KCl 51350072	N/A	NH ₄ Cl/NH ₄ OH	S7	51344724



DX sensors

ISE Half-Cells: DX Series

Ion	Name	Membrane Kit	Filling Solution	ISA Solution	Material No.
Ammonium	DX218-NH ₄ ⁺	51340012	51340035	0.5 mol/L MgSO ₄	51340900
Barium	DX337-Ba ⁺	51107688	51107892	1 mol/L Tris ₂ HCl	51107674
Bromide	DX280-Br ⁻	51340006	51340029	1 mol/L KNO ₃	51340300
Cadmium	DX312-Cd ²⁺	51107686	51107891	1 mol/L KNO ₃	51107672
Calcium	DX240-Ca ²⁺	51340009	51340032	4 mol/L KCl	51340600
Chloride	DX235-Cl ⁻	51340007	51340030	1 mol/L KNO ₃	51340400
Copper	DX264-Cu ²⁺	51107692	51107889	1 mol/L KNO ₃	51107678
Cyanide	DX226-CN ⁻	51107695	51107893	10 mol/L NaOH	51107681
Fluoride	DX219-F ⁻	51340008	51340031	TISAB III	51340500
Iodide	DX327-I ⁻	51107694	51107898	1 mol/L KNO ₃	51107680
Lead	DX407-Pb ²⁺	51107874	51107875	1 mol/L KNO ₃	51107873
Lithium	DX207-Li ⁺	51107687	51107881	0.5 mol/L MgSO ₄	51107673
Nitrate	DX262-NO ₃ ⁻	51340011	51340034	0.5 mol/L MgSO ₄	51340800
Potassium	DX239-K ⁺	51340010	51340033	0.5 mol/L MgSO ₄	51340700
Sodium	DX223-Na ⁺	N/A	N/A	NH ₄ Cl/NH ₄ OH	51340263
Sulphide (Silver)	DX232-S ²⁻	51107689	51107894	10 mol/L NaOH	51107675
Thiocyanate	DX258-SCN ⁻	51107871	51107872	1 mol/L KNO ₃	51107870
NH ₃ GSE	Ammonia	51340013	51340036	N/A	51341000

Cables are sold separately and are not included

Cable for pH/Ion meter: 30281915

Cable for titrator: 089601

LE438 sensor



LE409 sensor



LightEdition Sensors

LightEdition (LE) sensors are tailor-made for high performance-to-price ratio. The offering includes sensors for all common applications. These sensors are the perfect match for Five and Education line meters.

LE407 sensor



LE420 sensor



LE427 sensor



Name	Type	Features/Description	Connector	Material No.
LE438	pH	Gel-filled plastic electrode with integrated temperature sensor for laboratory use; low-maintenance	BNC/cinch	51340242
LE438 IP67	pH		BNC/cinch IP67	30247153
LE407	pH	Gel-filled plastic pH electrode with gel electrolyte, suitable for simple applications and easy samples such as water; low-maintenance	BNC	51340330
LE409	pH	Glass pH electrode with liquid electrolyte for simple and rapid measurements in the laboratory, aqueous samples such as acids and bases; refillable electrolyte	BNC	51340331
LE410	pH	As LE409 but with integrated temperature probe	BNC/cinch	51340348
LE420	pH	Glass electrode with movable PTFE sleeve junction for demanding, "dirty" samples such as wastewater, emulsions (e.g. milk), oily samples	BNC	51340332
LE422	pH	Micro pH electrode with gel electrolyte, shaft diameter: 4.3 mm	BNC	30089747
LE427	pH	The spear tip design makes it ideal for solid samples such as meat, fruit, cheese, soil and many more; low-maintenance	BNC	51340333
LE427 IP67	pH		BNC IP67	30259840
LE501	ORP	Glass ORP electrode for lab use	BNC	51340338
LE510	ORP	Robust plastic ORP electrode for field use (e.g. swimming pools)	BNC	51340339
LE703	Conductivity	Robust conductivity probe for medium-to-high conductivities (10 μS/cm – 200 mS/cm)	Mini-DIN	51340335
LE740	Conductivity	Robust conductivity probe from low-to-medium conductivities (0.01 μS/cm – 500 μS/cm)	Mini-DIN	51340336
LE621	DO	Galvanic dissolved oxygen sensor, with integrated temperature sensor, with 1 m cable	BNC/cinch	51340403
LE621 IP67	DO	Galvanic dissolved oxygen sensor, with integrated temperature sensor, with 2 m cable	BNC/cinch IP67	30266975
NTC 30 kOhm	Temperature	Separate temperature sensor	Cinch	51300164

Calibration and Maintenance Solutions

Ensure Accuracy and Electrode Health

The determination of pH, conductivity, ion concentration, redox potential and dissolved oxygen are common analyses in most laboratories. Measurement accuracy is highly dependent on the quality and operation of the solutions used for sensor calibration and maintenance.

Find helpful calibration tips in our calibration video

► www.mt.com/pHLab_Calibration

Find your test certificate and safety data sheet (SDS)

► www.mt.com/Buffer

pH Buffer Solutions



pH measurements are only as accurate as the buffer solutions used for calibration purposes. We offer a selection of quality pH buffers to match your specific requirements. Our sachets guarantee fresh solution for every calibration and maximize ease of use.

Maintenance Solutions



Being the main actor of the measurement, the electrode requires special care and attention. We offer electrolytes, storage and cleaning solutions that will ensure that your electrode remains ready for whatever task is due.

Conductivity Standards



Depending on the type of sensor, conductivity standards are used for calibration or verification. Low-conductivity standards have a limited lifespan and require special handling. They are intended for verification purposes. Our sachets guarantee fresh solution for every calibration and maximize ease of use.

► www.mt.com/BuffersAndMore

pH Buffers

	pH Value at 25 °C	Material No. 250 mL	Material No. 6 × 250 mL	Material No. 30 × 20 mL
Technical pH Buffer Solutions	2.00	51350002	51350016	30111134
	4.01	51350004	51350018	51302069
	5.00	30464188	–	–
	7.00	51350006	51350020	51302047
	8.00	30464189	–	–
	9.21	51350008	51350022	51302070
	10.00	51350010	51350024	–
	10.01	–	–	51302079
	11.00	51350012	51350026	30111135
	Rainbow bottles I (3 × 2 bottles 250 mL 4.01/7.00/9.21)	–	30095312	–
	Rainbow bottles II (3 × 2 bottles 250 mL 4.01/7.00/10.00)	–	30095313	–
	Rainbow sachets I (3 × 10 sachets 20 mL 4.01/7.00/9.21)	–	–	51302068
Rainbow sachets II (3 × 10 sachets 20 mL 4.01/7.00/10.01)	–	–	51302080	
NIST/DIN pH Buffer Solutions	1.679	30458274	–	30667828
	4.006	51350052	–	30111136
	6.865	51350054	–	30111137
	9.180	51350056	–	30111138
	10.012	51350058	–	30111139
	12.454	30464127	–	–
Certified pH Buffer Solutions	4.01	51350032	51350042	–
	7.00	51350034	51350044	–
	9.21	51350036	51350046	–
	10.00	51350038	51350048	–

Electrolytes for Reference Electrodes

	Material No. 25 mL	Material No. 250 mL	Material No. 6 × 250 mL	Material No. 6 × 30 mL
KCl solution 3 mol/L for ARGENTHAL™ reference systems	51343180	51350072	51350080	–
KCl solution 3 mol/L, AgCl saturated, for Ag/AgCl reference systems	51343184	51350074	51350082	–
KCl solution 1 mol/L bridge electrolyte	51343181	–	–	–
KNO ₃ solution 1 mol/L bridge electrolyte	51343182	51350078	51350086	–
FRISCOLYT-B™, for measurement at low temperature and for media with organic compounds (oil, proteins etc.)	51343185	51350076	51350084	–
LiCl solution 1 mol/L in ethanol, for measurement in non-aqueous media	–	–	–	51350088

Maintenance Solutions

	Material No. 250 mL	Material No. 6 × 250 mL	Material No. 25 mL
Pepsin-HCl for cleaning junctions with protein contamination; treatment time about 1 h	51350100	30045061	–
Thiourea solution for cleaning junctions with silver sulfide contamination; treatment until discoloration	51350102	30045062	–
Reactivation solution for regeneration of glass electrodes; treatment time about 1 min	–	–	51350104
InLab storage solution for pH and ORP electrodes	30111142	–	–
pH All-in-One Kit I (pH buffer 4.01/7.00/9.21, 3 mol/L KCl, pepsin solution, storage solution)	–	30095314	–
pH All-in-One Kit II (pH buffer 4.01/7.00/10.00, 3 mol/L KCl, pepsin solution, storage solution)	–	30095315	–

Conductivity Standards

	Material No. 250 mL	Material No. 6 × 250 mL	Material No. 10 × 20 mL	Material No. 30 × 20 mL
1.3 µS/cm (single-use check solution) ¹	30090847	–	–	–
5 µS/cm ²	30094617	–	–	–
10 µS/cm	51300169	–	30111141	–
84 µS/cm	51302153	–	30111140	–
500 µS/cm	51300170	–	–	–
1,413 µS/cm	51350092	51350096	–	51302049
12.88 mS/cm	51350094	51350098	–	51302050

¹ Maximum storage: 1 month

² Maximum storage: 3 months



Solutions for Ion-Selective Electrodes



Measuring with ion-selective electrodes (ISE) is the easiest and most affordable way to determine ion concentration. However, ISEs require careful handling and the use of the correct solutions. METTLER TOLEDO offers a broad portfolio to ensure successful ion measurements.

Redox Buffer Solutions



Redox buffer solutions are used for verification of all common redox sensors. They are not used for calibration purposes. Similar to other solutions they are temperature dependent. A table on every bottle label indicates redox values at different temperatures.

Zero Oxygen Tablets



Zero oxygen tablets make the preparation of a solution with zero oxygen content very easy. This solution can be used for calibration, verification or conditioning purposes if measurements are performed at low dissolved oxygen levels.



Solutions for perfectION Combined ISE

Reference Electrolyte Solutions	Material No. 5 × 60 mL
Ion Electrolyte A (calcium, fluoride, sulfide)	51344750
Ion Electrolyte B (chloride, cyanide, lead, silver/sulfide)	51344751
Ion Electrolyte C (silver)	51344752
Ion Electrolyte D (copper, iodide)	51344753
Ion Electrolyte E (potassium)	51344754
Ion Electrolyte F (nitrate)	51344755

ISA Solutions	Material No. 475 mL	Material No. 3,790 mL
ISA solid state ISE (chloride, copper, iodide, silver)	51344760	–
Calcium ISA	51344761	–
Potassium ISA	51344762	–
Nitrate ISA	51344763	–
Nitrate ISS (for suppressing interference)	51344764	–
Fluoride TISAB II with CDTA	–	51344765
Fluoride TISAB III with CDTA (concentrate)	51344766	–

Redox Buffer Solutions

E (Ag/AgCl) 25 °C	Material No. 250 mL	Material No. 6 × 250 mL	Material No. 6 × 30 mL
220 mV, pH 7 (U _H = 427 mV)	51350060	51350062	–
468 mV, pH 0.1 (U _H = 675 mV)	–	–	51350064

DO Accessories	Material No.
Zero oxygen tablets (20 pcs)	51300140

Solutions for DX Series ISE Half-Cells

Bridge Electrolyte	Material No. 25 mL	Material No. 250 mL	Material No. 6 × 250 mL
1 mol/L KNO ₃	51343182	51350078	51350086
3 mol/L KCl	51343180	51350072	51350080
1 mol/L KCl	51343181	–	–

ISA Solutions

ISA Solutions	Material No.	Material No.	Material No.
TISAB 3, for fluoride determinations	–	51350106	–
0.9 mol/L Al ₂ (SO ₄) ₃	–	51350108	–

Ion Calibration Standards

	Material No. 500 mL 1,000 mg/L	Material No. 500 mL 100 mg/L	Material No. 500 mL 10 mg/L
Silver ISE standard solution	51344770	–	–
Calcium ISE standard solution	51344771	30090855	30090856
Chloride ISE standard solution	51344772	30090853	30090854
Cyanide ISE standard solution	51344773	–	–
Copper ISE standard solution	51344774	–	–
Fluoride ISE standard solution	51344775	30090851	30090852
Iodide ISE standard solution	51344776	–	–
Potassium ISE standard solution	51344777	–	–
Sodium ISE standard solution	51344778	30090857	30090858
Ammonium ISE standard solution	30090859	30090860	–
Nitrate ISE standard solution	51344779	–	–
Lead ISE standard solution	51344780	–	–
Sulfide ISE standard solution	51344781	–	–

Performance and Quality

Keep Your Equipment Fit for Purpose

Comprehensive service offerings from METTLER TOLEDO help you maximize performance and maintain the uptime of your pH measuring systems.

- Be free of compliance concerns during quality audits with our professional installation and qualification services.
- Calibration and Extended Care ensure excellent performance over the life cycle of the device.
- To ensure accuracy over time, consider calibrating your sensors with our certified standards and replacing them in recommended intervals.

Meter Installation and Qualification



EQPac supports the highest level of regulatory compliance and provides detailed documentation of IQ/OQ and recommendations for performance qualification and routine maintenance measures.

IPac documentation includes the steps of professional installation and operational qualification and provides recommendations for performance testing.

StarterPac provides basic, fast and reliable equipment installation and set up. It is perfect for internal quality records.

For more information see page 21.

Meter Calibration and Extended Care



Regular meter calibration ensures that the device functions according to its operational specifications. The calibration certificate provides the required proof for quality audits.

Extended Care provides peace of mind during the first 24 months following equipment installation, covering all travel expenses, labor and spare parts. During this period you also receive two preventive maintenance visits that include firmware updates and adjustments whenever needed.

For more information see pages 22–23.

Sensor Calibration with Certified Standards



METTLER TOLEDO offers **certified buffers, standards and electrolytes** for the calibration of your pH sensors.

To minimize the effect of drift and to maintain accurate measurements over time, calibrate your pH sensor before every set of measurements. For pH, the use of at least 2 buffers is recommended to establish a calibration curve and ensure that further measurements are accurate. Calibrating your pH sensor with our certified solutions extends the sensor's lifetime and saves on future replacement costs.

Find more information on pages 256–259.

► www.mt.com/Service



Good Electrochemistry Practice™ (GEP™)

Know Your pH Measurement Risks

GEP Risk Check



The first step to improving your electrochemical processes is to learn about possible risks. Take 5 minutes and check your processes step-by-step. GEP Risk Check will point out where you could do better and suggest possible ways to get there.

Sensor Product Guide



Find the right sensor for your application using our Sensor Product Guide. This interactive guide makes sensor selection easier. Additionally, you will find best-practice sensor-handling movies, a troubleshooter and more.

Web Know-How Portal



Take advantage of our self-study eLearnings, on-demand webinars, and other GEP training materials to keep you and your business up to date and well informed.

pH is a common analysis, but many things can go wrong. The same goes for conductivity, ion concentration, dissolved oxygen and redox determination.

GEP guides you through the product lifecycle to detect and address possible risks. With the right tools, you can be assured of consistently reliable results.



www.mt.com/GEP



Automated Reactors and In Situ Analysis

Chemical Synthesis, Process Development
and Particle Characterization

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Scan this code for more information.

► www.mt.com/AutoChem

Supporting Innovation From Molecule to Manufacturing

METTLER TOLEDO instruments are considered the industry standard. They provide information so that researchers can make better decisions to develop processes with higher quality in less time and at lower costs.

Early-Phase Development

Synthesis workstations, real-time analytical technology, and in situ sampling allow chemists to quickly develop new synthetic routes, then safely deliver grams to kilograms of materials. These tools provide initial understanding of process scale-up issues, enabling scientists to eliminate non-viable candidates early in development. A common software platform for all instruments makes it simple to visualize, interpret and report results.

Process Development

The combination of reaction calorimeters, Fourier-Transform Infrared (FTIR)-based in situ reaction analysis systems, and inline particle size and shape analysis tools supports process understanding from a chemistry, thermodynamics, and particle-characterization perspective. Integrated software provides a deeper understanding with less effort. Whether a batch or continuous process, enhanced quality and quantity of knowledge enables engineers to quickly scale up, eliminate failures and avoid safety incidents.

Scale Up and Manufacturing

Process Analytical Technology (PAT) tools ensure processes are within boundary conditions, eliminating the risk of batch failures while delivering higher yields at lower cost. PAT systems allow users to realize the benefits of Quality by Design (QbD) through the transfer of more robust, lower-cost commercial processes to manufacturing.

Real-Time Analysis

Safe and automated sampling of chemical reactions 24/7. Representative samples are ensured by quenching and diluting the sample in real time at the point of capture.



Automated Sampling

Increased Productivity

Automated synthesis workstations increase productivity by controlling and recording all chemical reaction parameters 24 hours a day.



Synthesis Reactors

Eliminate Grab Sampling

Spectroscopy systems provide real-time composition analysis to monitor key reaction species in situ, eliminating the need for grab sampling.



Reaction Analysis

Optimized Development

Probe-based instruments optimize crystallization and particulate process development by understanding and controlling particle size and shape in-process.



Particle Characterization

Instrument Support

We support and service your measurement equipment through its entire lifecycle, from installation to preventive maintenance, and from calibration to equipment repair.



Service

Automated Sampling

Unattended, Representative Samples

Sampling chemical reactions for offline analysis to determine reaction progression or impurity profiles is standard practice. However, the manual process is challenging when sampling air-sensitive reactions, reactions at elevated pressure, or heterogeneous mixtures. Poor sampling reproducibility and delays in quenching can lead to variable results and analytical inaccuracies. EasySampler™ was designed to eliminate these challenges by providing an automated and robust inline method of taking representative samples from reactions.

Difficult Reactions to Sample



It is labor intensive or impossible to sample reactions that are air- or moisture-sensitive, at elevated pressure or sub-ambient temperature, or highly toxic. EasySampler's unique probe enables sample capture and immediate quench so samples are representative of the reaction at the time of sampling.

Representative and Reproducible



Sampling reactions with precision is challenging, especially for heterogeneous or multiphase reactions. EasySampler samples from the same position in the reactor into a fixed-volume pocket. Solids begin dissolving immediately in the quench step for accurate and reproducible analytical data.

Automated and Unattended



Sampling long reactions or a series of DOE experiments can be impractical. The lack of samples leads to blind spots in data, thus requiring repeat experiments. EasySampler can be programmed with a sequence for continued sampling operations 24 hours a day to increase productivity and decrease project timelines and cost.



HPLC-Ready Samples



After quenching, the liquid handling system dilutes the sample to a user specified concentration and transfers it to a vial, ready for offline analysis. Quench and dilution steps can function as sample derivatization steps, thus decreasing sample preparation time and eliminating human error.



EasySampler 1210

Case Study: Pfizer Evaluates Automated Sampling for Improved Impurity Profiling

Learn how scientists at Pfizer applied unattended sampling to gather low-level impurity and kinetics profiling data from thick slurries, tri-phasic mixtures and oxygen-sensitive reactions. Four reaction case studies highlight how automated reaction-sampling impacts chemical and process development.

► www.mt.com/Pfizer-Sampling

Order Information

Description	Material No.
EasySampler 1210 system complete	30083901
EasySampler probe 450 set (for reactors up to 6 L)	30306037
EasySampler probe 330 set (for reactors up to 1 L)	30306933
EasySampler probe 210 set (for reactors from 10 mL to 400 mL)	30246344
Sleeve complete, PTFE, alloy C-22 (1 pc per pack)	30100528
10 mL vial including screw cap (100 pcs per pack)	30244745
10 mL vial including screw cap (1,000 pcs per pack)	30111624

Chemical Synthesis Reactors

Automated Control of Process Conditions

Synthesis reactors reduce chemical and process development times by replacing traditional round-bottom flasks and jacketed lab reactors. They help researchers complete more experiments and deliver more information per experiment, increasing overall productivity. HFCal (Heat Flow Calorimetry) is an add-on for synthesis workstations that provides reaction-calorimetry capabilities.

EasyMax

Small-Scale Synthesis



EasyMax makes chemical synthesis easier by eliminating the dependence on ice baths, oil baths, and chillers. Quickly explore reaction conditions, even under low temperatures, while recording data that would otherwise be missed.

OptiMax™

Large Volume Synthesis



OptiMax ensures robust and scalable processes by applying synthesis reactors on the liter scale. Unattended control increases productivity while ensuring that all data is collected and experiments are safe. An HFCal option ensures scale-up issues are identified earlier.

RC1mx™

Reaction Calorimetry



RC1mx enables chemical and safety engineers to optimize processes under safe conditions while determining all critical process parameters and reducing the risk of failure on a large scale.

► www.mt.com/SynthesisWorkstations



RX-10™

Control Jacketed Lab Reactors



Connect and control your jacketed laboratory reactor with programmable temperature, liquid dosing and sampling for data-rich experiments, day or night. Automation and data capture allows researchers to scale up more successful experiments.



White Paper: The Modern Synthesis Lab

This featured white paper discusses a new toolbox specifically designed for chemists that expands experimental options, automates tedious tasks and captures high-quality data at the touch of a button.

► www.mt.com/AC-ModernizeSynthesis

Model	Environment	Application Area
EasyMax	Lab	Synthetic chemistry, process development
EasyMax HFCal	Lab	Process optimization, scale up, process safety screening
OptiMax	Lab	Synthetic chemistry, process development
OptiMax HFCal	Lab	Process optimization, scale up, process safety
RC1mx	Lab/pilot lab/small scale production	Process development, process optimization, scale up, process safety
RX-10	Lab	Process development, scale up, process chemistry
RTCAl	Lab	Polymerizations, process optimization, process chemistry

Real-Time Reaction Monitoring Improves Chemistry Understanding

Suitable for a wide range of chemistries, ReactIR™ and ReactRaman™ in situ spectroscopy provide real-time monitoring of key reaction species and how they change during the reaction course. Designed to follow reaction progression, ReactIR and ReactRaman provide specific information about reaction initiation, conversion, intermediates, endpoint, and form change to answer fundamental questions about the chemical reaction, including “When does it start and stop?” and “What are the mechanisms and kinetics?”

ReactIR 701L/702L

Reaction Analysis (FTIR)



A real-time, in situ mid-infrared-based system designed to study reaction progression – providing specific information about reaction initiation, conversion, intermediates, and endpoint. The comprehensive nature of the data makes it ideal for kinetic analysis and facilitates the elucidation of reaction mechanism and pathway.

ReactRaman 802L

Reaction Analysis (Raman)



ReactRaman is a probe-based, Raman spectroscopy instrument that can monitor crystallization processes and reveal reaction mechanisms and kinetics in single or multiphase systems.

ReactIR 45P

In-Process Reaction Analysis



By providing in-depth reaction understanding, in situ mid-infrared enables chemical processes to be successfully moved from the lab to the pilot plant and production. By tracking critical parameters in real time, process design and quality are improved while variation and batch failures are eliminated.

► www.mt.com/ReactIR



White Paper: Comprehensive Reaction Insight for Every Experiment

HPLC is a valuable workhorse in your lab, but what really happens in between samples? This paper cites 5 recent publications where offline analysis was combined with inline reaction monitoring to deliver valuable reaction insight.

► www.mt.com/BetweenSamples

Configuration

Model	Environment	Application Area
ReactIR 702L	Lab	Synthetic chemistry
ReactIR 701L	Lab	Synthetic chemistry, chemical development, kinetics, quantitative analysis
ReactIR 45P	Lab/Production	Scale up, campaigns, process transfer
ReactRaman 802L	Lab	Multiphasic reactions, crystallization, polymorphism detection

Particle Size and Shape Analysis

Lab, Pilot Plant and Production

ParticleTrack™ and EasyViewer™ provide precise inline measurement of particle size, shape, and count without sampling. Probe-based instruments measure particles and droplets in gas or liquid suspension at process concentration, providing real-time information to speed development, maximize process performance and optimize quality.

ParticleTrack G400

Measure Particle Changes



Track the rate and degree of change to particles and particle structures as they naturally exist in-process. The portable G400 is ideal for applications in less than one liter vessels or small pipelines. Experimental parameters are quickly screened to assess the impact of process conditions on the particle system.

ParticleTrack G600

Characterize Particles from Lab to Plant



Tracking particles in real-time allows conditions to be adjusted to reduce cycle time and ensure batch-to-batch consistency. G600 is ideal for one to 50,000 liter vessels providing information to design and scale up processes with the desired particle size distribution, yield and purity.

EasyViewer

View and Measure Particles



EasyViewer is a probe-based imaging tool that captures high-resolution images of crystals, particles, and droplets as they exist in process. With its slim design, smart focus controls and plug-and-play connection, EasyViewer makes unattended image capture at small scales effortless.

► www.mt.com/Particle



White Paper: Particle Size Analysis for Process Optimization

This white paper introduces the limitations of offline analysis and provides practical techniques to:

- Improve fundamental process understanding
- Attack design problems with comprehensive data
- Improve safety and productivity with unattended operation

► www.mt.com/AC-ControlParticles

Configuration

Model	Vessel Size	Key Characteristic
Laboratory Solutions		
ParticleTrack G400	30 mL – 500 mL	Portable, interchangeable probes
ParticleTrack G600L	500 mL – 5 L	Results scalable to plant
EasyViewer	20 mL – 5 L	In-process video microscopy
Production Solutions		
G600R	1 L +	Dip-pipe mountable
G600S/T	1 L +	Pipeline installations
G600P	20 L +	1 m probe length
G600X	1 L +	Customizable

Extend Instrument Performance

Custom Maintenance Programs

Researchers and engineers across industry and academia rely on METTLER TOLEDO instruments to provide critical information during investigations. To be successful, scientists need to be confident that the equipment works correctly when it is needed, and that results can be trusted.

We provide a range of service options to prevent instrument downtime, ensure results quality and regulatory compliance. Our customized coverage minimizes unexpected costs, improves data collection reliability, and reduces the total cost of ownership.

Uptime



Instruments are often subjected to high utilization in critical processes. System reliability is maximized through our field service team, help desk, return to factory refurbishment and repair services, as well as our optional value-added products.

Performance



Optimize hardware and software performance with comprehensive installation, preventive maintenance and full-service contract programs. Our trained technicians ensure the system is performing within factory specifications.

Compliance



Meet internal and external compliance standards with optional value-added services. IPac and EQPac qualification services ensure internal compliance standards are met and provide objective evidence for regulated environments.



Expertise



Maximize equipment and process performance with professional training for your personnel. Service technicians identify, plan and coordinate complex product solutions for on-time and on-budget completion.



Installation and Performance-Verification Packages

Professional documentation ensures compliance and process consistency.

► www.mt.com/AC-Service

Melting Point and Dropping Point Instruments

Simple, Efficient and Trustworthy





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Scan this code for more information.

► www.mt.com/MPDP

Melting and Dropping Point Excellence

Ready at the Touch of a Button

How do you test the purity of your products or quality of your materials? Multiple methods such as melting, boiling, cloud, slip melting, dropping and softening point can be used to characterize a substance and analyze its properties.

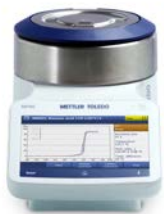
Our Excellence Melting and Dropping Point Systems offer the possibility of measuring these thermal values accurately and automatically with just One Click™.



Melting Point Excellence MP90

Trust Your Results

Investigate color changes and decomposition temperatures with video observation. Statistical evaluation with standard deviation and mean value allow you to have full confidence in your data.



Melting, Boiling, Cloud, Slip Melting Point

Measurements Made Easy

With simple operating routines and an intuitive color touchscreen, you can perform dropping and softening point measurements with a press of a button.



Dropping and Softening Point

Simplify Sample Preparation

Ensure high performance and proper sample preparation with our dedicated accessories and software.



Accessories

Secure Your Investment

Our worldwide service network is always on hand to help you keep your instruments performing at their peak.



Service

Determine Melting Point

One Click Is All It Takes

Melting, boiling, cloud and slip melting point determination has never been so easy! With simple operating routines and an intuitive color touchscreen, you can perform measurements quickly. Press one button, and the instrument does the rest for you. Attend to other important tasks while the measurement is being performed.

Measure up to 6 Samples at Once



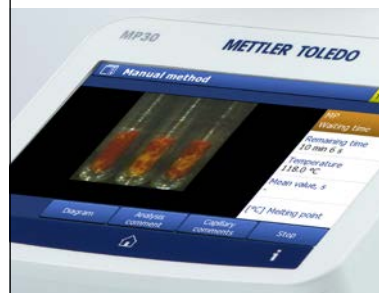
In today's fast-paced lab and production environments, high-throughput processing is essential. With the Melting Point Excellence System, you can run up to 6 samples simultaneously, saving you valuable time and effort.

Comply with Standards



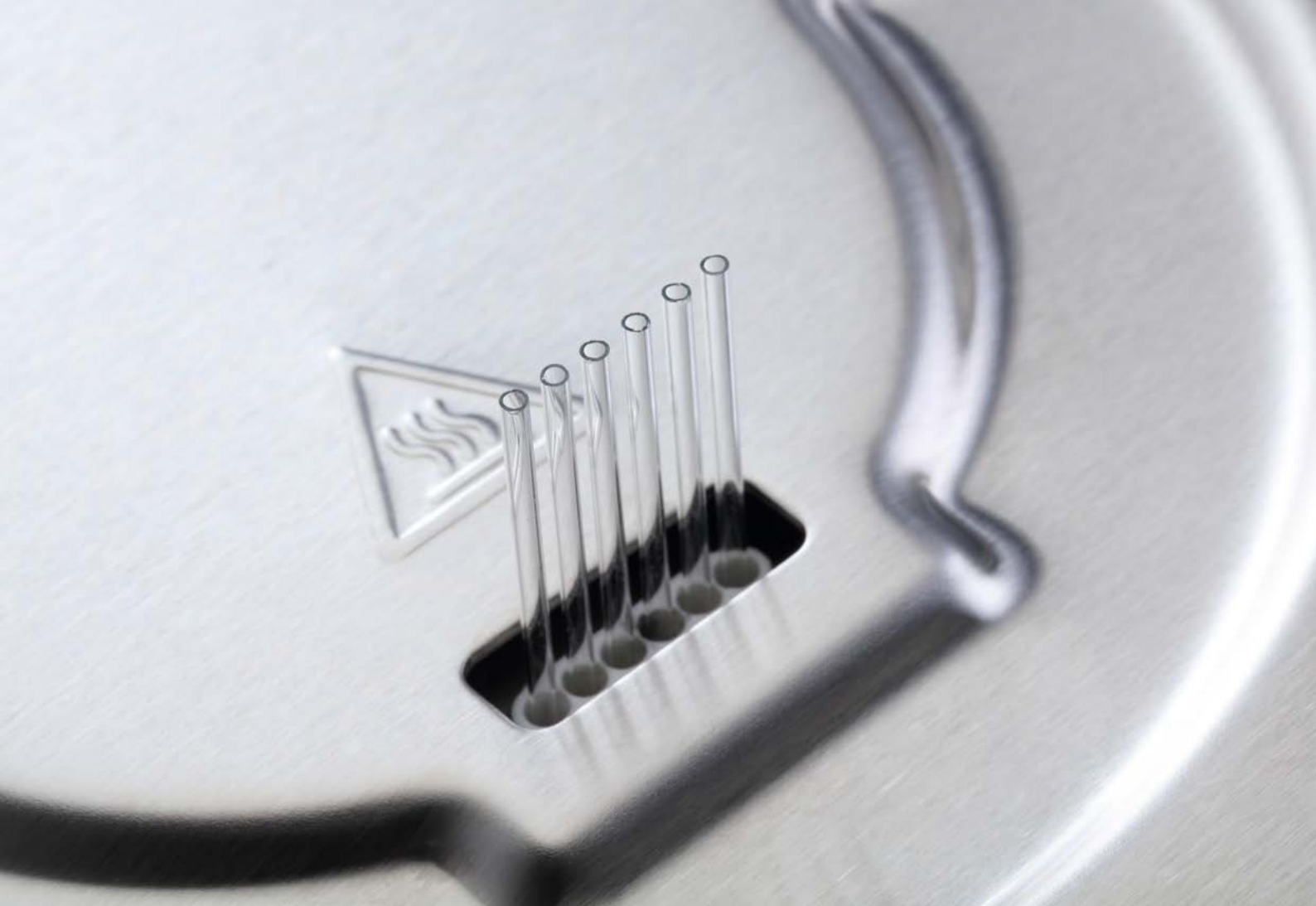
Working in accordance with regulations and standards is a must. With Excellence Melting Point Systems, full compliance with relevant international and national standards and norms, such as Ph.Eur. 2.2.60, USP <741>, Ch.P. 0612, and Japanese JIS is ensured.

Minimize Training and Operator Influence



Measurement results can be influenced by the user. Save time and money while reducing operator training and influence with the fully automatic determination of melting, boiling, slip melting and cloud points.

► www.mt.com/Melting-Point



Performing a melting point experiment with the Melting Point Excellence MP90

Applications	MP30	MP55	MP70	MP80	MP90
Melting Point and range	•	•	•	•	•
Boiling Point	–	–	–	•	–
Cloud Point (heating)	–	–	–	•	–
Slip Melting Point	–	•	–	•	–
Specifications					
Number of capillaries	3 melting point	3 melting point 2 slip melting point	4 melting point	3 melting point 2 boiling/cloud/ slip melting point	6 melting point
Temperature range	RT ¹ to 300 °C	RT to 300 °C	RT to 350 °C	RT to 350 °C	RT to 400 °C
Video storage and replay	On instrument only, only last video	Instrument only	Instrument; export to SD card or to a PC	Instrument; export to SD card or to a PC	Instrument; export to SD card or to a PC
Result storage	1	10	50	50	100
Material No.	30578100	30578101	30578102	30578103	30578105

¹ RT = Room Temperature



Download our detailed product brochure

► www.mt.com/ThermalValuesGuide

► www.mt.com/Melting-Point

Comply with Standards

Reliable Dropping Point Determination

Determine the dropping and softening points of pitch, asphalt, polymers, resins, waxes and many more materials automatically with the innovative METTLER TOLEDO Dropping Point System. Standard, compliant cups and measurement methods ensure comparable results, and all instruments conform to ASTM international standards and other norms.

Start with One Click



One Click determination is as simple as it sounds: All you need to do is press a button to start your measurement. Clicking the "home" button on any menu takes you directly back to the home screen.

Trust Your Results



Observe your measurements in real time via video or replay the video to verify your results. Digital image analysis and automatic detection of dropping and softening points ensure reliable results.

Manage Your Data



Perform different measurements quickly and efficiently by working with up to 60 methods. Results are displayed immediately after the experiment, and up to 100 results are stored automatically for access at any time directly on the instrument.

► www.mt.com/Dropping-Point



	DP70	DP90
Instrument type	Standalone instrument	Control unit with external measuring cell
Temperature range	RT ¹ to 400 °C	-20 °C to 400 °C
Heating rate	0.1 to 20 °C per minute	0.1 to 20 °C per minute
Cups number	Up to 2	Up to 2
Cups dimensions (orifice)	2.8/6.35 mm	2.8/6.35 mm
Languages	Chinese, English, French, German, Italian, Japanese, Korean, Portuguese, Russian, Spanish	
Video	Color AVI; magnification 2.5 ×	Color AVI; magnification 2.5 ×
Video export	On SD card or to PC	On SD card or to PC
Length diagram for softening	Yes	Yes
User management	Yes	Yes
Shortcuts (One Click)	12 per user	12 per user
Material No.	30578107	30578109

¹ RT = Room Temperature

Added Value

The Right Accessories

Benefit from all that METTLER TOLEDO's Excellence Melting and Dropping Point Systems have to offer you. Ensure high performance and proper sample preparation.

Accessory Boxes



Robust and smart sample preparation tools speed up preparation, increase operational security and avoid unnecessary measurement repetition. Available with standard or USP-compliant reference substances.

PC Software



LabX™, our laboratory management software for analytical instruments and balances, powers your Melting Point Excellence System with automatic data handling, high process security, and full SOP user guidance.

Accessories	Description	Material No.
Melting Point accessory box	Contains everything for secure sample preparation and traceable temperature-accuracy check	51142599
USP Melting Point accessory box	Contains everything for secure sample preparation and traceable temperature-accuracy check according to USP	30312725
Dropping Point accessory box	Contains everything for secure sample preparation and traceable temperature-accuracy check	51143740
MP VPac™	Verify the performance of your melting point instrument with pre-filled and ready-to-use capillaries	30097033
LabX for Melting Point		
LabX Thermal Values Starter Pack: Express Edition	Full version of LabX Thermal Values for installation on a single computer	30005779
LabX Thermal Values Starter Pack: Server Edition	Full version of LabX Thermal Values for installation on multiple computers and availability in a distributed network	30005810
LabX Thermal Values Instrument License	For each additional instrument to be connected to the LabX installation, an instrument license is needed	30005811

Secure Your Investment Throughout the Product Lifecycle

METTLER TOLEDO will support and service your melting and dropping point systems throughout their entire lifecycle. From installation and qualification to regular preventive maintenance and calibration, we offer a broad range of solutions to help protect your investment every step of the way.

Installation and Qualification



EQPac comprehensive qualification service is specifically designed to address compliance concerns in today's demanding regulatory environment. It provides on-site, fully-documented, professional installation and qualification to ensure regulatory compliance and dependable operation.

For a quick and simple solution to document correct delivery and installation, ask about the Melting and Dropping Point **StarterPac**. Aimed at self-regulated environments, the StarterPac is the ideal choice for your internal quality management system.

Calibration and Certification



Regular calibration by a manufacturer-trained service technician ensures that your melting point and dropping point instruments are measuring accurately and perform within manufacturer specifications. A professional calibration certificate provides all the evidence you need for a trouble-free audit. To ensure accuracy over time, test your instrument regularly with our certified standards.

Extended Care



Extended Care provides you insurance over the first 24 months after installation. With Extended Care you also receive two preventive maintenance visits. Regular and professionally performed maintenance prevents unexpected breakdown and ensures operational performance and reliability. Detailed checklists itemize the work carried out and support you during quality audits.

GMDP™ – Good Melting and Dropping Point Practice™ is a 5-step guideline to improve your lab process. It offers comprehensive support, so that you invest in suitable equipment and services. Minimizing your risk will improve your performance.



For more information about our service offerings, see pages 20–23.

► www.mt.com/GMDP
► www.mt.com/MPDP-Service

DSC, TGA, TMA and DMA Instruments

Robust Characterization Has Never Been Easier





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STAR [®] System – the Flexible Solution	290
Thermal Analysis Systems	291–292
Thermal Analysis Accessories	293
Hot-Stage Microscopy Systems	294
Support	295
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Scan this code for more information.

► www.mt.com/ta

Materials Characterization Tailored to Your Exact Needs

The METTLER TOLEDO thermal analysis Excellence and Advanced lines offer tailor-made solutions for academic and industrial applications. Unrivalled performance and the highest level of Swiss quality means you can confidently perform reliable and repeatable investigations.

Differential Scanning Calorimetry

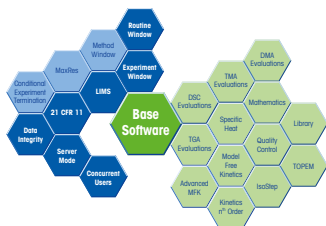
DSC determines the enthalpies of thermal events and the temperatures at which these processes occur.



DSC and Flash DSC

The Software Standard in Thermal Analysis

STAR[®] software is the most comprehensive thermal analysis software on the market, providing unrivaled flexibility and nearly endless evaluation possibilities.



STAR[®] Software

Thermogravimetric Analysis (TGA)

TGA measures the sample weight as a function of temperature. It is used to perform compositional analysis or investigate the reaction kinetics of your sample.



TGA/DSC and TGA

Dynamic Mechanical Analysis (DMA) and Thermomechanical Analysis (TMA)

DMA and TMA are used to measure the mechanical and viscoelastic properties of materials as a function of temperature, time and frequency.



DMA and TMA

Results You Can Trust

Our service portfolio is designed to ensure the continuous performance and reliability of your thermal analysis systems.



Services

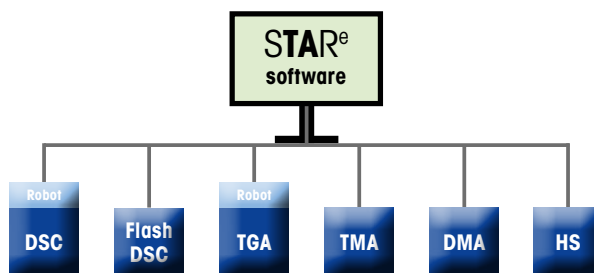
STAR^e System Software

Select the Right Thermal Analysis Module

STAR^e is a sound investment. You can purchase what you currently need and upgrade the system over time with options or accessories as your requirements change.

Modular Design

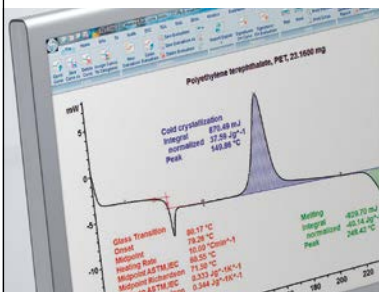
STAR^e software is designed around a powerful basic software that consists of evaluation and module-control windows and a simplified installation window. The software can easily be expanded to support new applications or instruments.



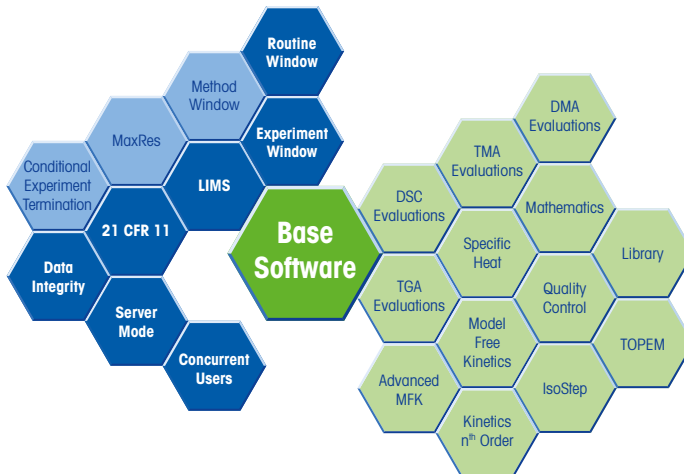
Features and Benefits of STAR^e Excellence Software

- **Extensive evaluation possibilities** – provides enormous flexibility
- **Reliable automation** – high sample throughput with automatic evaluation dramatically improves efficiency
- **Unique integrated database solution** – ensures the highest level of data security
- **Solid compliance** – supports 21 CFR Part 11 user level management and electronic signatures
- **Modular concept** – tailor-made solutions for current and future needs
- **Easy and intuitive One Click™ operation** – saves time in training and in daily use
- **Time-saving FlexCal™ calibration** – for more accurate measurement results
- **State-of-the-art LIMS integration** – ensures seamless processes from external tasks to measurement evaluation and result assessment

Powerful and Versatile



STAR^e software provides unrivaled flexibility and unlimited evaluation possibilities.



► www.mt.com/ta-software



DSC

Differential scanning calorimetry (DSC) utilizes an innovative sensor with a patented star-shaped arrangement of 120 thermocouples that provides unmatched sensitivity and resolution.



Features and Benefits

- Amazing sensitivity to measure weak effects
- Outstanding resolution to allow measurement of rapid changes and close-lying events
- Efficient automation enabled by a reliable sample robot for high throughput

► www.mt.com/ta-dsc

HP DSC

For material testing, process development or quality control there is often no alternative to DSC measurements under pressure. High-pressure (HP) DSC allows these measurements to be performed, expanding the possibilities of thermal analysis.



Features and Benefits

- Shorter analysis time for higher-pressure and temperature-accelerated reactions
- Measurement under process conditions for a simulation of practical reaction environments
- Better interpretation of effects, which can be separated by suppressing vaporization

► www.mt.com/ta-hpdsc

Flash DSC

Flash DSC revolutionizes rapid-scanning DSC. Flash DSC allows the user to analyze reorganization processes that were previously impossible to measure. Flash DSC is the ideal complement to conventional DSC.



Features and Benefits

- Ultra-high heating rates to reduce measurement times and suppress reorganization processes
- Ultra-high cooling rates that allow materials with defined structural properties to be prepared
- Wide temperature range allow measurements from -95 to $1,000$ °C
- Oxygen-free conditions protect your sample against oxidation

► www.mt.com/ta-fdsc



TGA/DSC and TGA

The TGA/DSC and TGA instruments are equipped with a top-of-the-line METTLER TOLEDO ultra-microbalance with unique built-in calibration ring weights for unparalleled accuracy.



Features and Benefits

- Efficient automation – reliable sample robot for high sample throughput for TGA/DSC and TGA
- METTLER TOLEDO ultra-microbalance – rely on the balance technology leader
- DSC heat flow measurement – for simultaneous detection of thermal events

► www.mt.com/ta-tgadsc
 ► www.mt.com/ta-tga

TMA

The Thermomechanical Analyzer (TMA) incorporates Swiss precision mechanics and features nanometer resolution to measure the very smallest dimensional changes.



Features and Benefits

- Nanometer resolution – allows very small changes to be measured
- Dynamic load TMA (DLTMA mode) – measures weak transitions and elasticity
- SDTA – simultaneous measurement of thermal effects

► www.mt.com/ta-tma

DMA

The revolutionary technology of the Dynamic Mechanical Analyzer (DMA) offers previously unattained performance and time saving external sample loading.



Features and Benefits

- Wide force range from 1 mN to 40 N – allows very soft and very hard samples to be measured
- Frequency range from 1 mHz to 1 kHz – means that measurements can be performed under real conditions or more rapidly at higher frequencies
- Innovative sample holders – permit samples to be prepared and loaded externally

► www.mt.com/ta-dma

Analysis over an Extremely Wide Application Range

Materials Characterization by	DSC	Flash DSC	TGA	TMA	DMA
Physical Properties					
Melting, crystallization	•	•	–	•	•
Enthalpy of crystallization	•	•	–	–	–
Solid fat index	•	–	–	–	–
Purity determination	•	–	–	–	–
Vaporization, drying	•	–	•	–	–
Sorption, desorption	–	–	•	–	–
Glass transition	•	•	–	•	•
Specific heat capacity	•	•	–	–	–
Expansion coefficient, shrinkage behavior	–	–	–	•	–
Polymorphism, crystalline transitions	•	•	–	•	–
Liquid-crystalline transitions	•	•	–	–	–
Viscoelastic behavior, elastic modulus	–	–	–	•	•
Chemical Changes					
Decomposition, pyrolysis	•	–	•	•	–
Oxidation, stability	•	–	•	•	–
Curing, vulcanization, gelation	•	•	–	–	•
Dehydration	•	•	•	–	–
Denaturation	•	•	–	–	–
Swelling and foaming	•	–	–	•	–
Reaction process, reaction enthalpy and kinetics	•	•	•	–	–

Thermal analysis is firmly established as a method for the characterization of physical and chemical properties of materials in many different fields.

Crucibles and Sensors for Thermal Analysis

Crucibles serve as containers for samples during thermoanalytical measurements. The type of crucible used can have a large effect on results quality and influence important DSC measuring-cell characteristics. In Flash DSC, the sample is placed directly onto the MultiSTAR™ chip sensor. The patented dynamic power compensation control circuit allows measurements to be performed with a minimum noise level at high heating and cooling rates.

Crucible Type	Quantity	Volume	Max. Press.	Max. Temp.	For DSC	For TGA	Material No.
Aluminum crucible light	100	20 µL	0.2 MPa	640 °C	•	•	51119810
Aluminum crucible standard	100	40 µL	0.2 MPa	640 °C	•	•	00026763
Copper crucible	100	40 µL	–	750 °C	•	•	51140407
Platinum crucible small	4	30 µL	–	1,600 °C	•	•	51140842
Platinum crucible medium	4	70 µL	–	1,600 °C	•	•	51119654
Gold crucible	6	40 µL	0.25 MPa	750 °C	•	•	00027220
Medium-pressure crucible	25	120 µL	2 MPa	250 °C	•	–	00029990
Reusable, gold-plated high-pressure crucible	3	30 µL	15 MPa	350 °C	•	–	51140405
High-pressure crucible	25	40 µL	15 MPa	750 °C	•	–	00026731
Sapphire crucible medium	4	70 µL	–	2,000 °C	•	•	51140845
Alumina crucible small	20	30 µL	–	2,000 °C	•	•	51140843
Alumina crucible medium	20	70 µL	–	2,000 °C	•	•	00024123
Alumina crucible large	20	150 µL	–	2,000 °C	–	• ¹	00024124
Alumina crucible large	4	900 µL	–	2,000 °C	–	• ¹	51119960

¹ Only with large furnace



Flash DSC: MultiSTAR UFS 1 standard sensor or UFH 1 sensor for high temperature



Selection of crucibles for thermal analysis

For more information ask for our crucible brochure or visit www.mt.com/ta-crucibles

Hot-Stage Microscopy

Seeing is Believing



Hot-stage microscopy is a powerful tool that is widely used for the visual characterization of all kinds of thermal transitions. The possibility of directly observing morphological changes in a sample as it is heated or cooled is of enormous value. Changes in the shape, structure and color of crystals are seen as well as their size and number. The technique allows phase transitions to be characterized and provides information on expansion and shrinkage behavior.

Features and Benefits

- **Imaging possibilities** – allows polymorphic transitions to be studied visually
- **Closed-furnace design** – ensures excellent temperature control
- **High sensitivity** – optical sensitivity is not influenced by heating or cooling rates
- **STAR® free evaluation** – an opportunity to use free evaluation software



Microscope equipped with HS84 hot-stage

Thermal Events and Operations

That can be defined with HS82/HS84

Industry	Thermal Events	HS82	HS84
Pharmaceuticals, petroleum, food, cosmetics, academia	Melting characteristics	•	•
Pharmaceuticals, food, cosmetics	Polymorphism	•	•
Chemicals, cosmetics	Liquid crystal transitions	•	•
Polymers, pharmaceuticals	Crystallization and nucleation	•	•
Chemicals, petroleum	Cloud point	•	–
Chemicals, academia, test laboratories	Purity	–	•
Pharmaceuticals, chemicals, polymers	Decomposition temperature	•	•
Polymers	Curing	–	•
Pharmaceuticals, polymers, chemicals, academia, test laboratories	Reaction and transformation enthalpy	–	•
Forensic science	Oil immersion/temperature-variation method	•	–

The HS82 hot-stage microscopy system is an easy-to-use and precise thermal measuring cell for visual sample observation. The HS84 hot-stage microscopy system also allows DSC heat-flow measurements. Two different software packages enable evaluation of heat flow or video-image capture.

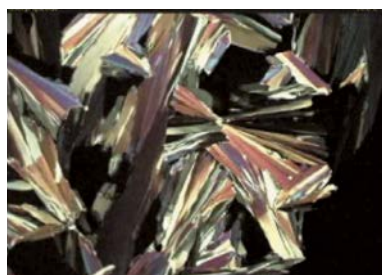


Image at 90 °C



Image at 100 °C

Comprehensive Support

Get More out of Your Instrument

Your initial focus may be on instrument specifications, but reliable support and continuing education are equally important. We provide comprehensive training materials and application support to help you get the best out of your thermal analysis device. Check our website for the latest applications, educational webinars, and more.

Helpful Application Materials



Webinars

- ▶ www.mt.com/ta-webinars
- ▶ www.mt.com/ta-ondemand

Applications

- ▶ www.mt.com/ta-applications

Handbooks

- ▶ www.mt.com/ta-handbooks

Videos

- ▶ www.mt.com/ta-videos

Comprehensive Training



For self-training purposes, you can purchase the tutorial kit with 23 well-chosen application examples and corresponding test substances.

- ▶ www.mt.com/ta-tutorial

Classroom training is still an effective way to learn.

- ▶ www.mt.com/ta-training

Register for an eTraining course.

- ▶ www.mt.com/ta-etaining

Application Magazine



A large number of scientific results and discoveries are made every year based on thermal analysis. Interesting examples from different application fields and industries are published in our UserCom magazine.

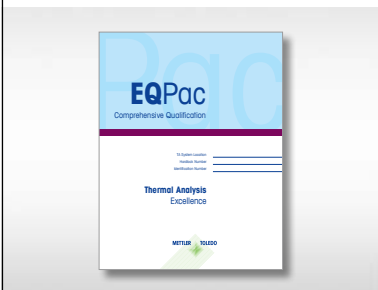
- ▶ www.mt.com/ta-usercoms

World-Class Service Results You Can Trust

METTLER TOLEDO’s service portfolio is designed to ensure the continuous performance and reliability of your thermal analysis systems. Our services ensure the measurement accuracy and long-term quality of your equipment and safeguard your investment for years to come.

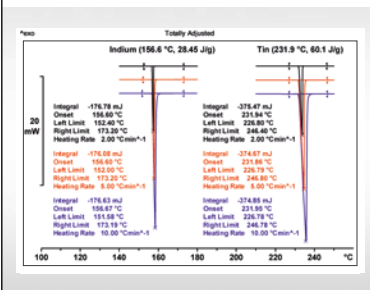
Our manufacturer-trained teams bring the professional expertise and know-how needed to provide you with the highest level of ongoing support as well as the experience necessary to optimize services for your own particular needs.

Installation and Qualification



EQPac supports the highest level of regulatory compliance, providing Installation Qualification (IQ) and Operational Qualification (OQ). Comprehensive, fully-compliant documentation supports the audit requirements of your industry.

Calibration



METTLER TOLEDO’s thermal analysis instruments offer the possibility of selecting calibration at one or more heating rates. Our calibration offerings include:

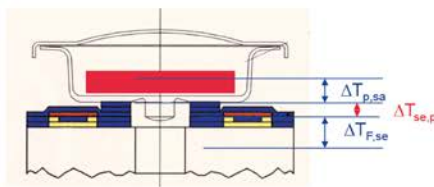
- **Standard Calibration** (1 heating rate)
- **Expert Calibration** (3 heating rates)

Extended Care



Extended Care provides you with assurance for the first 24 months after installation. With Extended Care, you also receive two preventive maintenance visits. Control your budget by avoiding unplanned expenditures throughout your equipment’s life.

For more information about our service offerings, see pages 20–23.



Calibration and Adjustment of Thermal Analysis Instruments

METTLER TOLEDO



Steps 1 and 2: Evaluation and Selection



Selecting the right analytical system not only involves knowing your current needs, but must also take into account future requirements. Secure the first few steps on this path by using our professional consulting services for documentation of your requirements.

Step 3: Installation and Qualification



After installation, the system has to be qualified for operation, which is crucial to ensure the best working conditions as well as longevity of the selected system. These activities need to be documented in a way that is easily traceable.

Steps 4 and 5: Training and Routine Operation



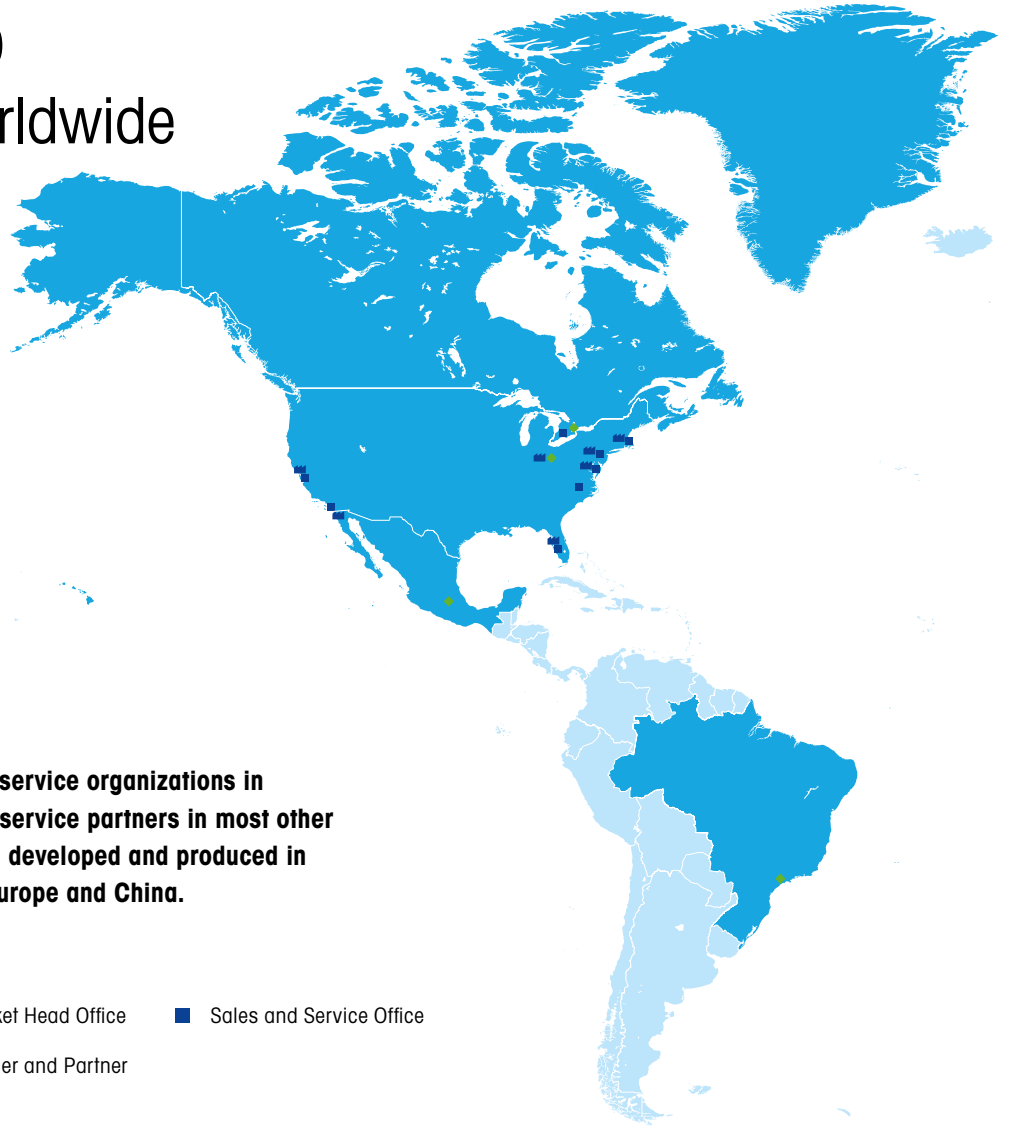
User training is very important to achieve the best possible results. We offer different training possibilities, including on-site, classroom, and web-based seminars as well as self-paced tutorials. The right crucible is very important for optimum system performance. We offer a wide range of crucibles, crucible volumes and materials.

Perform your own thermal analysis assessment risk with our web-based tool






► www.mt.com/ta-riskcheck ► www.mt.com/ta-gtap

METTLER TOLEDO

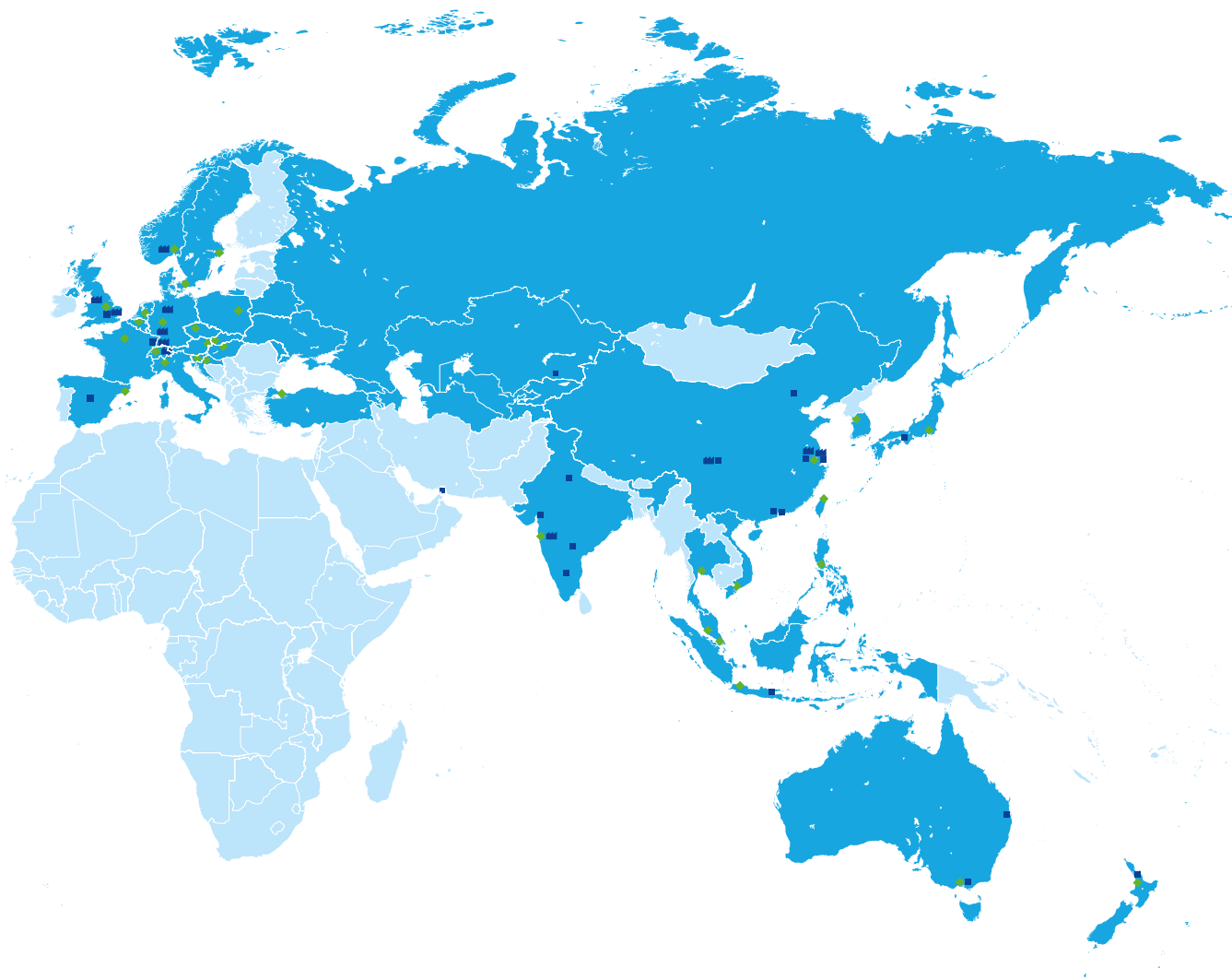
Organizations Worldwide



METTLER TOLEDO has its own sales and service organizations in 40 countries as well as distribution and service partners in most other countries across the globe. Products are developed and produced in various locations in the United States, Europe and China.

-  R&D Manufacturing Center
-  Market Head Office
-  Sales and Service Office
-  METTLER TOLEDO
-  Dealer and Partner

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Slovakia	Mettler-Toledo s.r.o. , SK-83103 Bratislava Tel. +421 2 4444 1220, predaj@mt.com		
Slovenia	Mettler-Toledo, d.o.o. , SI-1261 Ljubljana – Dobrunje Tel. +386 1 547 49 00, marcom.si@mt.com		
		For all other countries	Mettler-Toledo Sales International GmbH CH-8606 Greifensee Tel. +41 44 944 22 11

Improve Sustainability in the Lab

Your Green Journey Put into Practice

With the growing effects of climate change, sustainability is increasingly urgent across industries. In the lab, however, productivity often means elevated consumption of materials, including reagents and single-use plastics.

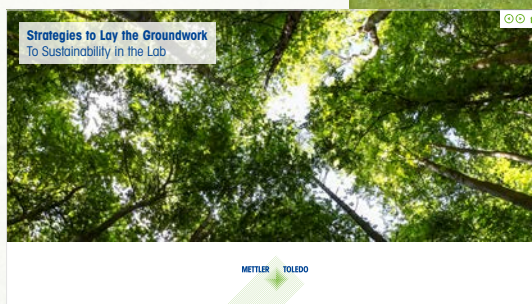
METTLER TOLEDO's Sustainability Guide takes a critical look at climate impact. It outlines our own efforts to reduce our climate footprint, both in-house and throughout our supply chain, and suggests strategies laboratories can take to limit their environmental impact as well.

Learn more about:

- Instrument lifetime – fewer replacements mean you will need less materials
- Miniaturized measurements – smaller samples reduce your solution use and disposal
- Electronic data capture – reduce your reliance on paper while remaining compliant

Practical examples and further reading will help you on your way.

► www.mt.com/Lab-Sustainability-Guide



www.mt.com

For more information

METTLER TOLEDO Group
Laboratory Division
Local contact: www.mt.com/contacts

Subject to technical changes
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