



INDUSTRIAL LABORATORIES SOLUTIONS

raawon
 For Laboratory & Scientific Supplies
 التعاو للجهيزات المخبرية والعلمية

CHOICE OF EXCELLENCE



CHOICE OF EXCELLENCE



ABOUT TAAWON GROUP

TAAWON GROUP

Taawon Group is specialized in the supplies of excellence level of high quality, compatible and best value laboratory and industrial equipment, disposables & chemical products in different market segments such as pharmaceuticals and bio-pharmaceuticals, food & beverage, chemicals & petrochemicals, oil & gas, academic institutions & research centers, IVF & genetics labs, hospitals & medical labs, environmental & testing labs and last but not least forensics labs.

Taawon Group was established in 2008 where the headquarter is based in Jordan and the group has expanded its activities internationally to reach Saudi Arabia (Diamond Spectrum), United Arab Emirates (Altayf Althahabi) and Poland (Parameter EU). This was a result of the emerged need for a local supplier of laboratory supplies that has arised and increased to become a necessity after all.

We are focused on customers needs and we place their expectations at the central of our plans and actions. We understand the similarities and differences of markerts worldwide thats why we actively and continuously seek out improvements to the local and global markets.

We understand customers interests and deep concerns which we support to meet their goals with conviction. We embrace our work by adopting a target-focused, process-oriented and solution-driven approach besides facilitating cooperation among employees and customers. We value our customers by listening carefully, playing an active role and offering critical analysis as well as addressing conflicts dealing with them sensibly.



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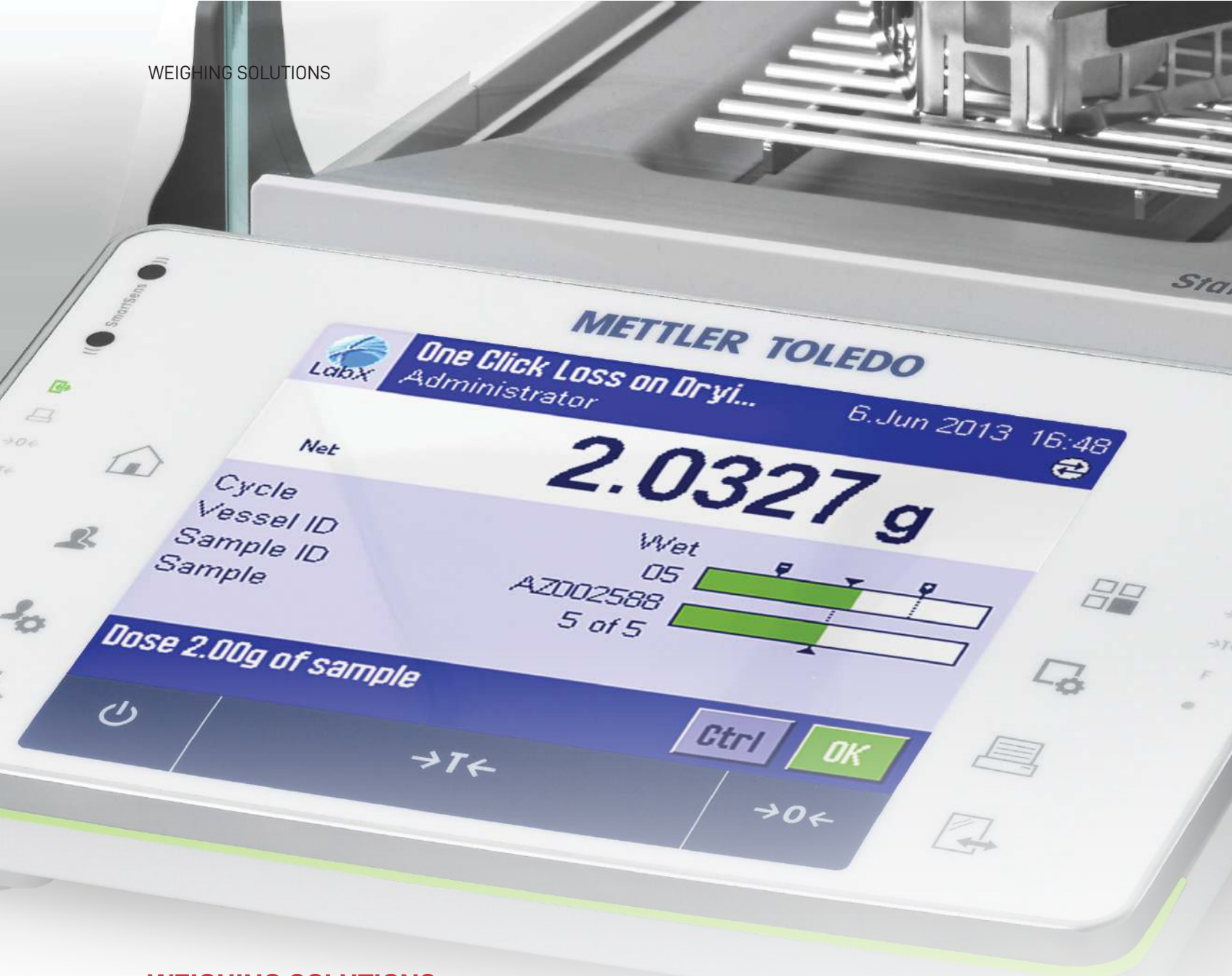
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WEIGHING SOLUTIONS

METTLER TOLEDO

LABORATORY WEIGHING SOLUTIONS

Complete outstanding quality and functionality are delivered through METTLER TOLEDO's comprehensive range of laboratory balances that provide users with flexibility and precision.

Enjoy the highest level of accuracy and reproducibility with these analytical, precision and micro & Ultra-micro balances. With a vast range of proven innovative technologies and advanced quality assurance functions, you can be sure of fast, reliable and valid results every time you weigh.

LABORATORY WEIGHING SOLUTIONS

ANALYTICAL BALANCES

Get the ultimate combination of high performance, reliability, robustness and ease-of-use with METTLER TOLEDO's **analytical and semi analytical balances** that measure mass to the highest degree of precision.

Covering a wide range of readability from 0.002 mg to 0.1 mg, minimum weight down to 0.4 mg and capacities from 41 g up to 320 g. You also have the choice to upgrade your balance with powder and liquid dispensing modules and benefit from fully automatic weighing, solution preparation and dilutions as well to the wide range of accessories of dosing modules, printers, software, density kits, antistatic solutions and much more!

Analytical balances are divided into three main levels:

- Excellence Level Balances; Capacity up to 320 g, minimum weight down to 0.4mg and readability down to 0.002mg.
- Advanced Level Balances; Capacity up to 320 g, minimum weight down to 30 mg and readability down to 0.01 mg.
- Standard Level Balances; Capacity up to 220 g, minimum weight down to 160 mg, readability down to 0.1 mg.



PRECISION BALANCES

Find all your weighing needs in METTLER TOLEDO's **Precision balances** from reliability and high-precision weighing to robustness and handling of harsh industrial conditions.

Covering a wide range of readability from 0.1 mg to 1 g, minimum weight down to 120 mg and capacities up to 64 kg. Complement your balance with LabX® software set up for seamless integration and to ensure data integrity of the balance.

Precision balances are divided into three main levels:

- Excellence Level Balances; Capacity up to 64 kg and 32 kg, minimum weight down to 120 mg and readability down to 0.1 mg.
- Advanced Level Balances; Capacity up to 6.2 kg and a readability down to 1 mg.
- Standard Level Balances; Capacity up to 6.2 kg and a readability down to 1 mg.



LABORATORY WEIGHING SOLUTIONS

MICROBALANCES & ULTRA MICRO BALANCES

METTLER TOLEDO's **microbalances and ultra-microbalances** weigh even the smallest amounts of samples instantly with great performance and high quality.

A micro balance or ultra-microbalance can deliver the highest precision of all lab balances. This high sensitivity in micro balance design allows for the weighing of sample quantities with a minimum weight as low as 0.3 mg and a capacity of up to 10.1 g with readability down to 1 µg (0.000001g).

Ultra microbalances offer an incredible full resolution of 61 million digits, with a capacity of 6.1 g and 0.1 µg readability (0.0000001g).

Mettler Toledo's portfolio includes a micro-analytical balance. It has a readability like a micro balance, 1 µg, and the shape of an analytical balance, with an outer and inner weighing chamber.

The XPE micro-analytical balances deliver the highest capacity, coupled with the lowest possible minimum weight . This enables dosing of very small amounts directly into a "large" tare containers.

Micro and Ultra-Microbalances features:

- Capacity up to 10.1 g and 52 g
- Readability down to 0.1 µg
- Minimum weight down to 1.2 mg according to USP
- Modern and user-friendly interface
- Ensured data integrity with LabX
- Smallest footprint for space-saving
- Static free samples
- GWP approved



LABORATORY WEIGHING SOLUTIONS

EXCELLENT DECISIONS DEPEND ON PRECISE WEIGHING



Automated dosing with Quantos powder and liquid dispensing modules enables you to achieve the highest level of accuracy and safety in sample preparation. It can also reduce minimum weight by up to %30.



Specialized **weighing pans** can make the difference between a process that is easy and repeatable and one that is not

Draft shields provide environmental protection which is important when using balances with fine readability less than 0.001 g

RFID accessories ensure error-free data transfer between your balance and sample containers, pipettes and automation systems.



Whether you want continuous results **printing** or sample **labelling** with IDs and bar codes, all your laboratory printing needs are covered. Just plug your unit in and start printing

The **StatusLight™** built into the terminal uses color to indicate intuitively the status of the balance: Green means ready, yellow is a warning and errors are shown in red.



LabX® software brings power to your laboratory bench with automatic data handling, high process security and full SOP user guidance. Full step-by-step guidance is brought directly to the instrument touch screen.



LABORATORY WEIGHING SOLUTIONS

AUTOMATED POWDER & LIQUID DOSING

METTLER TOLEDO offers a wide range of **automated powder and liquid dosing and dispensing** instruments with the highest accuracy and safety.

Mettler Toledo's Automated Powder and Liquid Dosing features:

- High resolutions of 0.1 mg, 0.01 mg, 5 µg and 1 µg
- Fully automated process with unattended sample preparation
- Up to 30 samples can be dispensed in one run
- Full Traceability with RFID and barcode identification
- Automated powder dispensing from 1 mg to grams static-free
- Automatic data handling with SOP user guidance
- Ease-of-use
- Contamination-free dosing with one head for each powder
- Highly accurate concentrations



MOISTURE ANALYZER

METTLER TOLEDO's wide range of **moisture analyzers** are reliable, easy-to-use and high quality instruments with the highest measuring performance.

Mettler Toledo's Moisture Analyzers features are:

- Reliable results thanks to precise temperature control with halogen heating technology.
- Consistent measuring performance thanks to robust construction, comprehensive service offering and built-in tests of performance
- Intuitive operation with stepwise user guidance to prevent errors in daily operation
- Versatile data transfer and data management
- User-friendly operation
- Convenient reporting with barcode reader for ID management



LABORATORY WEIGHING SOLUTIONS

MOISTURE CONTENT IS NOT TO BE OVERLOOKED

Rugged by design

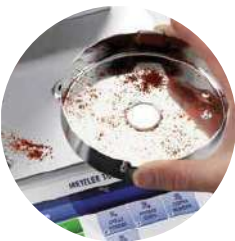
Free, unobstructed access to the weighing chamber from all sides simplifies handling of samples



Halogen heating guarantees Accurate temperature control between 40-230 °C



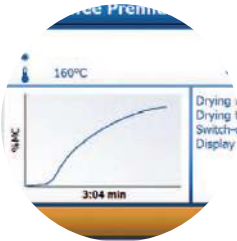
The instrument can be adjusted and tested at **operating temperature**, ensuring that the instrument is performing optimally under your specific working conditions.



Flat stainless steel surfaces, Easy to clean and robust



Real-time **drying curve** for Progress overview



Bright and sharp **touch-screen** that is Easy to read with Graphical user guidance Intuitive for anyone to operate



Professional level of moisture analyzers come with an **innovative hanging weighing pan** concept which moves the weighing cell away from spilled samples and from the heat of the sample chamber, and improves measurement results by eliminating adverse thermal effects on the weighing cell.



Aluminium sample pans and glass fiber filters are suitable for all applications to ensure best repeatability

LABORATORY WEIGHING SOLUTIONS

MASS COMPARATORS

Vacuum Mass Comparators

With its unrivaled repeatability Mettler Toledo's vacuum mass comparators are used by National Metrology Institutes to improve their measurement accuracy by performing mass determination at constant pressure or vacuum with up to 6 weights, fully automated and through Front Window, Load-Lock.

The METTLER TOLEDO M_one and M_10 comparators are designed for various artefacts with weighing capacity up to 10 kg and readability down to 0.1 µg that deliver results that are accurate to within 100 nanograms, whilst offering unique flexibility features.



Automated Mass Comparators

Solutions like AX automated weighing systems meet the highest accuracy requirements with a resolution up to 0.1 µg and a capacity up to 64 kg. Errors are eliminated due to software-controlled automatic operation of the -4place weight handlers. Measurement data is securely stored and handling effort minimized.



Robotic Mass Comparators

These comparators allow you to avoid a time-consuming and labor-intensive process of manual weight calibration.

Automating process with METTLER TOLEDO's e_Line and a_Line mass comparators provides traceability and assured results in significantly less time.

By automating the weight handling any errors in weight mix ups or eccentric weight placement are prevented. All data is transmitted online preventing of any transcription errors.





WEIGHING SOLUTIONS

METTLER TOLEDO

INDUSTRIAL WEIGHING SOLUTIONS

METTLER TOLEDO is also specialized in the high-performance industrial and process scales, interfaces, software, and their accessories. These industrial scales and systems are designed to be the most innovative, accurate and reliable systems of their kind.

INDUSTRIAL WEIGHING SOLUTIONS

BENCH SCALES, FLOOR SCALES & PALLET SCALES

Bench Scales and Portable Scales

Mettler Toledo's Bench Scales and Portable Scales are ideal for maximum efficiency in industrial applications with capacities up to 60 kg and a readability down to 0.2 g

The broad range of bench and portable scales includes:

- InVision Smart Scale with error-free operation.
- Bench Scales for a wide range of applications.
- Automotive Paint Mixing Scale.
- Industrial Basics Scales for basic weighing applications.



Platform Scales

Industrial weighing solutions that measure objects of very small size or up to 600kg at high accuracy. Their low-profile, ergonomic design increases operator efficiency, and complementary, user-friendly software solutions can be added to enhance overall productivity.



Floor Scales and Heavy-Duty Scales

Mettler Toledo offers maximized uptime and increased productivity floor scales and heavy-duty scales:

- Industrial Basics Scales for basic weighing applications with capacity up to 3000 kg.
- Floor Scales / Floor Scale with Ramp for heavy-duty weighing
- Pallet, Pallet Truck and Mobile Scales



Pallet, Pallet Truck and Mobile Scales

Mettler Toledo's Pallet Scales & Pallet Scale Calibration are easy-to-use and accurate thanks to the following features:

- Rugged construction with hot-galvanized steel or stainless steel for long-term durability.
- Safe, simple and easy loading procedures.
- Corrosion/explosion resistant.
- Shock absorbers that ensure secure, accurate weighing.



INDUSTRIAL WEIGHING SOLUTIONS

SCALE INDICATORS, LOAD CELLS & SOFTWARES

Scale Indicator & Scale Controller Systems

Mettler Toledo offers a variety of scales indicators and scale controller systems:

- Tank, Silo, Hopper and Bin Scale Indicators
- Vehicle Scale Indicators for vehicle and rail-weighing
- Bench, Portable and Floor Scale Indicators
- Hazardous-Area Applications Scale Indicators
- Custom Programmable Scale Indicators
- Scale Indicators and Transmitters for OEMs and System Integrators



Load Cell, Weigh Module, Load Sensor

Mettler Toledo's weigh modules, load cells and weight sensors and tailor made to the needs of instrument and machine manufacturers. Weight sensor / high precision load cells features high accuracy, high speed, weigh modules. Mettler Toledo offers a range of load cell, compression weigh module, load sensor, tension weigh modules, beam load cells, ring load cells and S load cells.

- Tanks on concrete or steel foundation.
- Wide capacity ranges from 5 kg up to 300 ton per weigh.
- Versatile usage for most industries.
- Reliable performance.
- Stainless steel version for food and pharma usage.



Softwares for Formulation & Statistical Quality Control

FreeWeigh.NET offers all relevant tools to avoid underfilling and comply with legislations including 21 CFR Part 11 Modules and Audit Trail. Also, it analyzes weighing data to continuously monitor critical process parameters. Its modular license model allows system adoption for any need.

FormWeigh.Net reduces operator errors and material waste to a minimum which results in more predictable manufacturing and greater profitability. It also delivers process transparency and automated batch evidence reporting. Easily achieved adherence to global food safety standards as well as full compliance with 21 CFR Part 11 for pharmaceutical and nutraceutical industries.



INDUSTRIAL WEIGHING SOLUTIONS

ALWAYS ROBUST, ACCURATE & RELIABLE

Bar code Scanner simplify material lot and batch tracking



Configure equipment, **create and manage recipes** and orders, generates track and trace data and reports



Meaningful diagrams help users to identify quality issues in the production process.



terminal prints batch data automatically and on demand

Hinged load plates are supported by **pneumatic springs** to guarantee safe opening and closing and provide fast access for service

Lifts **reduce downtime** required for cleaning which increases productivity



The robust **load-cell housing** features integrated overload protection and durable mechanical interfaces.



The built-in **lever and bearing mechanical structure** ensures the scale maintains peak performance, regardless of the application.



Weighing Platforms can be directly connected to any automation system.



For optimum **corrosion prevention**, the entire platform is made out of high-grade stainless steel

INDUSTRIAL WEIGHING SOLUTIONS

SOFTWARE AND SCALES DRIVERS

FormWeigh.Net

Recipe Management and Material Dispensing System that provides complete control over the recipe management and material dispensing process, which helps to ensure that each batch is made accurately and efficiently. Operator errors and material waste are eliminated resulting in greater profitability and predictable manufacturing.

Every action in FormWeigh.Net is automatically recorded, providing complete process transparency and automated batch evidence reporting. Quality checks are enforced directly at the weighing stations and are electronically documented for full track and trace. Adherence to global food safety standards as well as full compliance with 21 CFR Part 11 for pharmaceutical and nutraceutical industries is easily achieved.



FreeWeigh.NET

A Statistical Quality and Process Control is a PC based software solution that allows to control and fine tune perfectly customer production process. Modular license model allows system adoption to any needs. Flexibility and ease of use allows further optimization of production, increase quality and productivity.

FreeWeigh.Net provides all relevant tools to avoid underfilling and comply with legal legislations, including its Audit Trail and 21 CFR Part 11 Modules. At the same time production process is still monitored to reduce undesired overfilling and provide your production cost optimization.



Data Collection and Monitoring Softwares

Eliminate the need to enter data manually on a terminal, and skip directly to entering data on a PC. By streamlining this process, you save effort and increase processing speed up-to 20X's.

Use Data+ across multiple machines to improve consistency in processing and reporting. Achieve consistent quality that is reliable and easily traceable especially during an audit.

Use Collect+ to gain insight into your production, whether your portioning food products, counting metal or plastic components, or monitoring levels in your chemical tanks. Watch the video to see what Collect+ can do for you.





ANALYTICAL SOLUTIONS

METTLER TOLEDO

ANALYTICAL INSTRUMENTS

METTLER TOLEDO's offer a whole range of analytical Instruments for potentiometric titrators and Karl Fischer titrations, besides the range of basic handhelds and flexible multi-channel meters, METTLER TOLEDO offers a full spectrum of premium quality pH, conductivity, DO and ion meters as well as refractometers and UV/VIS Spectrophotometers and thermal analysis instrumentation.

C-Therm delivers thermal conductivity instruments that simplifies thermal conductivity and thermal effusivity analysis for researchers and material scientists.

ANALYTICAL INSTRUMENTS

TITRATORS & PH METERS & DENSITY METERS

Volumetric, Potentiometric & Karl Fischer Titrators

Mettler Toledo offers a complete range of titrators and accessories to cover your whole titration applications:

- Excellence Titrators with complete application range including Karl Fischer and full user and data management including FDA 21 CFR 11 with LabX software.
- Potentiometric Compact Titrators that are suitable for expert and routine user groups and pre-programmed optimized method setup.
- Karl Fischer Titrators with volumetric and coulometric autotitrators, Easy One Click water determination and InMotion Karl Fischer oven autosampler for full automation
- High-throughput titration systems with autosampler systems and liquid handling automation.



pH and Conductivity Meters

These meters include the measurement of pH, ion concentration, ORP and dissolved oxygen as below:

- Benchtop pH meter for the highest precision and solid compliance.
- Portable pH meter for mobile pH applications in the lab and field.
- Analytical sensors for measurement of pH, ORP, conductivity, ion concentration & DO.
- pH standard solutions to ensure high measurement precision.
- pH automation & software for higher productivity & compliance.



Density Meters

Mettler Toledo's wide range of accurate, fast and intuitive benchtop and portable digital density meters are divided into the following types:

- Excellence density meters that measure almost any sample with high reliability and guaranteed precision
- Standard EasyPlus density meters that assure high accurate results
- Portable density meter that measures different types of samples within seconds.
- Automated density measurement for increased results repeatability and reliability.
- Multiparameter systems which measure all parameter at once for increased data quality.



ANALYTICAL INSTRUMENTS

UV/VIS SPECTROPHOTOMETER & REFRACTOMETERS

Spectrophotometer UV/VIS

Mettler Toledo's UV VIS Micro-Volume Spectrophotometry features:

- Wide concentration ranges without further dilutions.
- Secure locking of the arm during measurement.
- Automatic or manual pathlength selection.
- Ergonomic Design that allows a comfortable and safe workflow.
- Open access to the sample area.
- Fast and easy cleaning of the instrument with the removable stainless steel top cover.
- The ability to choose between two measurement modes.
- Easy and intuitive way to run tasks with One Click Operation.
- The instrument can be operated as stand-alone with no need of PC.
- Compact versatile layout of optical components.



Refractometer

Mettler Toledo's digital refractometers (Brix meters) are designed for use in the production line and in the laboratory and can convert the measured refractive index into other units like HFCS, Alcohol %, Brix and more.

Mettler Toledo's digital refractometers include:

- Excellence refractometers that measure any sample with high reliability and precision.
- Standard EasyPlus refractometers with remarkably simple user interface & accurate results.
- Portable refractometers that can be used in the lab and on-the-go.
- Automated refractometry measurement
- Multiparameter system.
- Refractometry software & accessories.



ANALYTICAL INSTRUMENTS

MELTING POINT & DROPPING POINT

Melting Point Apparatus

There is no need for continuous visual observation with our Excellence Melting Point Systems. The measurement is done fully automatically, detection of transmitted light combined with video observation that ensures that the melting point, melting range, slip melting point, boiling point, and cloud point measurements are reliable.

- Simple One Click™ Operation

The One Click™ user interface enables users to start measurements with a single click of the button.

- Color video recording

With the high resolution on-screen video, measurements can be observed in real time or conveniently replayed to verify the results.

- Trusted performance

The instrument offers automatic detection of melting, boiling, cloud, and slip melting points all in one.



Dropping Point Apparatus

Mettler Toledo's Dropping Point Excellence System facilitates the measurement of the dropping point or softening point of pitch, asphalt, resins, and many more materials. Manual determinations can be performed automatically, and videos and results are stored on the instrument or can be exported to a network.

- Simple One Click™ Operation

The One Click™ user interface enables users to start measurements with a single click of the button.

- Color video recording

With the high resolution on-screen video, measurements can be observed in real time or conveniently replayed to verify the results.

- Trusted performance

With the visual camera observation and digital image analysis, highly accurate dropping/softening point temperatures are obtained fully automatically.



ANALYTICAL INSTRUMENTS

EXCELLENCE TITRATORS



Sensors and burettes are **automatically recognized** when connected. Avoid errors by eliminating extra data entry steps and reduce instrument setup time.



Accurately measure water in liquid or solid samples from %0.001 to %100.



Users are able to **customize their screen** and short-keys and access these to start analyses and workflows quickly and easily



The **SmartChemicals** accessory enables instant wireless transfer of titration chemicals' identity and shelf life data to the titrator.



Automatic burette recognition feature ensures that all quality relevant data such as concentration, titer and expiration date are promptly read in and checked, irrespective of the drives on which the burettes with the titrants are present.



Compact titrators support an **automatic Rondolino sample changer**. Analysis of up to 9 samples plus automated cleaning and conditioning functions speed up your daily tasks.



The **password-protected** user management system coupled with user rights guarantees that critical data cannot be changed by mistake

ANALYTICAL INSTRUMENTS

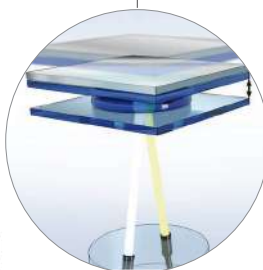
UV VIS SPECTROSCOPIC WORKFLOWS

LockPath ensures that the available wavelengths at 0.1 and 1 mm are accurately defined. Thanks to the rugged patented design, pathlength drift is excluded.



Fully automated **multi-parameter measurements** e.g.:

- Determination of absorbance at specific wavelength, pH, and acidity of drinking water.
- Determination of absorbance at specific wavelength, pH, acidity, Brix



FastTrack UV/VIS technology comprises modern fiber optics in combination with array detection and a Xenon flash lamp. A full spectrum scan is performed within just 1 second.



Exceptional ruggedness and reliability, thanks to the **lack of moving parts in the optical section**, long-lasting Xenon flash lamp and state-of-the art optical fibers. Their flexible connectivity to printers, PC, storage devices and barcode scanners, make UV/VIS.



Spectrum **scans**, fixed **wavelength absorption** measurements, quantification with **calibration curves** or **kinetic analyses** are ready to use as direct measurements: Simply enter parameters, define the preferred workflow, store as a shortcut, and start the measurement with One Click.

ANALYTICAL INSTRUMENTS

SELECTIVE & EXCELLENT FOR EXPANSION



Offering the highest possible flexibility as you can **expand the instrument** at any time, adding new measurement parameters



it is possible to use our perfectionION™ series of combined ion selective electrodes as well our collection of half-cells. For measurements with half-cell sensors there is an input for connection of a reference electrode.



ISM sensors are automatically identified by the instrument, preventing the use of the wrong sensor ID by mistake



USB, Ethernet and RS232 interfaces allow the connection of a barcode reader, Rondolino sample changer, USB stick, network and METTLER TOLEDO printers and a PC with LabX direct software



The **optional uMix™ magnetic stirrer** provides an extra degree of flexibility for methods
Stirring can be setup individually for measurement or waiting steps in your method and the stir speed adjusted to reflect the sample's vessel size and viscosity.

By a single keypress you can switch **between two different views** with varying degrees of information

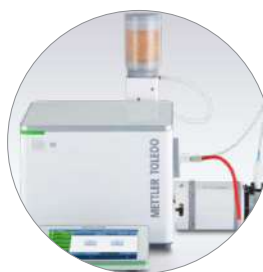


INDUSTRIAL LABORATORY SOLUTIONS

AUTOMATED REFRACTOMETRY



Regular calibration with certified and traceable standards ensures accurate measurements. Start verification immediately without the need to manually enter additional texts: simply scan in the barcode on the standard, and run the calibration



Fill and rinse the measuring cell with the **SPR200 sampling pump**. Utilize the DryPro drying pump for quick and efficient drying of your density meter.



The **status light** will show if the instrument is ready (green), busy (flashing), or waiting for operator interaction (orange).

The **Peltier thermostat** maintains the measurement cell at a constant temperature, enabling highly accurate density and refractive index measurements.



Accurate and reliable **results**

Brix, refractive index and more: Our refractometers master measurements of a wide variety of challenging samples with high repeatability and an accuracy of up to 5 decimal places



The **large touchscreen** terminal with the intuitive One Click user interface minimizes training and operator influence. Simply press on the pre-programmed shortcut to run your analysis. The instrument status light will show you if it is ready, busy, or waiting for operator interaction.

ANALYTICAL INSTRUMENTS

AUTOMATIC DETERMINATION



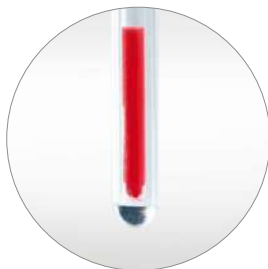
Boiling Point

The boiling point is a characteristic physical property of a compound. Knowing the boiling point of a liquid can help in selecting the optimal process temperature.



Cloud Point

The cloud point is defined as the temperature at which an aqueous solution becomes turbid or "cloudy". Knowing the cloud point helps in determining the best performance temperature range.

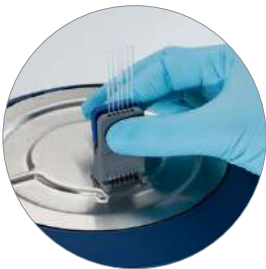


Slip Melting Point

The slip melting point is the melting point of waxy solids and is defined as the temperature at which a sample has softened sufficiently to rise in an open capillary tube. It is used to characterize cosmetics, fats and many others



The **unique design** allows you to insert the capillaries directly into the instrument.



With the Excellence Melting Point System, you can run **up to six samples** simultaneously, saving you valuable time and effort.



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 initial screen.



Measurement results can be influenced by the operator. Save time and money and reduce operator training and influence with **fully automatic determination** of melting, boiling, slip melting, and cloud points.

ANALYTICAL INSTRUMENTS

MULTIPARAMETER

LiquiPhysics™ Excellence can combine more than density and refractive index. The systems can also be flexibly upgraded to measure pH, conductivity and color simultaneously.

The UV/VIS Excellence line encompasses **three models for cuvette measurements** and one dedicated micro-volume instrument for life science applications.

- Using **pressurized air** instead of suction enables reliable sampling of highly viscous samples (up to 000'36 mPa*s) and prevents bubble formation.
- The **measurement cell** is automatically rinsed with one or two different solutions
- **Sample protection:** Vials can be sealed and opened just before the actual measurement.
- Superior sampling, Simple and efficient cleaning and Sample protection.



Our **space-saving** system enables you to combine a density meter with a refractive index cell to measure both parameters in one go

intuitive touchscreen operation and high measurement performance combined with a complete security package for safe results and solid compliance



With **Smartcodes™**, LiquiPhysics™ Excellence takes a decisive step forward in barcode reading initiatives



Versatile
The **powerful SC1 and SC30 automation** units can completely automate the measurements of such products, even for samples that are solid at ambient temperature.

ANALYTICAL INSTRUMENTS

THERMAL ANALYSIS

Differential Scanning Calorimetry (DSC)

the DSC instruments are the best choice for manual or automatic operation, from academic research and industrial development to quality assurance and production.

Measure samples with the most sensitive DSC on the market – ideal for investigating all kinds of materials and effects

The DSC utilizes an innovative patented DSC sensor with 120 thermocouples which guarantees unmatched sensitivity.



Chip Calorimetry (Flash DSC)

The Flash DSC +2 revolutionizes rapid-scanning DSC. The instrument can analyze reorganization processes that were previously impossible to measure. The Flash DSC +2 is the ideal complement to conventional DSC. Heating and cooling rates now cover a range of more than 7 decades.

Take advantage of the fastest commercially available DSC – perfect for studying rapid crystallization and reorganization processes in a temperature range from –95 to 1000 °C.



High Pressure Differential Scanning Calorimetry (HPDSC)

Increased pressure influences all physical changes and chemical reactions in which a change in volume occurs.

Study thermal effects under pressure – increase the reaction rate or shift evaporation to higher temperature

For material testing, process development or quality control there is often no alternative to DSC measurements under pressure.



Thermogravimetric Analyzer (TGA)

TGA instruments deliver trustworthy results using the world's best micro and ultra-micro balances with sub-microgram resolution over the whole measurement range.

Routine measurements are started quickly, safely and easily with the unique One Click™ function from the instruments' color touchscreen display. Sample identification can be done with a bar code reader.

Efficient and reliable operation around the clock is ensured by the robust, factory endurance tested sample robot.



ANALYTICAL INSTRUMENTS

THERMAL ANALYSIS

Simultaneous Thermal Analysis (TGA/DSC)

The TGA/DSC +3 provides trustworthy results using a TGA balance from the worldwide leader in weighing technology with position independent weighing, automatic internal calibration weights, a wide measurement range, the best minimum weight performance and the highest weighing accuracy and precision. It allows users to analyze a wide variety of sample types up to 1600 °C.



Thermomechanical Analysis (TMA)

The TMA/SDTA +2 can be used for a wide range of applications due to its broad temperature range and the wide choice of force parameters in compression and tension modes. As a result, the TMA/SDTA +2 quickly provides characteristic information on numerous types of samples, for example very thin layers, large sample cylinders, fine fibers, films, plates, soft or hard polymers, and single crystals.



Dynamic Mechanical Analyzer (DMA)

DMA is an important technique used to measure the mechanical and viscoelastic properties of materials such as thermoplastics, thermosets, elastomers, ceramics and metals.

In DMA, the sample is subjected to a periodic stress in one of several different modes of deformation (bending, tension, shear and compression).

Modulus as a function of time or temperature is measured and provides information on phase transitions.



Hot Stage Microscopy Systems

Hot-stage microscopy is a powerful method which is widely used to visually examine all kinds of thermal transitions when the sample is heated or cooled.

Observe your sample while it is heated or cooled – and understand better the physics of a transition

The heart of all hot-stage systems is the furnace with a heating element beneath and above the sample, which guarantees outstanding temperature uniformity in the sample.

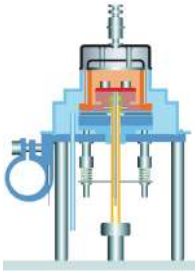


ANALYTICAL INSTRUMENTS

OBSERVE COMPOSITIONAL & MECHANICAL PROPERTIES



The **sample robot** can process up to 34 samples even if every sample requires a different method and a different crucible.



The **silver furnace** is very symmetrical to improve the resolution by incorporating direct heating through heating block beneath the DSC sensor



The **FRS +5 sensor** has **56 thermocouples** and provides high sensitivity and unprecedented temperature resolution.



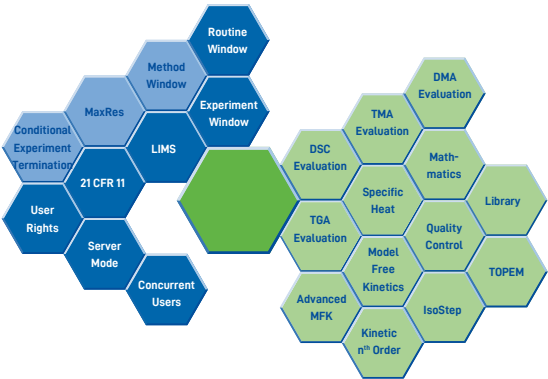
Ergonomic design; If you insert samples manually, you can rest your hand on an ergonomically shaped support surface.



The **One Click™ function** allows you to easily and efficiently start a predefined method.



Built-in mass flow controller (MFC) gas supply units allow accurate and repeatable investigation of material properties under a variety of atmospheres



STARE SOFTWARE is the most complete and comprehensive thermal analysis software on the market and provides unrivalled flexibility and unlimited evaluation possibilities.

Data is securely protected against loss or modification.

ANALYTICAL INSTRUMENTS

LABX SOFTWARE

LabX™ Balance software

LabX™ Balance software offers central control of instruments, tasks and users, SOP guidance on the balance terminal, and elimination of manual transcription.



LabX™ Titration software

LabX™ Titration software connects to your laboratory instruments and speeds titration analyses via electronic data flow, while ensuring flexibility and compliance across all users.



LabX™ Density and Refractometry software

LabX™ Density and Refractometry software provides electronic data management, supports compliance and connects your instruments for simultaneous analyses.



LabX™ pH software

LabX™ pH software connected to the SevenExcellence™ pH Meter provides full data integrity. In combination with the InMotion™ Autosampler, it enables automated measurements of more than 300 samples.



LabX™ UV Vis Spectrophotometer software

LabX™ UV Vis Spectrophotometer software stores all your data automatically in a secure database to support easy result handling. Stay compliant with automated performance verification.



LabX™ Melting Point software

LabX™ Melting Point software provides secure and flexible data handling, and supports compliance with 21 CFR Part 11 and seamless integration into LIMS, ELN or ERP systems.



ANALYTICAL INSTRUMENTS

MULTIPLE INSTRUMENTS, ONE SOFTWARE

Streamline processes and reduce system maintenance with LabX™ laboratory software

- Manage instruments, resources, SOPs, tasks and users centrally, then distribute to connected instruments.
- Seamlessly integrate your lab systems into ELNs, LIMS or ERPs via the single LabX interface to cover complete workflows.
- Reduce effort for validation, maintenance and support of your computerized lab systems.
- Ensure smooth operation of your lab systems with a single interface to learn.

Compliance Made Easy:

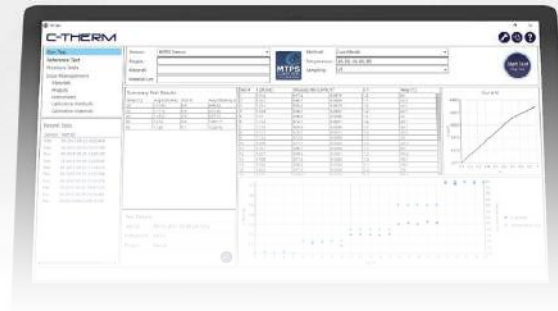
- Fulfil regulation and data integrity requirements efficiently with LabX™ laboratory software:
- Ensure traceability and data integrity according to the ALCOA+ framework throughout the workflow.
- Keep all technical features, including the audit trail and electronic signatures, at hand to support compliance with regulations such as 21 CFR Part 11.
- Access all your data quickly and easily during an audit.



Increased Workflow Efficiency

Speed up your daily work with LabX™ laboratory software:

- Automate your multi-parameter workflows to increase throughput and reduce cost per sample.
- Prevent transcription errors thanks to electronic data management functionality that automatically collects complete data from your analyses.
- Program your standard operating procedures (SOPs) into LabX workflows, then let the software guide operators step by step at the instrument terminal to prevent errors.
- Ensure only adjusted and calibrated resources are in use with LabX asset management



C-Therm Technologies provides sensor solutions for R&D, manufacturing and quality control environments, offering the latest in rapid, non-destructive thermal analysis instrumentation

THERMAL CONDUCTIVITY

TRIDENT - 1 Instruments and 3 Methods

Trident unleashes the power of three different transient methods with the ultimate toolbox for thermal conductivity measurement. MTPS, TPS and TLS all in one modular package

It has the fast, easy and highly accurate. A single-sided, "plug & play" sensor suitable for testing solids, liquids, powders and pastes. Offers maximum sample versatility. Conforms to ASTM D7984.



TCi™ - Thermal Conductivity Analyzer

C-Therm's touch tester is the only product for quantifying touch performance that fully complies with ASTM D794. The Tx Touch Tester is employed by the top global sports apparel brands and textile testing labs including: adidas, Columbia Sportswear, Marks (Canadian Tire), Intertek, the Taiwan Textile Research Institute, and Bureau Veritas.



High-Precision Dilatometers

With unparalleled ease-of-use, high adaptability, and modular design, C-Therm dilatometers offer researchers a robust cost-effective solution to their characterization needs.



TCKit – Thermal Conductivity Kit

An economical "do-it-yourself" solution, the TCKit is targeted primarily towards academic researchers. Employing the Transient Plane Source (TPS) method, the TCKit includes the tools & software needed to build and customize a thermal conductivity analyzer at a fraction of the price.





ANALYTICAL SOLUTIONS

METTLER TOLEDO

PIPETTES & LIQUID HANDLING SYSTEMS

METTLER TOLEDO is the technology leader in the unmatched, very precise and accurate liquid handling laboratory instruments and solutions which guarantee better results at higher sensitivities.

Commitment to quality, innovative design, and state-of-the-art production results in high-quality pipette products that deliver years of accurate and reliable operation. Together, Mettler Toledo's pipetting products and services form a complete solution that are called Pipetting °360™.

PIPETTES & LIQUID HANDLING SYSTEMS

PIPETTES

Manual Single Channel Pipette Pipet-Lite XLS

The Pipet-Lite XLS+ single channel manual pipette is among the most ergonomic manual pipettes available.

- Low spring forces
- Autoclavable liquid end



Manual Multichannel Pipette

Multichannel Pipettes from Rainin. Pipet-Lite XLS+ new liquid ends are made of durable, lightweight materials and new mechanical designs.

- Lightest touch
- Superior channel-to-channel consistency



Manual Multichannel Adjustable Spacer Pipet-Lite XLS

For speed, ease and accuracy, nothing beats the Rainin Pipet-Lite XLS Adjustable Spacer pipette for streamlining complex workflows.

- Fast, changeable tip spacing
- Secure volume lock



Electronic Single Channel Pipette E4 XLS

With the Rainin E4 XLS+ Single Channel Electronic Pipette, METTLER TOLEDO has set the standard for simplicity and performance in electronic pipetting.

- PureSpeed on Board
- GLP/GMP Secure



Electronic Multichannel Pipette E4 XLS

Multi-dispense, mixing and other pipetting modes on the E4 XLS+ multichannel pipette are easy to use and minimize setup time for high throughput work.

- Fast format change
- Simplify Repetitive Pipetting



Electronic Multichannel Adjustable Spacer Pipette E4 XLS

Reduce up to 98% of your pipetting steps

- Simplify Repetitive Pipetting
- GLP/GMP Secure



PIPETTES & LIQUID HANDLING SYSTEMS

HIGH-THROUGHPUT SYSTEMS & ACCESSORIES

Repeater Pipette

The AutoRep S is a precise, accurate repeater pipette that saves time, with ergonomic features that reduce user fatigue. Flexible volume ranges and a wide selection of quick-change positive-displacement syringe tips ensure precise performance from 2 µl – 5 ml.



Positive Displacement Pipette

specially suited for liquids with high densities, viscosities, or vapor pressures. A disposable piston, which moves within a plastic capillary, makes direct contact with the liquid.



Pipette Tips

Made from %100 virgin polypropylene in a fully automated, Class 100,000 clean room facility for accurate touch-off.

- BioClean Ultra Tips
- Special Application Tips
- Sample Preparation Tips



LiteTouch System and Universal Fit

Rainin tips optimize work with different kinds of pipettes:

- LTS: Rainin LiteTouch System™ pipettes
- UNV: Universal-fit pipettes, by Rainin and other manufacturers.

Unique to Rainin, the LiteTouch System connects a specially shaped nozzle to a perfectly matched LTS tip to deliver the industry's lowest tip mounting and ejection forces.



Pipette Management

Control your pipettes with SmartStand and EasyDirect Software.



High-throughput Pipetting

From completely manual to semi-automated, Rainin -384/96well pipettors and consumables deliver outstanding performance.

- Automated Pipetting System - BenchSmart™96
- Liquidator 96™ Manual Pipetting System





ANALYTICAL SOLUTIONS

METTLER TOLEDO

AUTOMATED REACTORS AND IN SITU ANALYSIS

METTLER TOLEDO is the technology leader in the unmatched, very precise and accurate liquid handling laboratory instruments and solutions which guarantee better results at higher sensitivities.

Commitment to quality, innovative design, and state-of-the-art production results in high-quality pipette products that deliver years of accurate and reliable operation. Together, Mettler Toledo's pipetting products and services form a complete solution that are called Pipetting °360™.

AUTOMATED REACTORS AND IN SITU ANALYSIS

AUTOMATED REACTORS FOR CHEMICAL PROCESS DEVELOPMENT

ReactIR In Situ Reaction Analysis

Mettler Toledo ReactIR is the first system that truly merges the power of real-time, in situ FTIR with equivalent operational convenience. ReactIR is ready for every chemist and for every experiment. It uses solid-state cooling technology to deliver best-in-class performance. Small, stackable units save valuable space in the fume hood offers flexibility to deploy ReactIR in various locations across the lab



Automated Synthesis & Process Development

The innovative chemical synthesis reactors, EasyMax and OptiMax, are easy-to-use platforms that accurately and precisely control reaction parameters and execute recipes, thus enabling every chemist to perform reactions reproducibly.

Connect and automate your jacketed reactor in the lab and control thermostats, stirrers and pumps with a single touchscreen interface that provides a consistent control platform across all laboratory reactors.



Automated Synthesis & Process Development

Automated sampling is an approach used to overcome challenges associated with common laboratory sampling tools (such as pipettes and syringes), including accuracy, reproducibility and availability of personnel.

EasySampler is an automated and unattended sampling technology – delivering high-quality samples, day and night. This unique, patented probe-based technology has a micro-pocket



Reaction Calorimeters

EasyMax 102 HFCal, EasyMax 402 HFCal and Optimax HFCal are small-scale heat flow calorimeters that combine the benefits of a synthesis workstation and a reaction calorimeter. These small-scale reaction calorimeters are designed for process safety screening and scale-up, and provide relevant reaction information early in the development process.



iC Software

Capture, prepare and share data with iC Data Center, determine process variables with iControl and iControl RC1e, analyze reactions with iC IR, optimize reactions with iC Kinetics, analyze particle size and shape with iC FBRM, iC Vision, and iC PVM.





CHROMATOGRAPHY AND MASS SPECTROMETRY



LIQUID CHROMATOGRAPHY SOLUTIONS

Shimadzu provides a range of liquid chromatography systems from HPLC (High Performance Liquid Chromatography) to UHPLC, preparative systems, and more. As for gas chromatography, Shimadzu provides the high-end gas chromatography system with exceptional performance and high-throughput capabilities and energy-saving capillary gas chromatograph.

LIQUID CHROMATOGRAPHY SOLUTIONS

HPLC SYSTEMS

HPLC/UHPLC/SFC Systems

HPLC systems delivers rugged, reliable results with less frequent interaction by the analyst. The systems maintain the excellent performance of its predecessor while addressing the need for automation efficiency.

Ultra high performance liquid chromatography (UHPLC) systems provide excellent chromatographic separation, and support high-speed, high-separation analysis.

Inert systems are ideal solutions for the separation of biomolecules by combining the elevated pressure tolerance of a UHPLC system with complete inertness of the sample flow path, ensured by the absence of wetted metal surfaces and offering ultra-high resistance to corrosion.



Preparative HPLC Systems

These systems are new preparative supercritical fluid chromatography systems that offer both the high basic performance developed for the previous models and original state-of-the-art preparative SFC technologies.

They resolve a number of issues in preparative tasks, reducing labor and improving efficiency while fitting into pre-existing workflows. Not only do these systems achieve superior recovery rates for purification, they provide flexible system configurations in a compact design, requiring low installation space and allowing maximization of lab resources.

The Ultra Fast Preparative and Purification Liquid Chromatograph (UFPLC) significantly reduces the cost and labor involved in preparative purification. Additionally, the system not only performs purification of target components, but can also recover impurities with high yield enabling direct impurity analysis.



LIQUID CHROMATOGRAPHY SOLUTIONS

HPLC SYSTEMS

LC2030-C NT

The LC2030-C NT is an integrated high-performance liquid chromatography system which prioritizes easy-to-use features for a smooth analysis experience. The intuitive touch-screen interface and stable column performance over many continuous injections ensure reliable data every time.



Nexera UC Prep

Nexera UC Prep achieve superior recovery rates for purification, it provides flexible system configurations in a compact design, requiring low installation space and allowing you to maximize lab resources.



Nexera Prep

Easy optimization of preparative parameters and scale up. Time- and energy-saving by automation of the purification workflow. Expandable to suit the sample/fraction number and volume.



GPC System

The Nexera GPC System provides highly reliable and highly extensible performance in a wide variety of applications. Hardware that provides rapid instrument stabilization and excellent reproducibility of analytical results, and software that includes analytical workflow automation and overlap injection functions and features a user-friendly analysis screen view contribute to improving productivity



LIQUID CHROMATOGRAPHY SOLUTIONS

HPLC SYSTEMS

GPC Systems

The GPC System provides highly reliable and highly extensible performance in a wide variety of applications. Hardware that provides rapid instrument stabilization and excellent reproducibility of analytical results, and software that includes analytical workflow automation and overlap injection functions and features a user-friendly analysis screen view contribute to improving productivity.

In addition, Analytical Intelligence functionality based on state-of-the-art digital technology provides highly reliable analytical results by preventing potential problems and ensuring the instrument is always in a stable state, regardless of the skill, knowledge, or experience level of the analyst.



Ion Chromatograph Systems

The HIC-ESP is a new anion suppressor ion chromatograph with built-in electrochemical suppressor, boasting the same low carryover and excellent injection precision characteristic of Shimadzu HPLCs to bring you highly-reliable results.

The newly developed anion suppressor prevents peak spreading and achieves high sensitivity, providing stable functionality even over long periods of use.

The HIC-ESP is suitable for applications in a wide range of fields including environmental science, medicine, chemistry and food science.



LC Software

A variety of softwares such as LabSolutions LCGC where both LC and GC systems are operated from the same software, enabling simultaneous control of multiple instruments from a single PC.

LabSolutions DB has a data management function and is compliant with the ER/ES Regulations.

More softwares are available from Shimadzu to suit your application.



LIQUID CHROMATOGRAPHY SOLUTIONS

HPLC COMPONENTS & ACCESSORIES

Solvent Delivery Unit

These models provide superior performance at micro flow rates, and enables stable delivery over a wide range of flow rates, from 0.0001 to 3.0000 mL/min. Its ultrahigh-pressure capacity allows using long columns packed with micro particles.



Autosampler

The Autosampler includes auto pretreatment and overlapping functions as standard, and an optional loop-injection method configuration to minimize delay volume.



Chemical Reaction Box

chemical reaction box is a new unit of Nexera series and is used for post-column derivatization analysis



Column Oven

The column can regulate the temperature in a range going from 10 deg. C above room temperature to 85 deg. C. The CTO-20AC, using an electronic cooler, can regulate the temperature in a large range going from 10 deg. C below room temperature to 85 deg. C.



Evaporative Light Scattering Detector for HPLC - ELSD-LT III and ELSD-LTII

The evaporative light scattering detector (ELSD) can even detect components with no UV absorption, such as carbohydrates, lipids, surfactants, and synthetic polymers. It minimizes noise and deliver optimum sensitivity for trace analysis



Fraction Collector

Efficient, Easy to Use, Space Saving. Up to six fraction collectors can be connected simultaneously. Compatible with many racks corresponding to the intended fraction volume. Can accommodate up to 3,240 fractions (6 FRC-40s, 10 mm tubes).



High Pressure Switching Valve

A 2-position 6-port high pressure flow switching valve. It has a small volume, but a high maximum allowable pressure of 130 MPa. They can be used to switch between two columns or used for automated pretreatment using an online pretreatment column.



LIQUID CHROMATOGRAPHY SOLUTIONS
ENSURE HIGH-QUALITY ANALYSIS DATA



Mobile Phase Monitor MPM-40

Reservoir tray weight sensors monitor the remaining mobile phase in real time.



UV-VIS Absorbance Detector
SPD-40 / SPD-40V Photodiode
Array Detector SPD-M40.

Temperature control improves performance stability.
Analytical data is linked to information about consumables to ensure traceability.



System Controller SCL-40, CBM-40

Supports remote monitoring via a smart device.
Mobile phases can be purged and baselines checked easily via the touch panel.



Solvent Delivery Unit LC-40 Series

Auto-diagnostics to detect problems during analysis, and an auto-recovery function.
Reduces space requirements with a dual solvent delivery system.

Column Oven CTO-40 Series

- Slim-type column oven with half the width of the previous model.
- Easy column attach/detach mechanism prevents peak broadening. (Nexlock)
- Automatic management of column information such as number of injections and pressure during analysis.
- Monitoring of column degradation through usage history (when used with LabSolutions)

Autosampler SIL-40 Series

PLATE CHANGER

- The injection speed is twice as fast as previous models, shortening multi-analyte processing times.
- Can perform continuous analysis on up to 44 microtiter plates.
- High reproducibility and ultra-low carryover for micro-volume injections.
- Automated sample preparation functions such as diluting samples, adding internal standards, and performing derivatization reactions, reduce labor.



CHROMATOGRAPHY AND MASS SPECTROMETRY



LIQUID CHROMATOGRAPH-MASS SPECTROMETRY

Whether you are looking to maximize throughput, increase sensitivity for trace compound analysis, or install a compact LC/MS system in a smaller lab space without losing out on workflow efficiency, Shimadzu provides a range of world-class LC/MS instruments and applications to meet your daily analysis needs. Unique automation features and intuitive software ensure a smooth analysis experience for both beginners and experts. Shimadzu LCMS solutions includes single quadrupole (SQ) LC-MS, triple quadrupole (TQ) LC-MS/MS, and quadrupole time-of-flight (Q-TOF) LC-MS/MS.

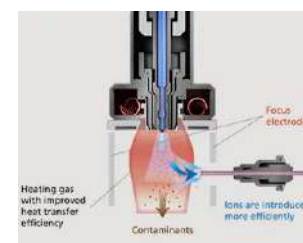
LIQUID CHROMATOGRAPH-MASS SPECTROMETRY

LCMS SYSTEMS - TRIPLE QUADRUPOLE LC-MS/MS

LCMS-8060NX

The LCMS-8060NX is a triple quadrupole mass spectrometer with world-class sensitivity and detection speeds. It boasts increased robustness and ease of use as well as Analytical Intelligence to maximize your laboratory's output.

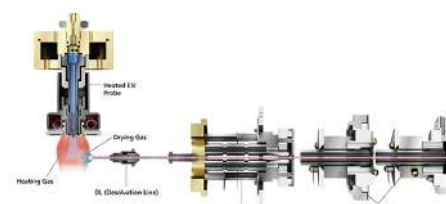
On top of the architecture of the LCMS-8060, it adds flexibility in optimizing parameters to achieve unsurpassed sensitivity. New ion optic components all increase robustness without compromising on a high ion transmission rate.



LCMS-8060

A new vision in sensitivity. It is suitable for drug discovery, manufacturing, clinical research, food safety, environmental, or drugs-of-abuse analysis.

LCMS-8060 is capable of detecting ultra trace components in complex matrices, which have been difficult to detect to date, both quickly and with high sensitivity. This will contribute to further improvements in data quality in all types of trace quantitative analysis applications, such as for biological samples, which requires the highest level of sensitivity.



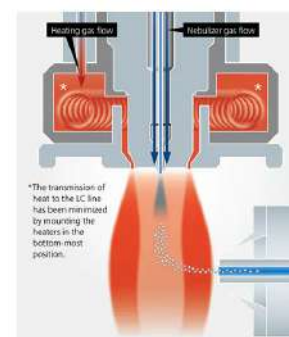
LCMS-8050

The first mass spectrometer to achieve a scan speed of 30,000 u/sec and 5 msec polarity switching time. It boasts the ideal balance of good data quality, high throughput and affordability for a wide range of challenging and routine applications.

Thanks to a heated ESI probe and the UFsweeper III collision cell, the LCMS-8050 achieves a level of sensitivity 30 times that of the LCMS-8030.

The UF Technology, the ultrafast measurement technology is evolved evolved, so measurements can now be performed even faster, without sacrificing data quality. At the same time, more compounds can now be measured in simultaneous qualitative and quantitative analysis.

The system can be used in a wide range of fields for a variety of applications, such as quantitative analysis which requires high sensitivity, multicomponent simultaneous analysis, and screening.



LIQUID CHROMATOGRAPH-MASS SPECTROMETRY

LCMS SYSTEMS - TRIPLE QUADRUPOLE LC-MS/MS

LCMS-8045

Designed specially for robust data acquisition with best-in-class sensitivity. It withstands long periods of continuous operation in laboratories in demand of reliable data.

Equipped with a heated ESI probe, the LCMS-8045 has the highest sensitivity in its class. The heated ESI probe, high-temperature heating block, desolvation line (DL) and drying gas, all act to promote desolvation and prevent contamination due to the penetration of liquid droplets into the MS unit. This improves the robustness, so reliable and high-accuracy data can be obtained over the long term.

The LCMS-8045 also achieves the world's fastest scan speed (30,000 u/sec) and polarity switching speed (5 msec). These enable ultra-high-speed, high-sensitivity analysis. The excellent cost performance of this system is demonstrated in food safety, environmental analysis, and other quantitative analyses, it can be upgraded to the LCMS-8060.



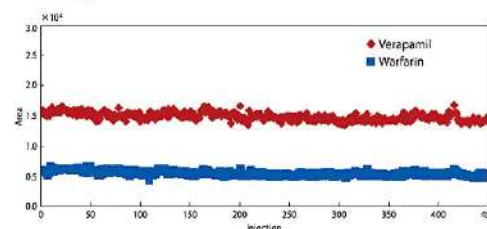
LCMS-8040

Introduces the new UF-Lens™ and UFsweeper™ II, the hallmark technologies underlying fast ion transmission and high sensitivity.

The LCMS-8040 was designed to provide significantly higher sensitivity while maintaining the high speed offered by the LCMS-8030.

Ultrafast MRM transition speeds, up to 555 MRMs per second (dwell times of 1 msec and pause times of 1 msec) are achieved. In addition, the LCMS-8040 features the polarity switching at 15 msec and high speed scanning rate of 15,000 u/sec.

By incorporating newly improved ion optics UF-Lens™ and UFsweeper™ II collision cell technology, the LCMS-8040 provides higher multiple reaction monitoring (MRM) sensitivity. This higher sensitivity expands the potential range of LC/MS/MS applications.



LIQUID CHROMATOGRAPH-MASS SPECTROMETRY

LCMS SYSTEMS - SINGLE QUADRUPOLE LC-MS

LCMS-2050

The LCMS-2050 single quadrupole mass spectrometer combines the user-friendliness of an LC detector with the excellent performance of MS to provide a complete package of easy to use high-level performance and compactness. To make it accessible to all users, the system is enhanced with technology and functions to ensure that even technicians unfamiliar with mass spectrometers can easily and efficiently perform analysis.

While delivering operational convenience on par with an LC detector, the LCMS-2050 provides the high speed, high sensitivity, and wide mass range that are the hallmarks of Shimadzu mass spectrometers. Capable of analyzing a wide range of compounds from high to low polarity, the LCMS-2050 can be used in a variety of markets and applications.

This new mass spectrometer system is also equipped with data analysis features using Analytical Intelligence and eco conscious functions, which contribute to labor and energy savings in the laboratory.



LCMS-2020

LCMS-2020 is optimized for the Prominence UFLC/UFLCXR Ultra Fast Liquid Chromatograph. Novel patent-pending technologies offer significantly enhanced scan speed and positive-negative ion polarity switching time, which are essential for UFLC, and simultaneously boost sensitivity.

Features

- The instrument combines the excellent compound selectivity that is a feature of the mass spectrometer with significantly enhanced total productivity – from method development to analysis. The LCMS-2020 plays a useful role in a range of fields, including the synthesis of compounds in the pharmaceutical and chemical industries.
- Superior sensitivity, repeatability, and linearity are achieved, thanks to the newly developed Qarray® optics.
- In MS scanning, a range of mass -to charge ratios are determined in successive 0.1 m/z steps.



LIQUID CHROMATOGRAPH-MASS SPECTROMETRY

LCMS SYSTEMS SOFTWARES

LabSolutions Insight

Mass spectrometry laboratories can acquire thousands of chromatograms per day. Insight provides tools to streamline data review and focus on the chromatograms that need critical attention. Insight automatically applies your peak detection criteria to data and flags any deviations, allowing you to analyze data more efficiently.



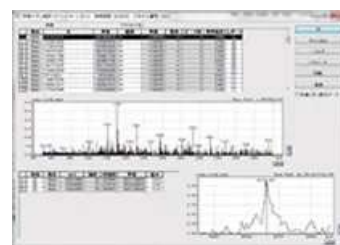
Traverse MS

Traverse MS data analysis software is intended for high-speed processing of MRM data acquired with Shimadzu triple quadrupole LCMS systems in the field of targeted metabolomics. Using multiple samples and multiple components, the software is able to create graphical and statistically analysis for metabolic pathway analysis.



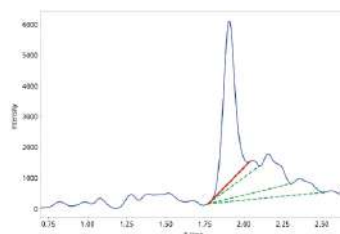
Multi-Charged Ion Analysis Software

This software calculates the molecular weight of a target compound based on data obtained from a multivalent ion MS spectrum.



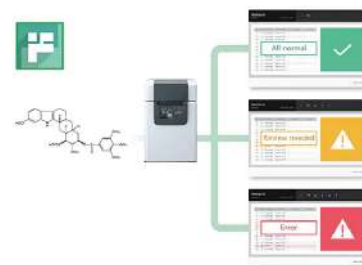
Peakintelligence™

Peakintelligence is a world-first algorithm incorporating AI assistance to search for chromatography peaks. Having learnt peak processing skills from experienced users, the AI can process data with the same skill level.



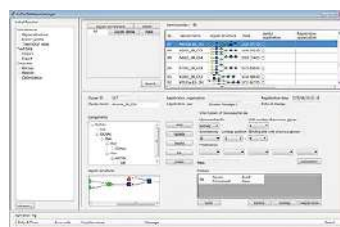
iFlagger

iFlagger for the LCMS-2020 ultra fast liquid chromatograph mass spectrometer uses parameters to assist in determining the presence of a target compound.



Erexim™ Application Suite

Erexim™ is a groundbreaking technology enables you to understand the structure and relative amounts of each glycans but you don't need to prepare glycan only.



LIQUID CHROMATOGRAPH-MASS SPECTROMETRY

LCMS COMPONENTS & ACCESSORIES

DPIMS™ QT

The instrument's outstanding design ensures that laser diode thermal desorption and atmospheric pressure chemical ionization (APCI) are performed rapidly on the sample to be analyzed.



DPIMS-8060

A triple quadrupole mass spectrometer with a DPIMS-8060 kit installed can acquire trace sample quantities using a probe and analyze component masses in the MS unit.



CLAM-2030

Fully automated sample preparation module for LCMS based on Shimadzu's extensive experience manufacturing clinical systems that perform blood coagulation analysis.



C2MAP System

The C2MAP™ System can be automated the process from pretreatment to measurement for culture supernatant samples and display temporal changes in the components as graphs.



DPIMS-2020

The DPIMS-2020 is a single quadrupole mass spectrometer based on using probe electrospray ionization. It uses a probe to remove a micro quantity of liquid from the sample placed on the sample plate and inject it into the MS unit for mass analysis.



LDTD Ion Source

The instrument's outstanding design ensures that laser diode thermal desorption and atmospheric pressure chemical ionization (APCI) are performed rapidly on the sample to be analyzed.





CHROMATOGRAPHY AND MASS SPECTROMETRY



GAS CHROMATOGRAPHY SOLUTIONS

Laboratories today require faster and higher performance analysis. Shimadzu GC Systems feature Analytical Intelligence to help achieve these goals. Clean Pilot, a system conformity test and LabSolutions™ can provide an automated workflow together with remote operation and monitoring from instrument startup to analysis completion. Automated workflows incorporate the work-style habits of experienced analysts. The result is reliable data collected over extended periods and higher productivity.

GAS CHROMATOGRAPHY SOLUTIONS

GC SYSTEMS

Nexis GC-2030

This system comes with the flexibility to accommodate a variety of applications, the Nexis™ GC-2030 supports the analyst's procedures beyond the laboratory, at virtually any location.

It features Analytical Intelligence to help achieve these goals and provides the best-in-class analysis accuracy.

Nexis GC-2030 is built with Up to four types of injection units or six types of detectors can be selected depending on the purpose of analysis and target components.

The Analytical Intelligence featured by the automated support functions utilizing digital technologies, such as M2M, IoT, and Artificial Intelligence (AI), that enable higher productivity and maximum reliability. It allows a system to monitor and diagnose itself, handle any issues during data acquisition without user input, and automatically behave as if it were operated by an expert. It also Supports the acquisition of high quality, reproducible data regardless of an operator's skill level for both routine and demanding applications.



GC-2014

User-friendly with high cost-performance, the GC-2014 gas chromatograph is an excellent option for routine analysis. It offers great flexibility with support for both packed columns and capillary columns, and includes a self-diagnostics function to prevent downtime and maximize lab efficiency.

Improved design and innovative technology for all of our injectors, detectors and for controllers equal or surpass the high-end technology leader.

Packed or capillary columns give you the freedom to choose the best technique for your measurement. Fully integrated multiple valve systems are made simple for optimum performance for SystemGC custom GC products.



GAS CHROMATOGRAPHY SOLUTIONS

GC SYSTEMS

GC-2025

The new-generation GC-2025 capillary gas chromatograph minimizes environmental impact by reducing power and carrier gas consumption while retaining the performance capabilities required for capillary analysis. The GC-2025 incorporates a digital flow controller that controls both the carrier and detector gases and a newly designed energy-saving column oven that features small volume and less heating loss, realizing a dramatic improvement in operation costs. The compact GC-2025 is the gas chromatograph for environmentally friendly, high value performance.

The system comes with a smaller installation footprint to more effectively utilize laboratory space and it cuts electric power costs compared to previous models to reduce the burden on the environment.



APPLICATION SPECIFIC GC SYSTEMS

Refinery Gas Analysis

RGA systems, available in numerous configurations, are designed to analyze various compositions in a variety of processes where CERGA makes it possible to precisely analyze those samples.



Natural Gas Analysis

A wide system GC lineup are offered for analysis of liquified gas, such as LPG, a dedicated injector with a vaporizer is available. Both manual injection and online injection are available.



Gasoline/Fuel Analysis

A gas chromatograph is used for composition analysis of gasoline and its additives in order to improve fuels' performance. In addition to excellent performance, Shimadzu's GC systems improve productivity



Detailed Hydrocarbon Analysis

DHA systems determine the bulk hydrocarbon group type composition (PONA: Paraffins, Olefins, Naphthenes and Aromatics) of gasoline and other spark-ignition engine fuels that contain oxygenate blends (Methanol, ethanol, MTBE, ETBE, and TAME) according to ASTM-D6730



GAS CHROMATOGRAPHY SOLUTIONS

APPLICATION SPECIFIC GC SYSTEMS

VUV PIONA+ Analysis

This high-speed gasoline PIONA analyzer is compliant with ASTM D8071 and supports simultaneous analysis of PIONA compounds, specific oxygenated compounds, and BTEX in gasoline. It can quickly analyze samples within 30 minutes.



Transformer Oil Gas Analysis

The Nexis GC-2030TOGAS3 system, equipped with a PDHID, enables the analysis of more trace amounts of permanent gas than conventional systems.



Impurity Analysis in Bulk Gas

High-purity gas is necessary in industries such as chemical, medical, and foods. Precisely controlled GC enables identification and quantitation of a trace amount of impurities in bulk gas.



High-Sensitivity Analysis System for Inorganic Gases

The high-sensitivity analysis system for inorganic gases can simultaneously analyze light hydrocarbons and low-concentration inorganic gases, including atmospheric components such as oxygen and nitrogen.



Trace Sulfur Analysis

The Nexis SCD-2030 is a next-generation sulfur chemiluminescence detection system. The dramatically enhanced sensitivity and reliability, the excellent maintainability, and the automation functions, a first for the industry, will improve laboratory productivity.



Trace Moisture Analysis System

The system separates and measures the moisture in a formulation of feedstock and provides sensitive and accurate results with measurements made down to a ppm level of moisture detection without any interference.

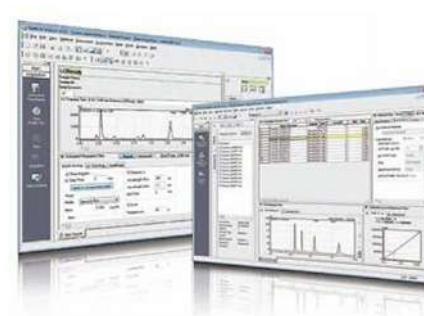


LC Software

A variety of softwares such as LabSolutions LCGC where both LC and GC systems are operated from the same software, enabling simultaneous control of multiple instruments from a single PC.

LabSolutions DB has a data management function and is compliant with the ER/ES Regulations.

More softwares are available from Shimadzu to suit your application.



GAS CHROMATOGRAPHY SOLUTIONS

GC COMPONENTS & ACCESSORIES

AOC-30 Series

The AOC-30 was designed to produce better quality results in a shorter amount of time and provide laboratories with a practical solution that is approachable, simple, and easy to use.



HS-20 NX series

The HS-20, developed as the best solution for volatile component analysis, has been improved and introduced as the NX series. The excellent basic performance and user-friendly design provide a powerful solution for scientists in both research and quality control laboratories.



Nexis SCD-2030

The Nexis SCD-2030 is a next-generation sulfur chemiluminescence detection system. It has been developed to fulfil the unmet needs of laboratories the world over. The dramatically enhanced sensitivity and reliability will improve laboratory productivity.



HS-10

The HS-10 headspace sampler is highly cost efficient, yet is equipped with advanced features such as a mixing function and the ability to heat-ahead the sample vials waiting for analysis.



VSO-2020

The VSO-2020 provides greater system flexibility. Gas sampling, pre-cut and back flush systems can be easily configured with the valve storage oven.



SLS-2020

The SLS-2020 GC system sample line selector can connect up to 12 gas lines used for analysis. Carryover effects can be minimized by using a purge gas.



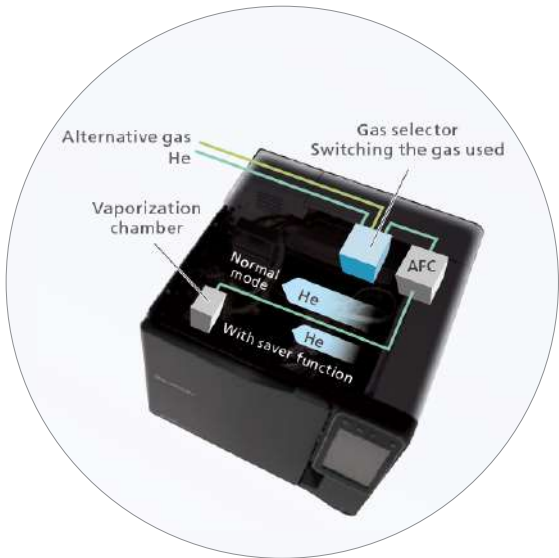
AGE-1000

An AGE-1000 air gas purifier can be used to remove hydrocarbons from compressor air in order to generate compressed air with hydrocarbon levels lower than Grade 1 high-purity gas (hydrocarbon concentration of 100 ppb).



GAS CHROMATOGRAPHY SOLUTIONS

THE NEXT INDUSTRY STANDARD

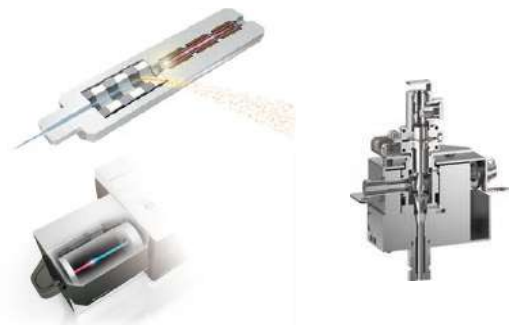


High performance injector/ high sensitivity detector

With the split /splitless sample injection method, the carrier gas saving function can reduce the amount of carrier gas released beyond the system from the split flow lines after transfer of the samples to the column during analysis

High-Sensitivity Detectors

- Barrier Discharge Ionization Detector (BID)
- Flame Ionization Detector (FID)
- Sulfur Chemiluminescence Detector (SCD)
- Thermal Conductivity Detector (TCD)
- Electron Capture Detector (ECD)
- Flame Photometric Detector (FPD)
- Flame Thermionic Detector (FTD)



Tool-free Column Installation

ClickTek™ connectors (option) make tool-free column installation a snap. The click sensation felt when finished attaching the column provides a more reliable connection and ensures a better seal under all operating conditions



One-touch Inlet Maintenance

The injection port can be opened or closed without tools by simply sliding the ClickTek lever. Replace the insert, slide the lever and feel the click for a leak-free install every time

GAS CHROMATOGRAPHY SOLUTIONS

THE PROVEN SOLUTION



High performance injector/
high sensitivity detector

Simultaneously install up to two analytical lines and up to three detectors.



High precision gas control

The injector and detector gas is controlled by the high performance modular electronic flow controller.



Column oven

Faster heating accelerates chromatographic separation and fast cooling reduces GC run time.



Big display

Big display for easy operation and providing all information at a glance.



Column oven

GC-2010 Pro incorporates a double-jet cooling system, which enables the reduction of cooling time from 450°C to 50°C in 3.4min, realizing more efficient and rapid cooling. In addition, with the ability of rapid heating, GC-2010 Pro can significantly reduce the analysis time.



CHROMATOGRAPHY AND MASS SPECTROMETRY



GAS CHROMATOGRAPH-MASS SPECTROMETRY SOLUTIONS

Gas chromatography-mass spectrometry (GC-MS) is an analytical technique that combines gas-chromatography (GC) and mass spectrometry (MS) to identify unknown substances or contaminants. Shimadzu is one of the world's leading manufacturers of gas chromatograph mass spectrometers. Shimadzu's GC-MS instruments boast ultra-high sensitivity and high efficiency, and are designed to maximize lab productivity while minimizing environmental impact.

GAS CHROMATOGRAPH-MASS SPECTROMETRY SOLUTIONS

TRIPLE QUADRUPOLE GC-MS/MS PRODUCTS

GCMS-TQ8050 NX

The Shimadzu triple-quad GCMS-TQ8050 NX is capable of performing unprecedented quantitative GC-MS/MS analyses of ultra-trace amounts, down to the femtogram level.

Equipped with a new, highly efficient detector and three forms of noise-reduction technologies, the GCMS-TQ8050 NX has never been more important in industries such as food safety, cannabis testing, forensics, and more.

To maximize the benefits of the Off-Axis Ion Optics, the system features three noise-reduction technologies and a detector with improved amplification performance. Due to these state-of-the-art technologies, the system can reliably detect ultra-trace femtogram-level quantities of ions. The resulting exceptional analytical sensitivity and robustness increase the value of solutions and open the door to new applications.



GCMS-TQ8040 NX

The Shimadzu triple-quad GCMS-TQ8040 NX features smart technologies to boost the efficiency of routine analytical work. For example, Smart MRM provides fully-automated MRM method development. It automatically determines all optimum transitions and collision energies, seamlessly incorporating them into the Smart Database Series.

With features like this, the GCMS-TQ8040 NX GC-MS/MS is so smart it almost runs itself! Perfect for applications in fields such as environmental monitoring and food science.

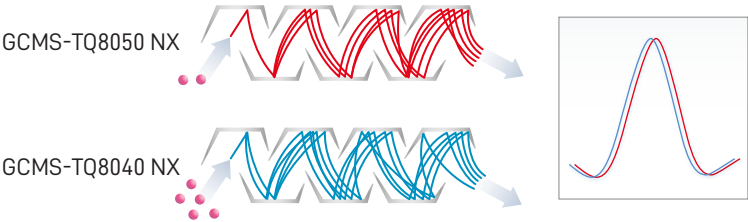
Equipped with an ion source that features high sensitivity and long-term stability, and a high-efficiency collision cell, the system can provide sensitive, stable analyses over a long period of time. Also, since it incorporates the Nexis™ GC-2030, high-precision control over flowrate and temperature is assured, enabling the acquisition of highly reliable data.

By displaying the time required for continuous analysis in real time, the time when the current continuous analysis will finish can be accurately confirmed. This increases the instrument operating time (active time) by reducing standby time required during continuous analysis or while switching between different users.



GAS CHROMATOGRAPH-MASS SPECTROMETRY SOLUTIONS

PIONEERING NEW FIELDS



High-Efficiency Detector

The GCMS-TQ8050 NX detects peaks more reliably than the GCMS-TQ8040 NX, even for substances with fewer ions reaching the detector. That means it can reliably analyze femtogram-level concentrations with fewer ions.



GAS CHROMATOGRAPH-MASS SPECTROMETRY

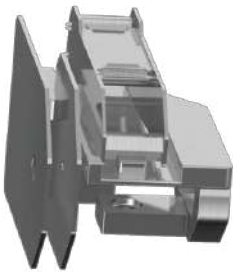
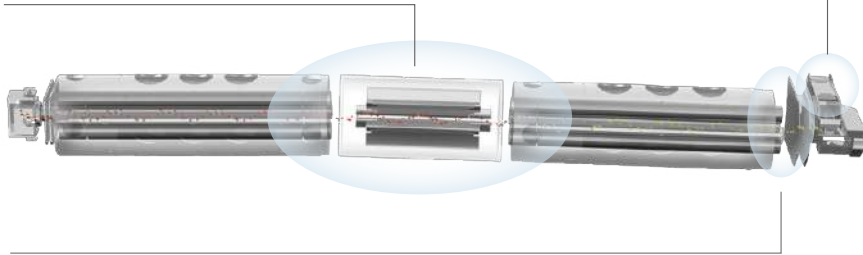
TRIPLE

OFF-AXIS Ion Optics

The OFF-AXIS Ion Optics eliminate noises such as metastable He ions without compromising sensitivity

Shielded Detector

Noise from outside the detector was reduced by installing a shield in the secondary electron multiplier



Overdrive Lens

Installing two lenses (overdrive lenses) in front of the electron multiplier reduces random noise from helium or argon and improves S/N. Applying voltage to the lenses improves S/N levels by reducing noise near the lenses and helping to focus the ions that pass through the mass filter

Long-Life Detector

Exhaustive efforts to reduce detector loads during analysis resulted in a significantly longer detector service life. Consequently, the instrument needs to be maintained much less frequently, which results in greater uptime.

GAS CHROMATOGRAPH-MASS SPECTROMETRY SOLUTIONS

TRIPLE QUADRUPOLE GC-MS/MS PRODUCTS

GCMS-QP2020 NX

The Shimadzu single quadrupole GCMS-QP2020 NX gas chromatograph-mass spectrometer (GC-MS) not only boasts the best performance in its class, but also the highest efficiency.

This new high-end single-quad GCMS excels in both ease-of-use and robustness. The role of high-performance analytical instruments is expanding in areas as diverse as environmental pollution monitoring, forensics and material science. Whatever your field, the efficient and reliable GCMS-QP2020 NX is tailored to meet the needs of your laboratory.

A large-capacity differential exhaust turbomolecular pump and a high-performance flow controller ensure that the utmost in sensitivity is obtained under all conditions used for GC. This sensitivity combined with high-speed analysis capabilities helps maximize laboratory efficiency by reducing analysis times. In addition, the system can be safely operated using carrier gases other than helium, such as hydrogen or nitrogen, thereby reducing operating costs.



GCMS-QP2010 SE

The GCMS-QP2010 SE is a single quadrupole gas chromatograph-mass spectrometer offering stable and cost-effective analysis for challenging compounds. A high-performance quadrupole mass filter ensures high sensitivity in both quantitative and qualitative analysis.

The GCMS-QP2010 SE is compatible with multiple sample introduction methods to enable a greater range of applications. The GCMS-QP2010 SE incorporates a front-opening chamber in a design that is both visually pleasing and practical, allowing maintenance to be performed with ease from the front of the instrument. "MSNAVIGATOR," which supports maintenance, has been improved to help the user perform instrument maintenance.

GC/MS analyses require optimization of many operating parameters. Data analysis may require many calibrations to be performed, and many unknowns to be quantified with results reported. GCMSsolution workstation software combines ease of use with versatile functionality to effectively perform these tasks.

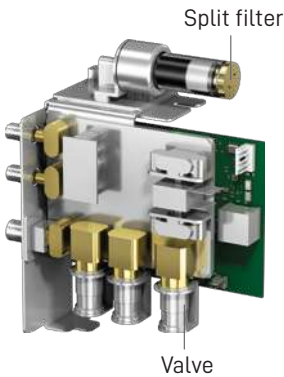
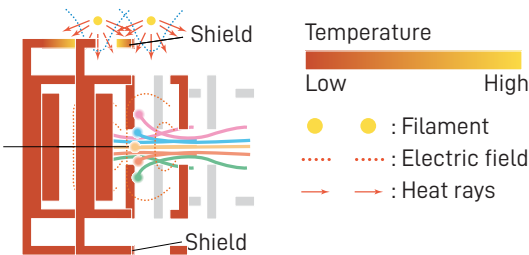


GAS CHROMATOGRAPH-MASS SPECTROMETRY SOLUTIONS

EXPAND YOUR LAB TO FULLEST POTENTIAL

Ion Source Featuring High Sensitivity and Long-Term Stability

The filament and the ion source box have been separated, which reduces the impact of the filament potential on the interior of the ion source. In addition, a shield is provided to block radiant heat generated by the filament, achieving a uniform temperature inside the ion source box. Thus, active spots inside the ion source are not prone to occur, enabling high-sensitivity analysis with long-term stability



Flow Controller (AFC-2030)

New Flow Controller Achieves Exceptional Reproducibility

A new flow controller (AFC) with a CPU uses various control methods to control carrier gas flow to a constant flow speed, flowrate, or pressure. It can also accurately trace the analytical conditions already being used.



One Touch Inlet Maintenance

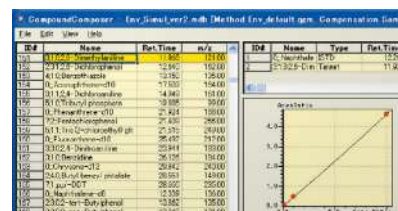
The injection port can be opened or closed without tools by simply sliding the ClickTek™ lever. Replace the insert, slide the lever and feel the click for a leak-free install every time.

GAS CHROMATOGRAPH-MASS SPECTROMETRY SOLUTIONS

GCMS SYSTEMS SOFTWARES

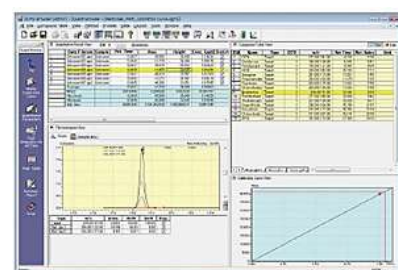
Compound Composer Database Software

"Compound Composer Database Software for Simultaneous Analysis" is an optional software of Workstation "GCMSsolution" for GCMS-QP2020 Series, GCMS-QP2010 Series.



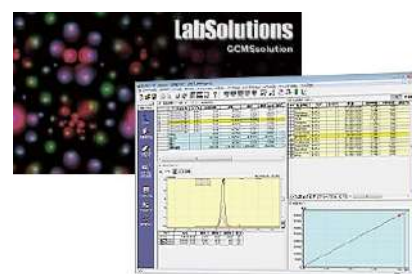
Mass Spectral Libraries and Databases

Optimized analysis conditions are registered and analysis can be started quickly. In addition to the quantitative database, calibration curve information is registered, which enables rough quantitative values to be obtained without analyzing standard samples.



GCMSsolution

GCMSsolution is the workstation software for Shimadzu GCMS-TQ series gas chromatograph mass spectrometers. comes with a comprehensive range of features for efficiently creating and implementing methods.



LabSolutions GCMS

LabSolutions DB/CS is the integration software for analytical instruments that complies with regulations regarding electronic records and signatures, such as "FDA 21 CFR Part 11" and "ER/ES guidelines".



LabSolutions Insight

Mass spectrometry laboratories can acquire thousands of chromatograms per day. Insight provides tools to streamline data review and focus on the chromatograms that need critical attention. Insight automatically applies your peak detection criteria to data and flags any deviations, allowing you to analyze data more efficiently.



GAS CHROMATOGRAPH-MASS SPECTROMETRY SOLUTIONS

GCMS COMPONENTS & ACCESSORIES

HS-20 NX series

The excellent basic performance and user-friendly design provide a powerful solution for scientists in both research and quality control laboratories.



Py-GCMS

Pyrolysis gas chromatography mass spectrometry (Py-GCMS) can be used to characterize most materials including insoluble and complex materials at trace levels often without any sample pretreatment.



TD-30 Series

The TD-30 was developed as the optimal solution for gas and materials analysis. Its outstanding processing ability and excellent expandability provide strong support for all types of analysis, from work in research departments to quality control.



AOC-20i/AOC-20s

The AOC-20 Series is the perfect solution for automated analyses. Its proven reliability and reproducibility allows the user to take full advantage of the GC or GC/MS system capabilities.



DI-2010

Direct sample injection (DI) is a method in which a sample is injected directly into the ion source without passing through the gas chromatograph (GC).



AOC-6000 Plus

The AOC-6000 Plus Multifunctional Autosampler enables various syringes injections, including liquid injection, headspace (HS) injection, and solid-phase microextraction (SPME) injection. The automatic syringe exchange RTC (Robotic Tool Changer) function enables continuous sample injection using different syringes.





CHROMATOGRAPHY AND MASS SPECTROMETRY



MALDI-TOF MASS SPECTROMETRY

MALDI-TOF (Matrix-Assisted Laser Desorption/Ionization Time-of-Flight) Mass Spectrometry is an analytical technique that measures the mass of molecules from a sample that has been embedded in a matrix by using a laser to ablate and desorb the molecules with minimal fragmentation. It is widely used in identification and characterization of higher molecular weight compounds (e.g.: proteins, peptides and synthetic polymers). Additionally, it is also used to identify microbes and check for food fraud.

MALDI-TOF MASS SPECTROMETRY

MALDI-TOF SYSTEMS AND COMPONENTS

MALDI-8030

The MALDI-8030 is the latest in a long line of MALDI-TOF products from Shimadzu. Instrument performance specifications is extended from those of the MALDI-8020 to cater for compounds best suited to analysis in negative ion mode. This dual-polarity, benchtop linear MALDI-TOF mass spectrometer delivers outstanding performance in a compact footprint, making it an ideal choice for today's increasingly demanding laboratories.



MALDI-8020

The MALDI-8020 is the latest in a long line of MALDI-TOF products from Shimadzu. This benchtop, linear MALDI-TOF mass spectrometer delivers outstanding performance in a compact footprint, making it an ideal choice for today's increasingly demanding laboratories.



MALDImini-1

With its simple configuration and compact size, it is possible to install the MALDImini-1 in places where mass analysis devices could not previously be used. Through ingenious engineering and innovation its footprint has been reduced to the size of a piece of paper.



MALDI-7090

The MALDI-7090 is targeted for proteomics and tissue imaging. It combines Shimadzu's extensive MALDI TOF-TOF mass spectrometry expertise with novel patented technology to provide ultimate performance in identification and structural characterization of biomolecules.



MALDI-TOF MASS SPECTROMETRY

MALDI-TOF SYSTEMS AND COMPONENTS

AXIMA Performance

The AXIMA Performance is one of the most powerful tools in mass spectrometry, delivering information-rich spectra with greater sensitivity and higher confidence in identification. It is an extremely versatile and powerful TOF-TOF system, integrating workflows for a diverse range of analytical needs



AXIMA Confidence

The AXIMA Performance is one of the most powerful tools in mass spectrometry, delivering information-rich spectra with greater sensitivity and higher confidence in identification. It is an extremely versatile and powerful TOF-TOF system, integrating workflows for a diverse range of analytical needs



AXIMA Assurance

High Performance Mass Detection

- Linear MALDI-TOF mass spectrometry for reliable mass information.
- An affordable, robust option for all laboratories requiring routine manual or automated analysis of a wide variety of sample classes.
- High sensitivity system using a variable repetition rate 50 Hz N2 laser and a variety of target formats to meet all sample throughput requirements



AccuSpot

The AccuSpot automates LC micro-fractionation, spotting and preparation for MS analysis. With the AccuSpot system, LC eluent can be accurately and continuously spotted onto target plates, in trace amounts (eg.50nL). This allows for automatic preparation of target plates for MALDI-TOF-MS measurements



SialoCapper-ID Kit

The AccuSpot automates LC micro-fractionation, spotting and preparation for MS analysis. With the AccuSpot system, LC eluent can be accurately and continuously spotted onto target plates, in trace amounts (eg.50nL). This allows for automatic preparation of target plates for MALDI-TOF-MS measurements



MALDI-TOF MASS SPECTROMETRY

AFFORDABLE CLASS-LEADING WORKHORSE

Quiet operation

<55 dB allows adaptability and placement beyond the conventional laboratory setting

Error-proofing workflows

Integrated barcode reader – when used with FlexiMass™-DS slides* – reduces pre-analytical misidentification errors

Best-in-class sensitivity and resolution

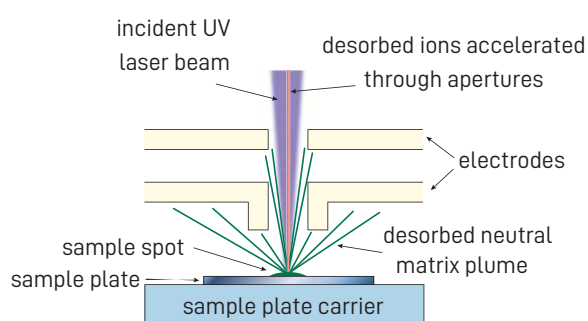
Easily detect analytes for your application

Innovative electronics

Fast, high bit-depth transient recorder provides rapid data transfer and more detail for your analysis

WideBore™ Ion Optics

This patented technology significantly reduces contamination from the desorbed MALDI sample. The near normal (on-axis) incidence of the MALDI laser beam and the camera view produce outstanding efficiency of the MALDI source and high quality sample images. The strong electrostatic lens delivers high sensitivity and resolution.

**Easy operation**

Intuitive popular MALDI Solutions™ software suite for instrument control allows your staff to be easily trained

Smallest footprint

The smallest instrument in its class – saves your valuable laboratory space

Multi-LED panel

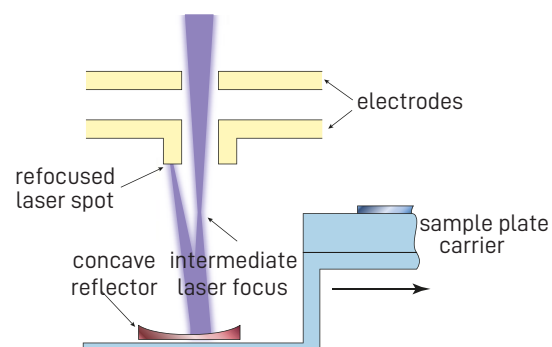
Front panel LED with more than 10 lighting configurations keeps you informed of instrument status

Flexibility

Dual-polarity ion source extends your full range of sample analysis

TrueClean™

Incorporated into the MALDI-8030, the Shimadzu patented TrueClean technology is a unique design which enables seamless self-cleaning of the ion optics, without breaking vacuum and no need to remove the ion optics. A fully automated process activated by the user, the MALDI laser (same one used for sample analysis) is reflected off a mirror in the sample analysis chamber to remove sample debris from the first lens, thereby extending the robustness of your system even further.



MALDI-TOF MASS SPECTROMETRY

THE NEXT GENERATION IN MALDI CID MS/MS



Powerful precursor ion selection

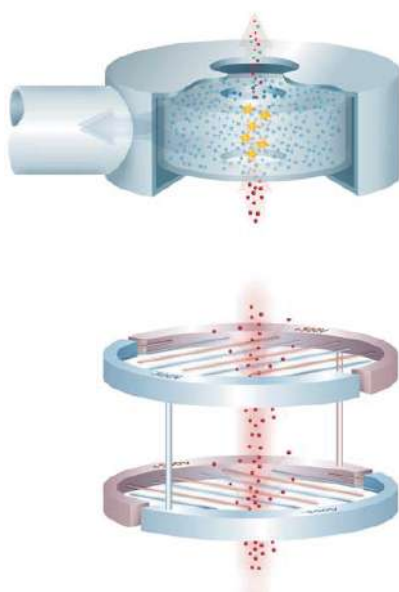
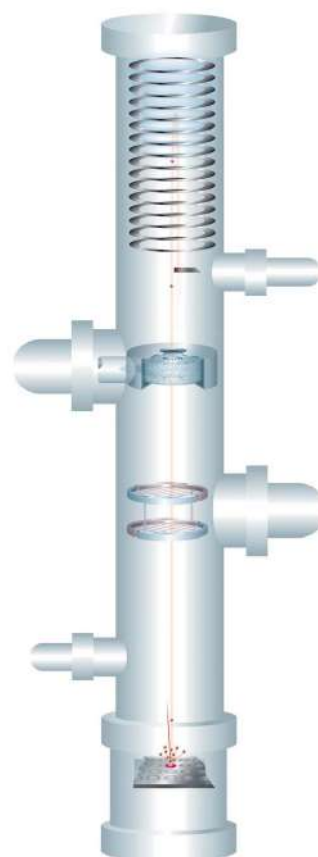
The revolutionary monoPULSE ion gate allows the selection of MS/MS precursors with industry-leading resolution. Ions from complex mixtures or closely associated neighbouring isotopic envelopes may be isolated and subsequently fragmented.

Efficient MS/MS from high-energy CID

Once selected for MS/MS fragmentation, precursor ions are subjected to true high-energy collisions with the chosen collision gas, e.g. helium. The resulting fragment ions are analyzed in the second TOF region incorporating the curved field reflectron and detected with the ultrafast MCP detector.

Efficient MS/MS from high-energy CID

The novel additional Low Mass Zoom (LMZ) scan allows focus of the analysis to be directed around the low mass region of the MS/MS spectrum. This feature can be employed to increase confidence in MS/MS based quantitation experiments and to aid in de novo sequencing of unknowns by enhancing the immonium ion region of the spectrum.



A practical and ergonomic package

The compact floor-standing geometry is designed to maximize laboratory space and allow easy installation and servicing. The system is delivered ready to install, requiring little assembly on site.

As with all AXIMA series systems, industry standard microtitre plate format MALDI targets are used for convenience and simple experimental planning and tracking. This allows seamless integration with a variety of robotic sample handling systems. Modular target adaptors permit the use of many different sample target formats including FlexiMass™ and other microscope slide formats.



CHROMATOGRAPHY AND MASS SPECTROMETRY



ELEMENTAL ANALYSIS

Elemental analysis is a process in analytical chemistry in which a sample of a material is analyzed for its elemental and isotopic composition. Elemental analysis can be qualitative or quantitative.

Shimadzu has been a world leading manufacturer of high-quality elemental analysis spectrometers that meet the application requirements of a wide range of customers, from metals, chemicals, and polymers to environmental testing, food safety, and pharmaceuticals, etc.

ELEMENTAL ANALYSIS

ELEMENTAL ANALYSIS SYSTEMS

Inductively Coupled Plasma Emission Spectroscopy Products

ICPE-9800 Series of simultaneous ICP atomic emission spectrometers are next-generation systems that offer the superior accuracy necessary to simultaneously and quickly analyze multiple elements regardless of their concentration levels



ICP-MS Products

With its newly developed collision cell and optimized internal structure, the ICPMS-2030 provides superior sensitivity. At the same time, thanks to the adoption of its proprietary mini-torch unit and provision of an Eco mode, the quantity of argon gas needed for analyses has been greatly reduced to the industry's lowest levels



Atomic Absorption Spectroscopy Products

Atomic Absorption Spectrophotometers features high-sensitivity analysis, flexible system configuration, and a compact footprint for user-friendly operation



Energy Dispersive X-ray Fluorescence Spectroscopy Products

EDX series are in pursuit of high sensitivity, high speed and high precision. This model supports new regulations and directives for consumer and environmental compliance, such as RoHS/ELV, REACH, and TSCA with full exclusive screening analysis kits.



Optical Emission Spectroscopy Products

These instrument is capable of high sensitivity quantitative analysis of iron and steel, copper, aluminum alloys and other solid metals, as well as impurities and other elements, thanks to a high resolution monochromator and discharge energy stabilized excitation unit. Excellent operability is achieved with software that enhances instrument monitoring and maintenance support functionality. In addition, this is an energy saving model that significantly reduces energy consumption.





TOTAL ORGANIC CARBON ANALYSIS



TOTAL ORGANIC CARBON

Elemental analysis is a process in analytical chemistry in which a sample of a material is analyzed for its elemental and isotopic composition. Elemental analysis can be qualitative or quantitative.

Shimadzu has been a world leading manufacturer of high-quality elemental analysis spectrometers that meet the application requirements of a wide range of customers, from metals, chemicals, and polymers to environmental testing, food safety, and pharmaceuticals, etc.

TOTAL ORGANIC CARBON

TOTAL ORGANIC CARBON SYSTEMS

TOC-L Series

The TOC-L series of TOC analyzers adopts the 680°C combustion catalytic oxidation method, which was developed by Shimadzu and is now used worldwide. While providing an ultra wide range of 4 µg/L to 30,000 mg/L, these analyzers boast a detection limit of 4 µg/L through coordination with NDIR. This is the highest level of detection sensitivity available with the combustion catalytic oxidation method.



TOC-VWP

Measurement Principle: Phosphoric acid and the oxidant (persulfate) are added to the sample, which is heated under UV illumination to convert the TC in the sample to carbon dioxide. This carbon dioxide flows with the carrier gas via the dehumidifier into the NDIR sample cell. The area of the carbon dioxide peak signal is measured and this peak area is converted to TC concentration using a pre-prepared calibration curve.



TOC-VWP

Combustion catalytic oxidation / NDIR method The functionality for continuous automatic measurement has been added to the ability of the combustion catalytic oxidation/NDIR TOC-V Series to perform high-performance, high sensitivity measurement of organic substances.



eTOC series

Demands for highly purified water and its quality control are getting stronger in many industries, such as pharmaceutical, medical device, food/beverage, chemical, precision machinery, and semiconductor.



TOC-4200

The TOC-4200 is a high-performance on-line TOC analyzer, based on the proven 680°C Catalyst-aided Combustion technology. This established technology is featured in a large installed base of Shimadzu Total Organic Carbon Analyzers throughout the world, and has been applied to a broad of industries.



TOTAL ORGANIC CARBON

TOC ANALYSIS ACCESSORIES AND SOFTWARES

ASI-L

Select from three vial types with different capacities to suit your application. Combination of vial capacity and number of vials.



OCT-L

Water samples can be measured directly in the collection bottles and thus do not need to be transferred to specific size autosampler vials.



TNM-L

720 °C catalytic thermal decomposition / chemiluminescence methods are adopted for TN measurement. There is no interference from metallic ions or bromine in sea water.



SSM- 5000A

Measurement of maximum 1 g samples with up to 30 mg carbon content reduces weighing errors, and errors due to uneven distribution of the sample carbon content.



TOC-L for Monitoring a Microscopic Algae Biomass

The dry weight method has been typically used to determine the amount of microscopic algae in biomass. However, Shimadzu proposes a new method, one that is rapid, easy, and accurate, utilizing the TOC-L total organic carbon analyzer



ASI-V

Combining the ASI-V automatic sampler with a TOC-V Series analyzer (except TOC-VE) creates a fully automatic analysis system.



OCT-1

Bringing you an innovative but inexpensive auto sampler that automates your analyzer system. Setup is extremely easy, because special vials are not needed.





MOLECULAR SPECTROSCOPY



UV-VIS-NIR SPECTROSCOPY

Elemental analysis is a process in analytical chemistry in which a sample of a material is analyzed for its elemental and isotopic composition. Elemental analysis can be qualitative or quantitative.

Shimadzu has been a world leading manufacturer of high-quality elemental analysis spectrometers that meet the application requirements of a wide range of customers, from metals, chemicals, and polymers to environmental testing, food safety, and pharmaceuticals, etc.

UV-VIS-NIR SPECTROSCOPY

UV-VIS-NIR SPECTROPHOTOMETERS

UV-Vis-NIR Spectrophotometers

The Shimadzu UV spectrophotometer that can be used in a wide array of fields, and easily expanded to suit your analysis goals. The included Shimadzu LabSolutions UV-Vis software is simple to use and can ensure data integrity



UV-Vis-NIR Spectroscopy Systems

Easy, Accurate Water Analysis of 22 Sample Types/39 Items.

Only 1.5mL of test sample is needed with extremely easy operation. Combining the UV-1280 and a simple reagent kit from Kyoritsu Chemical-Check Lab ensures easy operation, and accurate, stable water analysis.



UV-Vis-NIR Spectroscopy Software

Shimadzu UV-Vis makes your work faster and easier. Simple and easy to use for everyone. The design enables both first-time users and daily users to perform operations with confidence.

Smart Optimize quality control: Automatically determines the quality of the spectrum and provides strong support for quality control operations.

Seamless Easy transfer of measurement data: Automatically outputs text file and transfers data to Excel. Easy to analyze measurement data with other applications.



UV-Vis-NIR Spectroscopy Accessories & Options

Shimadzu offers UV-Vis-NIR Spectroscopy Accessories & Options with a complete UV accessory selection guide for liquids starting from Cells, Sample Compartment, Short Optical Path Measurement, Long Optical Path Measurement, Micro-Volume Measurement, Constant-Temperature Measurement and Automatic Analysis.



FTIR SPECTROSCOPY

FTIR SPECTROMETERS

IRSpirit, IRAffinity-1S, IRXross, IRTracer-100 and AIM-9000

IRSpirit instruments come with IR Pilot software, which offers 23 application-specific workflows that are ready-to-use without the need for parameter setup. Measure multiple samples with just one click.

The IRAffinity-1S offers the high SN ratio (30,000:1, 1-minute accumulation, neighborhood of 2,100 cm^{-1} , peak-to-peak), a maximum resolution of 0.5 cm^{-1} , and compact dimensions.

The IRXross creates a new concept for infrared spectroscopy. It offers the optimal solution for a new era with diverse application requirements.

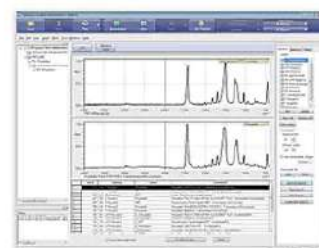
The IRTracer-100 achieves excellent sensitivity with an SN ratio of 60,000:1, high resolution at 0.25 cm^{-1} , and high-speed scanning capable of 20 spectra/second.

The AIM-9000 is automated to ensure all steps involved in micro analysis can be performed quickly and easily.



LabSolutions IR

Network-enabled as part of the LabSolutions family, LabSolutions IR is furnished with rich spectral libraries and a high-performance search function as standard. Labor-saving macros provide for a higher level of automation and improved work efficiency.



FTIR Spectroscopy Accessories & Options

Shimadzu offers FTIR Spectroscopy Accessories & Options with a complete FTIR accessory selection guide such as EDXIR-Holder that measure the Samples Kept in the Holder with EDX and FTIR.



UV-VIS-NIR SPECTROSCOPY

NAVIGATE YOUR WAY

Easy to Operate, Obtain Answers Easily and Rapidly

The instrument is equipped with a stylus pen, allowing operation by this pen or a finger.

**Easy-to-Use Interface**

Grasp the Current Status and Operating Procedures at a Glance.

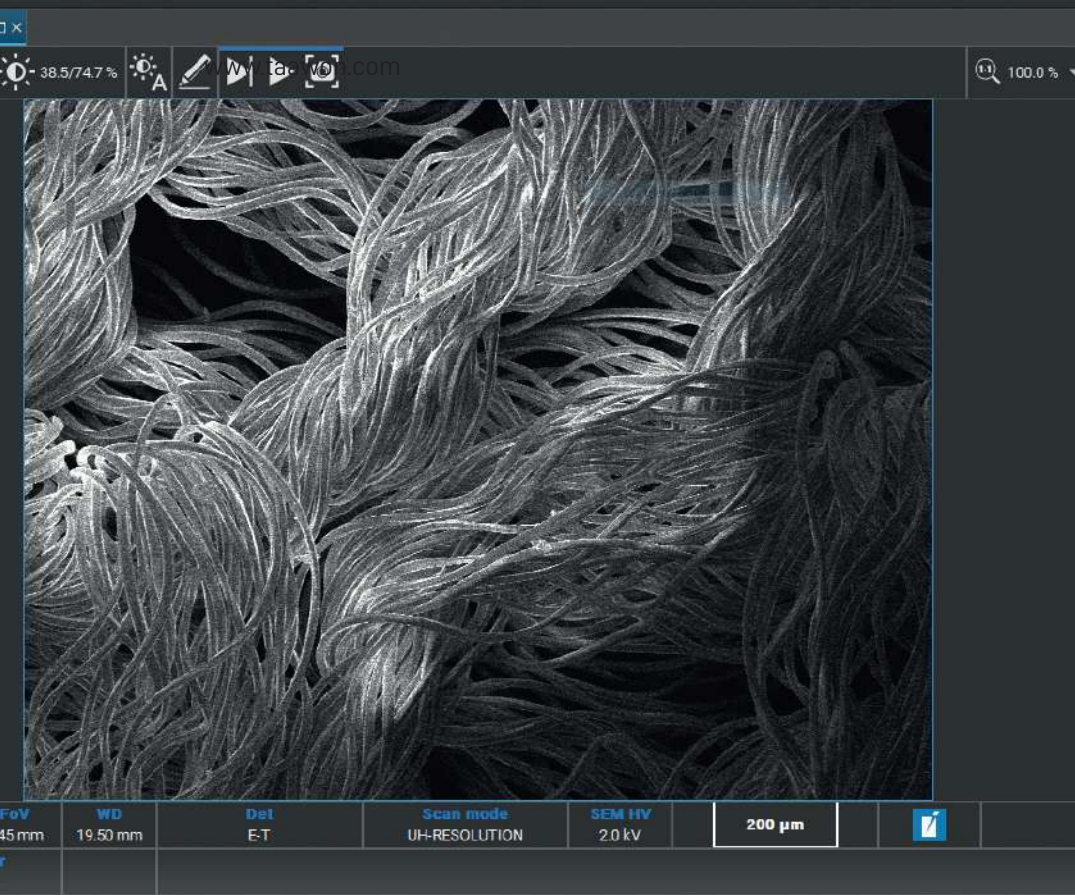
**Low Stray Light**

Stray light is at 0.5 % max. (198 nm), making accurate measurements are possible at 1 Abs or more even in the ultraviolet region. In addition, high-concentration samples can be quantified accurately. The figure on the right is a calibration curve for acetic acid, created with absorbance at 200 nm.

The UV-1900i provides network access

Data can now be transferred to a PC via a network. Thanks to wireless printing, multiple UV units can print from a single printer.





SEMS, FIB-SEMS AND MICRO-CT'S

Scanning electron microscopy is a well-known non-destructive technique that uses an electron beam probe to analyse samples surface down to nano-scale. The scanning electron microscopes produce high magnification images with high resolution, a feature of which makes them suitable tools for a wide range of applications in numerous fields of science and industry.

SEMS, FIB-SEMS AND MICRO-CT'S

SCANNING ELECTRON MICROSCOPY (SEM)

Achieving a sub-nanometer resolution, the Tescan **SEM systems** will reveal the finest details about the structure of your material. TESCAN's unique Wide Field Optics™ allow you to quickly locate areas of interest at magnifications as low as 2x before zooming in to understand their makeup.

For the micron and the sub-micron level there are SEM VEGA and SEM MIRA systems and for the nanoscale and sub-nanoscale there are SEM CLARA and SEM MAGNA systems.

Key features

- UHR imaging of non-conductive beam sensitive samples at low-kV
- A routine investigation of heavy-metal stained ultra-thin sections with excellent contrast using the In-beam BSE detector at extremely low kV
- Easy-to-use STEM detector as a cost-effective alternative to routinely used TEM
- Compatibility with major cryo-system suppliers on the market
- Easy-to-use, fully customizable, application-oriented and modular user interface



FOCUSED ION BEAM SCANNING ELECTRON MICROSCOPY (FIB-SEM)

Focused ion beam scanning electron microscopy (FIB-SEM) combines two beams (electron and ion) in one instrument. The FIB column is used for cross sectioning or sample modification, while the SEM column provides high resolution imaging.

The geometry of FIB-SEM systems is such that the electron and ion beam focal points coincide, making simultaneous SEM imaging during FIB milling possible – a significant leap in terms of performance and throughput for FIB operations that demand ultimate levels of precision.

TESCAN offers two different ion species for FIB sources: gallium ions and xenon ion plasma. Ga ion source FIB is preferred for all applications that need ultimate precision for fabrication and nano-patterning. Xenon plasma FIBs deliver much higher ion beam currents compared to Ga-FIB to remove large volumes of material in times frames that can be up to 50× shorter than Ga-FIB.

There is a full range of FIB-SEM Systems such as TESCAN SOLARIS, TESCAN SOLARIS X, TESCAN AMBER, TESCAN AMBER X.



SEMS, FIB-SEMS AND MICRO-CT'S

MICRO-CT SYSTEMS

Provides high throughput and flexibility; offering novel **dynamic CT workflows** enabling a wide range of 4D applications. Studying the change or evolution of a sample non-destructively. Our micro-CT solutions are specifically designed to facilitate high-throughput and dynamic CT workflows, expanding your in-situ research capabilities.

Micro-CT provides direct 3D information on the porosity, mineral distribution and microstructure of geological samples with micrometer resolution. Due to the unique design of the TESCAN micro-CT systems, it becomes possible to quantify fast dynamic in situ processes in the lab. It is specifically designed to facilitate high-throughput, multi-scale and dynamic CT workflows.

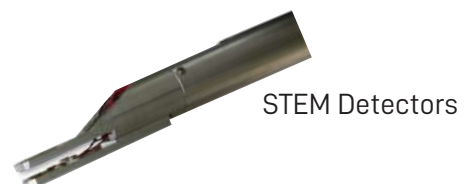


DETECTORS

TESCAN offers a wide range of **proprietary and third-party detectors** that can be integrated into our SEM and FIB-SEM systems.

Detectors offered by TESCAN:

- SE Detectors
- BSE Detectors
- Beam Deceleration Technology
- Electron Backscatter Diffraction
- STEM Detectors
- CL Detectors
- Low Vacuum Secondary Electron TESCAN Detectors
- Electron Beam Induced Current Detectors
- X-ray Spectrometry Detectors
- Secondary Ion TESCAN Detectors
- TOF-SIMS Detectors
- EDS Detector





ATOMIC SPECTROSCOPY

HORIBA
Scientific

ATOMIC SPECTROSCOPY AND MEASUREMENTS

HORIBA provides an extensive array of instruments and systems for applications to a broad range of scientific R&D and QC measurements. Proven quality and trustworthy performance have established widespread confidence in Horiba.

ATOMIC SPECTROSCOPY AND MEASUREMENTS

ATOMIC SPECTROSCOPY

Quantum Microscopes - AFM Technology

The first scanning NV (nitrogen-vacancy) microscope for the analysis of magnetic materials at the atomic scale. The Qnami ProteusQ system comes with state-of-the-art electronics, software and AFM optical platform.

Its flexible design allows for future adjustments and scaling, expansion and capability upgrades.



Raman Imaging And Spectrometers

A complete Raman spectroscopy solutions for analytical measurements, research Raman, UV Raman, QC/QA and industrial Raman applications. They are well-known for Stability/Reliability obtained from a robust design approach, high-performance and speed enabled by our many Ultrafast Imaging patented functionalities, and ease of use thanks to the renowned LabSpec software suite.



AFM Optical Platform

The myriad of AFM (Atomic Force Microscope) techniques that allow study of topographical, electrical and mechanical properties can be performed with any laser source available in Raman spectrometer, or with other external illumination (e.g., solar simulator or other tunable or continuum source).

The AFM-Raman platform is a two-way road; where complimentary techniques provide novel and unique imaging capabilities to each other.



Fluorescence Spectroscopy

These steady-state fluorescence spectroscopy looks at the long-term average Fluorescence of a sample when irradiated with UV, Visible or near-IR Light. The research-grade fluorimeters are compact, benchtop or modular, and customizable for any sort of Fluorometry, be it Fluorescence detection or Phosphorescence studies your research requires.

Besides, Fluorescence Spectroscopy software was tailored precisely for the types of experiments you perform by controlling all aspects of your system.



Energy Dispersive X-Ray Fluorescence (ED-XRF)

This range guarantees simple analysis operation with no preparation required and non-destructive analysis. The measurement points can be accessed quickly through high-precision optical observation, even in the microscopic range.

The clear and High-speed Image mapping ensures shortened analysis time facilitates efficient measurement work. and X-ray images with very little noise allow for even clearer observation.



ATOMIC SPECTROSCOPY AND MEASUREMENTS

PARTICLE MEASUREMENTS

Surface Plasmon Resonance imaging (SPRi)

Advanced antibodies exploration Thanks to Label-free Surface, Plasmon Resonance Imaging Technology, as well as Streamlined SPRi-MS coupling to detect and identify a kinase in Cell lysate using the DARPin as binders.



Glow Discharge Optical Emission Spectrometry (GDOES)

Providing ultra-fast elemental depth profile analysis of layered materials, simultaneously offering quantitative measurement of all elements and thickness with nanometer depth resolution



Spectroscopic Ellipsometry

The most suitable technique for thin film characterization. It allows a range of thin film properties to be characterized, like layer thickness, optical properties (n,k), optical band gap, interface and roughness thickness, film composition, uniformity by depth and area, and more. It can also be used to study solid-liquid or liquid-liquid interfaces.



ICP-OES Spectrometers

High resolution, high sensitivity and high stability ICP-OES spectrometer with the highest performance on the market and is specially designed to handle the most challenging applications. Its high quality optical design integrates a high density holographic grating and one meter focal length. Providing lowest detection limits in ICP-OES spectrometry thanks to the radial viewing and total plasma view



Sulfur-in-Oil Analyzer

From EDXRF to MEDXRF to combustion UV-Fluorescence, to combustion chemiluminescence to microcoulometry, our range of Sulfur-in-oil analyzers meet all of your needs.



Particle Characterization

Designed for Characterization of Particle Size by Laser diffraction, Particle Shape by Image analysis, Zeta Potential by Electrophoretic Light Scattering, Surface Area by Flowing gas adsorption and Particle Concentration



TESTING INSTRUMENTS



PHARMACEUTICAL TESTING

Internationally leading manufacturer for the high-value test devices and systems. Offering a complete product range from manual, physical testing instruments to fully automated, analytical test systems to analyze the active chemical composition of a dosage form as well as its release rate.

PHARMACEUTICAL TESTING

DISSOLUTION

Tablet Dissolution Testing Instruments

Reflects the availability of active substance and allows the prediction of the time for complete release of the material from the dosage form.



Offline Automated Dissolution Systems

Automated sampling for a dissolution test instrument at pre-programmed times that includes a dissolution bath, a pump and a fraction collector which collects the sampled dissolution media



Online Automated Dissolution Systems

Unlike the off-line systems where samples are removed from the dissolution vessels and stored either for transfer to a measurement system or for further preparation (e.g. dilution), the samples here are circulated in a closed loop.



In-Situ Dissolution Testing

Fast sampling sequences, a full spectra scan is available for all connected vessels in less than 30 seconds, immediate result display, minimum change over time from test to test are some of the advantages offered by the In-Situ Dissolution Testing



Media Preparation

Media preparation and degassing are vital parts of a tablet dissolution test as deaerated media are critical to the reproducibility of dissolution results.



PHARMACEUTICAL TESTING

GALENIC INSTRUMENTS

Tablet Disintegration Testing

Evaluating the disintegration characteristics of formulations and the quality control of different dosage forms.



Suppository Testing

Measuring the disintegration time by placing the samples into rotating baskets inside a heated water bath and measuring the softening time by which the suppository melts at a certain temperature.



Tablet Hardness Testing

Testing the breaking point and structural integrity of a tablet prior to storage, transportation, and handling before usage.



Ampoule Testing

ampoule breakpoint tester to control the quality during production of empty ampoules.



Tablet Friability Testing

Testing the durability of tablets during packing processes and transit by repeatedly dropping a sample of tablets over a fixed time, using a rotating drum with a baffle



Leak Testing

Checking the integrity of tablet strips, blister packs and small bottles by checking the air-tightness of sweet packets, ready-to-eat pre-packed foods, confectionery packaging, packs of noodles, sauces to name but a few



PHARMACEUTICAL TESTING

SOLID DOSAGE FORMS TESTERS



Vessel Centering System

Rigid and precise three-point individual centering system for each dissolution vessel

Each **USP Borosilicate glass vessel** has a batch code on top of the flange for easy visibility and positioned placement inside the water bath cover.

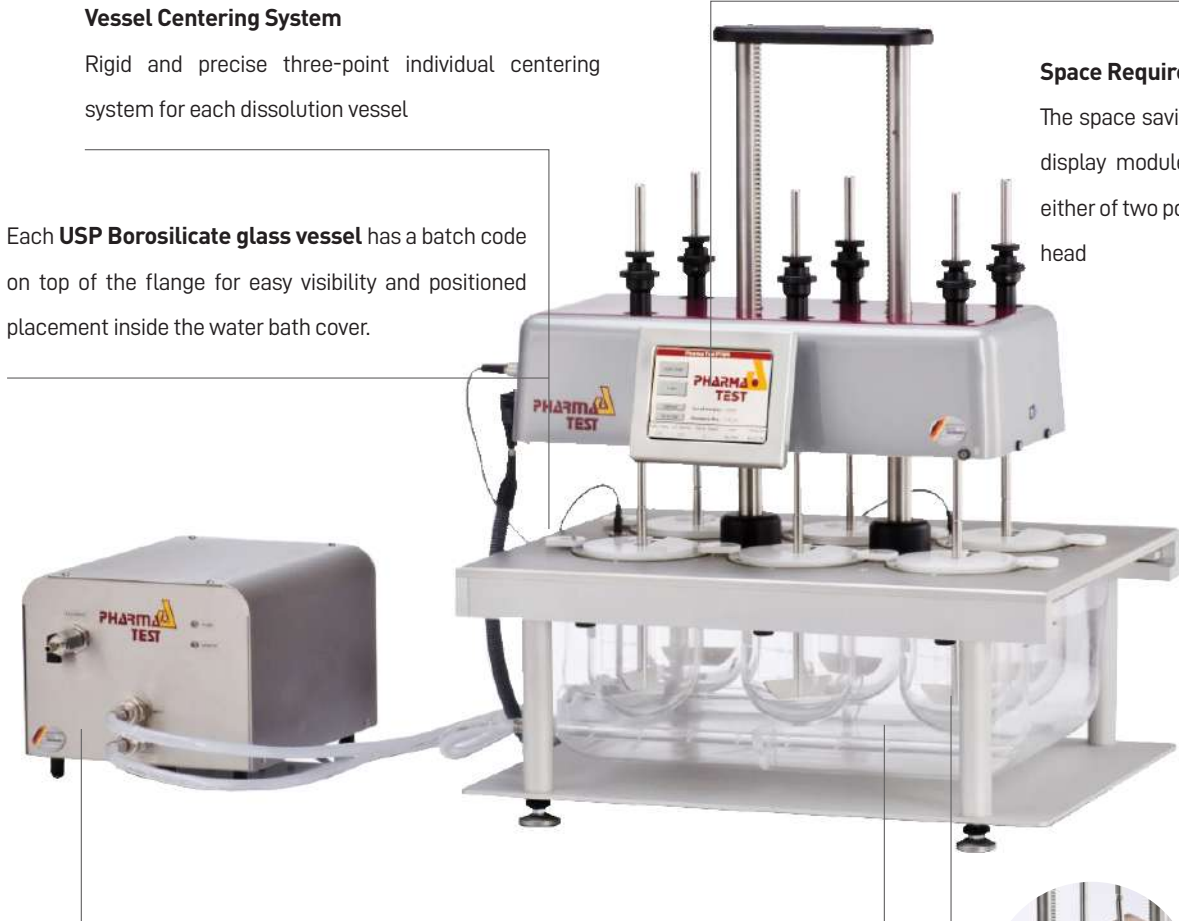


User Interface

The large color, touch screen allows control of the various me-chanical features of the instrument such as the tool stirring speed, lift drive and heater

Space Requirements

The space saving designs and the display module can be mounted either of two positions on the drive head



Heating System

The heating system is contained in a separate stainless steel housing.

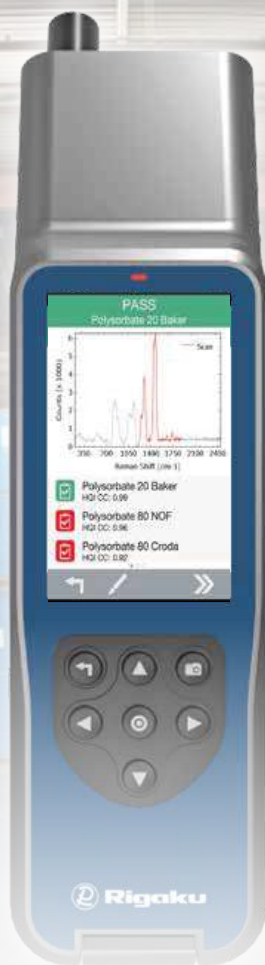


The **Vacuum-Moulded** Water Bath contains a water diffuser for faster heating and to ensure that heated water is evenly distributed throughout the whole bath.



Stirring Tools

Pharma Test MonoShaft™ tools consist of the main shaft plus interchangeable tool heads (adapters).



TESTING INSTRUMENTS



HANDHELD RAMAN SPECTROMETER

Perform lab-quality analysis of the widest range of solids, powders, liquids and other substances with the Rigaku Progeny 1064 nm handheld Raman analyzer. Designed to be customized and flexible for seamless integration into any work environment.

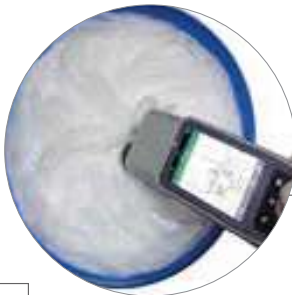
HANDHELD RAMAN SPECTROMETER

MATERIAL VERIFICATION AND AUTHENTICATION



Intuitive software

User has full control of analysis parameters and library or application development for easy implementation into customized workflow



Sealed system (IP-68)

Rugged warehouse use while minimizing cross-contamination



Optional docking station

Offers uninterrupted, versatile, and stationary operation while providing a continuous charge.



Integrated barcode reader

21 CFR Part 11 compliant electronic signature



1064nm excitation laser

Identify the most comprehensive range of materials in a handheld form



Angled display with large-sized buttons

Single hand operation for optimal usability



High-speed multi-function processor and on-board memory:

Flexible operation with on-board modern algorithms for accurate identification



TESTING INSTRUMENTS



HANDHELD & FULLY AUTOMATIC TORQUE TESTERS

Sure Torque offers the widest range of closure torque testing solutions from the handheld units to the fully automatic torque testers.

Many of the major cap producers, beverage and pharmaceutical companies are using automatic Torque Testers from Sure Torque

HANDHELD & FULLY AUTOMATIC TORQUE TESTERS

CAP TESTERS

ST-LAB

The low cost ST-LAB with several options makes it ideally suited for torque testing in laboratory and pharmaceutical production environments



ST-INLINE

The fully automatic ST-INLINE Bottle Cap Torque Tester samples and tests caps right on the production line



ST-S3

The S3 can also be programmed to perform tests to a set degree of rotation



ST-50

The ST-50 will perform fullrelease torque testing to protocol as well as perform final cap tightening to a setpoint



ST-M

The ST-M can record both the primary and the secondary peak torques during a release (or application) process, so both the initial release torque and the warranty-rings, bridge breaking torque can be measured.



ST-H5 Torque Meter

With the ST-H5 you can accurately measure the torque applied by each head for the desired torque settings



SureVac – Leak Tester

The SureVac™ allows a user to test a sealed package in a water-filled vacuum chamber to a preset vacuum level for a specific amount of time.



HANDHELD & FULLY AUTOMATIC TORQUE TESTERS

THE CAP TEST SPECIALIST



- Real time, automatic display.
- NIST traceable calibration procedure.
- Strain gauge transducer technology.
- Automatic container clamping and closure gripping.
- Adjustable torque application rate.
- 180 degree chuck rotation.
- Counter balance system for height adjustment.
- Heavy duty components.

Additional parts

ST-LAB additional cap collet

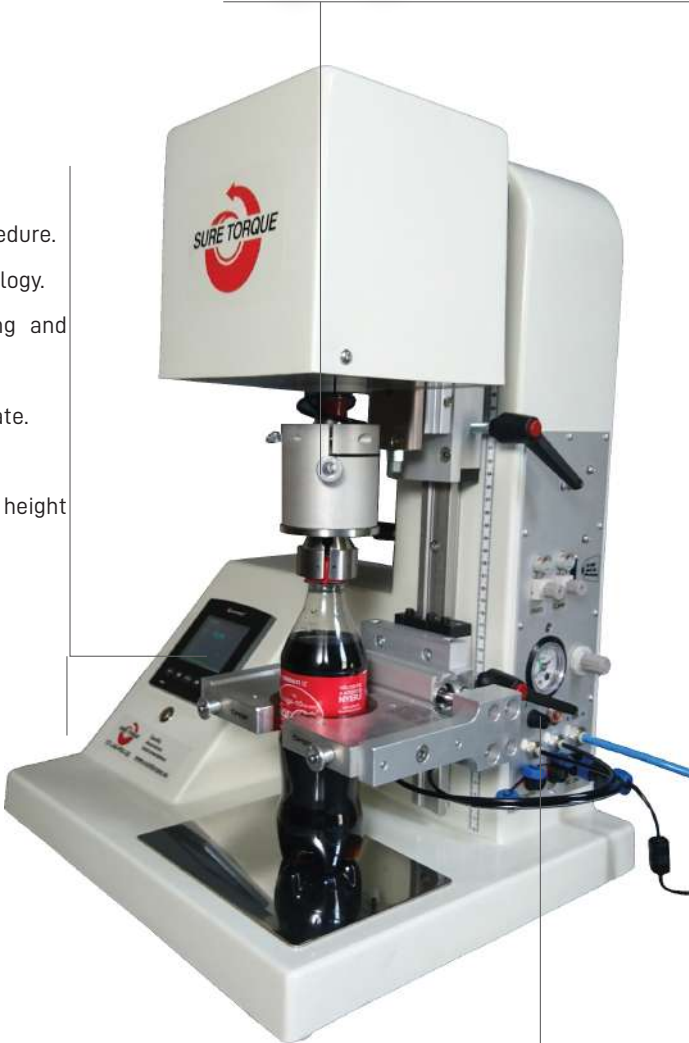


Additional parts

ST-LAB additional clamps



- Customer defined set point.
- Release Torque measurements
- Measuring Peak/Transient Torque, engagement torque and the peak of the bridge break torque.



Application angle measurement

A release test where after passing the initial release torque the closure will be fully removed, and the original application angle will be measured too



Topload seek test

Topload will be increase automatically until the closure starts to open (force increment and increment dynamics is configurable)

Kits and Peripherals

- Serial dot printer for direct record printing with battery and charger
- Torque Standard Bottle for quick calibration check on any closure torque tester



AVESTIN

AVESTIN Inc. is a company specialized in Homogenizers, Emulsifying, mixing and dispersing equipment for uniform separation in your laboratory.

HOMOGENIZERS



EmulsiFlex-B15
Capacity: 3 to 15 mL batch
Pressure: 3000 bar
Min. sample volume: 3 mL
Air pressure: 10 - 5 bar



EmulsiFlex-C50
Capacity: 15 to 50 L/h
Pressure: up to 2000 bar
Min. sample volume: 25 mL
Air pressure: 6 - 8 bar



EmulsiFlex-C5
Capacity: 1 to 5 L/h
Pressure: up to 2000 bar
Min. sample volume: 7 mL
Air pressure: 8 bar



EmulsiFlex-C55
Capacity: 55 L/h
Pressure: up to 2000 bar
Min. sample volume: 100 mL
Air pressure: 8 bar

MIXING, DISPERSING, AND EMULSIFYING



EmulsiFlex-C3
Capacity: 3 L/h
Pressure: 2000 bar
Min. sample volume: 10 mL
Air pressure: 4 - 8 bar



EmulsiFlex-C160
Capacity: 160 L/h
Pressure: up to 2000 bar
Min. sample volume: 250 mL
Air pressure: 8 bar



EmulsiFlex-D20
Capacity: 20 L/h
Pressure: up to 2000 bar
Min. sample volume: 50 mL
Air pressure: 8 bar



EmulsiFlex-C55
Capacity: 500 or 1000 L/h
Pressure: up to 2000 bar
Min. sample volume: 5 L
Air pressure: 8 bar

GENERAL LABORATORY INSTRUMENTS

MISCELLANEOUS

Hermle Centrifuge

Hermle is specialized in the development and manufacturing of laboratory centrifuges. The Germany based company is one of the key players in centrifugation worldwide, and certified ISO 9001 and ISO 13485 for IVD-products. Centrifuges from Hermle have been used in laboratories for more than 60 years in countries all over the world.



GFL Water Baths

The range of Incubation and Inactivation Baths comprises seven models with five different sizes of 7 to 40 l capacity. Water Bath 1005 is especially suitable for warming medical hot packs.

Water Baths 1012 and 1013 are equipped with a circulation system, thus guaranteeing an optimal temperature uniformity.



Thermo Scientific Viscometers

Measuring instruments for the determination of the flow behavior of fluids are called viscometers. Viscosity is a material property which is dependent on different parameters such as mechanical stress and strain, time as well as temperature and other ambient conditions.



IKA Shakers

IKA offers the perfect lab shaker for mixing and shaking tasks. In addition to the tried and tested orbital shakers and horizontal shakers. IKA products boast speeds of up to 3,000 revolutions per minute during continuous operations. A digital display, timer function.



IKA Hot Plates

IKA hotplates allow for precise and safe heating and tempering due to a platform made from glass ceramics that ensures the best possible chemical resistance. The universal lab hotplates offer a high level of safety due to a fixed safety circuit, the Hot Top Indicator, and the error code display.



GENERAL LABORATORY INSTRUMENTS

MISCELLANEOUS

IKA Overhead Mixer

IKA offers the ideal overhead stirrer for your stirring and mixing tasks in the lab-for lower to high viscosities. IKA overhead stirrers effortlessly process stirring quantities of up to 200 liters. IKA lab stirrers and overhead stirrers stand out due to their indispensable features, including an electronic safety circuit, a digital display, two speed ranges, and a controlling option via the lab software Labworldsoft.



IKA Dispersers

The T 25 easy clean control is a high-performance dispersing instrument with electronic speed control from 25,000 - 3,000 rpm for working volumes of 2,000 - 1 ml (H₂O). The new tool S 25 EC-T-C18-G-ST allows temperature measurement and operation time detection through RFID

Device overheating is prevented by continuous temperature monitoring and the setting of temperature limits



Sonicators

Ultrasonic cleaning is one of the most modern processes today that particularly effectively and efficiently removes dirt and other contamination in the shortest time and without damage from many different products to be cleaned.



Mercury Analyzer

Fully automated instruments that address the analysis of solids, semi-solids and liquids. They are equipped to assist today's laboratory technician, chemist or lab manager in meeting the myriad of challenges that face today's modern laboratory.

Easily maintained with readily accessible consumable and operator-friendly serviceable items and commonly serviced parts



ROTRONIC MEASUREMENT SOLUTIONS



ENVIRONMENT SOLUTIONS

rotronic

MEASUREMENT SOLUTIONS
A PST BRAND

TEMPERATURE & HUMIDITY MEASURING & MONITORING

The portfolio includes temperature measurement and monitoring of relative humidity, industrial probes, humidity sensors, measurement probes, data loggers, handheld instruments, transmitters and OEM products that conform to GAMP and FDA requirements.

Apart from humidity and temperature measurement, Rotronic products are designed for monitoring of CO₂, differential and process pressure, flow, dew point, water activity and analog signals.

TEMPERATURE & HUMIDITY MEASURING & MONITORING

DATA LOGGERS, TRANSMITTERS & PROBES

Humidity

Rotronic humidity measuring instruments measure temperature too at the same time with Data Loggers for barometric pressure, humidity, temperature and dew point, as well as Humidity and Meto probes and transmitters.



Temperature

Rotronic offers a range of temperature measuring instruments to this end: from temperature probes and transmitters to handhelds and data loggers



CO2

Rotronic CO2 transmitters are equipped with sensitive probes and are ideal for the demanding monitoring of indoor air. They simultaneously measure temperature and air humidity.



Differential Pressure

Rotronic differential pressure measuring instruments are optionally equipped with temperature probes and humidity sensors or can be expanded with digital and analog add-ons to include additional parameters.



Pressure

Rotronic uses the piezo-resistive effect for its pressure measurement equipment, thereby supplying a premium transmitter to the market.



TEMPERATURE & HUMIDITY MEASURING & MONITORING

DATA LOGGERS, TRANSMITTERS & PROBES

Flow

Handheld measuring instruments, which measure temperature, relative humidity and dew point in addition to air velocity and volumetric flow, can be used to test and evaluate the functionality of air conditioning and ventilation systems.



Water Activity

The measurement of water activity or equilibrium relative humidity (ERH) is a key parameter in the quality control of moisture sensitive products or materials.

Manufacturers of foods and pharmaceutical products must, for example, show to the FDA that the water activity of a product has declined to such an extent that bacteria can no longer grow



Dew Point

The Rotronic low dew point probes are ideal for measurement of trace moisture; for example, in compressed air systems or in refrigeration or desiccant dryers.



Software

The RMS software meets all requirements for server-based monitoring. It is linked to a database that stores all measured data and system activities. It is thus possible to access the data on all popular platforms from anywhere in the world as long as you have an Internet connection.



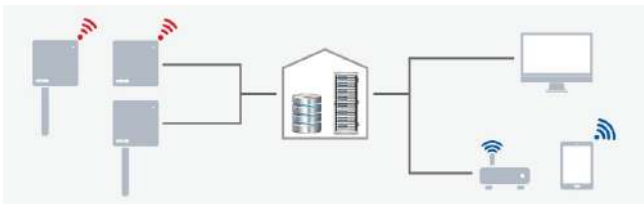
Monitoring Systems - RMS

The adaptive RMS Rotronic Monitoring System documents and visualizes all necessary measured data in one system. It consists of analog and digital hardware elements and a server software.



TEMPERATURE & HUMIDITY MEASURING & MONITORING

ROTRONIC MONITORING SYSTEMS (RMS)



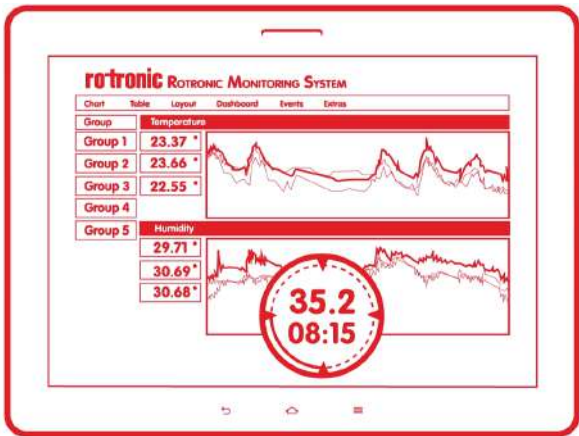
The Rotronic Monitoring System is a **modular system** of hardware elements and web-based software. It provides maximum flexibility in installation and ensures readily available data. The data loggers record measurements from Rotronic and third-party sensors and transmit them to the secure database. It stores information and makes it available to users, regardless of whether they access the database via a PC, Mac, tablet or smartphone.



have a **continuous data logging** and get access to your data via all major platforms



Existing hardware can be **integrated into the Rotronic system** and, vice versa



RMS

Fast & Easy with the **Rotronic SaaS Cloud solution** that remains you compliant to GxP regulations



Run the RMS software with an **SQL database** on your own IT infrastructure and have complete control over your entire system and comply to your own internal regulations, access the interface via most browsers.



Have all incidents **logged and documented** and ready to view and downloaded wherever you go



Our **configurable and continuous Monitoring System** allows you to monitor all kinds of various parameters from temperature to particles including analogue inputs.



The **system analysis** the data, if a threshold is exceeded, RMS immediately triggers the alarm and will notify all relevant people in accordance.



ENVIRONMENT SOLUTIONS

KAYE

THERMAL VALIDATION & ENVIRONMENTAL MONITORING

Kaye products are designed to meet the most demanding requirements for process improvement, thermal validation and environmental monitoring. With patented Asset Centric Data Management Features - a new flexible approach to Validation, Kaye Validator AVS - Advanced Thermal Validation combines accurate sensor measurements with all GMP requirements for calibration and traceability to national standards, while generating compliant reports and managing the validated assets and validation equipment.

Kaye ValProbe® RT (Real-Time) is a wire-free real-time process validation and monitoring system designed around the measurement and reporting requirements of the most intensely regulated industries.

TEMPERATURE & HUMIDITY MEASURING & MONITORING

VALIDATION SYSTEMS & WIRELESS VALIDATION LOGGERS

Kaye Validator AVS - Advanced Thermal Validation

The Kaye Validator AVS (Advanced Validation System) combines accurate sensor measurements with all GMP requirements for calibration and traceability to national standards, while generating compliant reports and managing the validated assets and validation equipment.

The Validator AVS offers improved hardware features, an easy to use data handling concept and an intuitive, user-friendly software interface.

With our integrated validation system and improved data management concept, the Kaye Validator AVS saves time and money by simplifying the entire validation process.



Kaye ValProbe Real-Time Wireless Data Logger

Kaye ValProbe® RT (Real-Time) is a wire-free real-time process validation and monitoring system designed around the measurement and reporting requirements of the most intensely regulated industries.

The ValProbe RT family of data loggers provide accurate, convenient, and reliable process measurement for a wide range of pharmaceutical, and medical device applications. The wireless design greatly simplifies monitoring and validation of severe and hard-to-reach environments. See the table below for logger-types and recommended applications.

It is a state of the art validation system design that meets industry and regulatory (FDA / GAMP) requirements for thermal validation. The ValProbe RT system combines high accuracy measurements, automated sensor calibration, an intuitive metro style user interface, and extensive reporting to simplify the complete validation process.



TEMPERATURE & HUMIDITY MEASURING & MONITORING

ADVANCED VALIDATION TECHNOLOGY

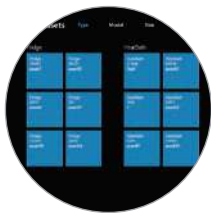


Two ways to Connect the Validation Console to the Kaye Validator AVS:

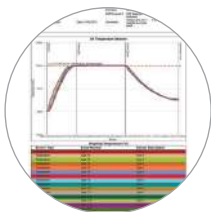
- Docking Mode
- Network Mode



- Portable Validation Console -Pre-loaded Software
- Dedicated to Validation Tasks
- Simplified Compliance and Easy Validation
- Data Integrity and 21 CFR Part 11 Compliant



The Kaye Validator AVS includes an intuitive Asset Centric Data Management concept which allows you to store and access your data faster and more efficiently.



- AVS Wiring Layout
- Setup Report
- Calibration Report
- Graph Report
- Detailed Report:
- Summary Report
- Verification Report
- Pass / Fail Criteria Report
- Audit Trail Report



- Robust industrial design with two handles
- IP55 rating, chemical resistant ABS housing
- Dedicated Validation Console for improved user interface
- On-board docking station for Kaye Validation Console
- Battery backup with field replaceable battery pack (3 hours)

- Up to 4 SIMs 48 channel capacity
- Scan speed of 48 channels per second
- SIMs for TCs, 20-4mA, 10-0V and RTDs
- Improved Sensor Connectivity (quick-fix & lock connectors)
- Accepts a wide range of thermocouple types (T, T premium, J, K, E, B, R, N, S)

TEMPERATURE & HUMIDITY MEASURING & MONITORING

WIRELESS REAL-TIME DATA COLLECTION

The ValProbe Transport/Storage Tray is an accessory designed to simplify the carrying, storage, and management of Kaye ValProbe RT loggers during use. The ValProbe RT Transport/Storage Tray can accommodate up to 20 Kaye ValProbe Loggers of any type.



Kaye ValProbe RT delivers reliable life data under harsh conditions at high or low temperatures



The System guarantees ease of use and dedicated reliable validation; allowing focus on validation tasks, not the technology



- 21 CFR part 11 compliant (Data Integrity)
- OS and Hardware controlled and validated by Kaye
 - Common Software tools for Kaye Hardware
 - Backward compatible to existing Kaye Products
 - Elimination of IT control



The Kaye Validation Console can establish wireless connections by utilizing any kind of available Wi-Fi infrastructure. This feature simplifies your daily routine work. You can access live data wirelessly on the console screen. You can start or stop studies and read live data from a Kaye ValProbe RT system in a cleanroom without entering the room.



ENVIRONMENT SOLUTIONS



PARTICLE COUNTING & MONITORING

Particle Measuring Systems specializes in viable and nonviable particle counters that measure and monitor contamination levels in clean and controlled environments.

With Particle Measuring Systems, they lead this industry of cleanroom particle counters and contamination monitoring worldwide by actively developing their instruments to perfection

PARTICLE COUNTING & MONITORING

AIR & LIQUID PARTICLE COUNTERS & SENSORS

Airborne particle Counters

Providing real-time measurement of yield-impacting particles with multiple configurations and meets the requirements of ISO 1:2015-14644 and ISO 4-21501.



MiniCapt® Microbial Air Sampler

These instruments help you effectively meet regulations including ISO 14698 and (c)GMP, such as EU GMP Annex 1



Liquid Particle Counting

Our liquid particle counters can determine the size, amount, and nature of particulates in liquid substrates, computer components, medical devices, sensitive equipment, or an assortment of other precision devices



Airnet Particle Sensors

These sensors meet the specifications of ISO 4-21501 to measure the size and number of particles suspended in the air for real-time monitoring of defect-causing particles.



IsoAir Particle Sensors

Real-time particle monitoring gives quick notification of particle anomalies, detecting 0.5 and 5.0 µm for GMP and FDA compliance.



FacilityPro® Environmental Monitoring

Industrial control systems assure data integrity, process automation, simplicity of use, and data integration.



PARTICLE COUNTING & MONITORING

COMPLETE CONTAMINATION CONTROL SOLUTION

The **touchscreen's simple menu** options facilitate logical navigation, and the instrument status is rapidly communicated through the color screen display.

The exterior makes **cleaning quick and easy** and is compatible with a variety of disinfectants.



Particle Counter is designed with the latest technology to meet **global requirements** for data integrity



Real-time download to Facility Net, Pharmaceutical Net Pro, FacilityPro® SMART NG, or FacilityPro SCADA NG software, USB download, automatic clock adjustment with NTP server



240 - 100 V, 60-50 Hz, 2.5 A. Up to **two rechargeable lithium ion batteries** for portable use

Sampling can be **remotely managed** over Ethernet, and all collected data meets 21 CFR Part 11 compliance regulations.



Unlimited **users and recipes** configurable with NFC access cards

Four 20-4 mA **inputs** (<0.5% of Span), four 20-4 mA **outputs** (<1.0% Span), one 5V pulse **output**





Air Techniques International (ATI) has a heritage for supplying instrumentation and testing solutions for the clean air and containment industry.

CLEAN AIR & CONTAINMENT SYSTEMS

Photometers

Digital Photometer is a rugged and an ideal instrument for in-situ filtration system integrity testing.



Aerosol Generators

Testing of filter systems ranging from small glove boxes to large cleanroom plenums and providing the ideal solution for creating a polydispersed, submicron aerosol to certify and qualify in-situ filter systems.



Aerosol Injection & Conditioning

The Positive Injection Pump (PIP) provides the user with a safe and reliable system for directing aerosol from a Thermal or Laskin Nozzle Generator through a tube into the injection point.



Fixed Installation Ports & Specialty Probes

Fixed aerosol injection ports can be easily installed to a ceiling duct in a clean room or an adjoining room that feeds the cleanroom
Fixed aerosol sampling ports allow air-tight connections to the photometer for sampling upstream aerosol challenge from a fixed ceiling point.



Automated Filter Tester

The Automated Filter Tester is designed for test and quality control validation of filter media, cartridges and masks used in medical and industrial hygiene applications.



ENVIRONMENT SOLUTIONS



STABILITY ROOMS AND CONDITIONERS

Parameter has long been on the cutting edge of innovation, offering precise temperature & humidity control with greater precision that no other manufacturer has replicated.

STABILITY ROOMS AND CONDITIONERS

TEMPERATURE & HUMIDITY CONTROL ROOMS, COLD ROOMS, FREEZER ROOMS, DRYING ROOMS

Freezers

Split system freezer is designed to precisely and reliably hold freezing conditions down to 3- degrees. Applications for freezers include diverse industries such as pharmaceuticals, medical devices, textiles, and food storage. However, These split systems provide very precise/constant control and good uniformity which is very important for regulated industries.



Cold Rooms

Innovative split system cold room is designed to precisely and reliably hold refrigeration conditions above 2 degrees. Applications for cold rooms include diverse industries such as pharmaceuticals, medical devices, textiles, and food storage.



Packaging Rooms/Walk-Ins

Custom walk-in rooms for the packaging, pulp and paper industries that comply with ICH, ASTM and TAPPI standards. Each room is built to your exact specifications and the systems provide the precise temperature and humidity control required by both TAPPI T402 om88- and preconditioning specification, TAPPI T 402. The system can automatically cycle between the two conditions.



Pharmaceutical Rooms / Walk-Ins

Each Pharmaceutical Room is custom built to meet ICH and FDA guidelines for storage conditions for pharmaceutical products. These rooms are used by many drug companies for active substances stability studies, stress testing, photostability testing and degradation examinations.



STABILITY ROOMS AND CONDITIONERS

CONDITIONERS

Horizontal Conditioners

Since this generating unit is self-contained, it can be easily used to condition existing spaces, small walk-in rooms, and custom chambers. The size of this unit allows it to sit on top of existing chambers or rooms and circulate conditioned air through the contained space.

The conditioner is controlled by the Smart Pad, a user-friendly system that provides optimum accuracy and control. The Smart Pad is equipped with direct readings for both temperature and humidity. It also features 60 segment programming for automatic cycling. High-low or deviation alarms and serial communications port (with software) are standard.



Vertical Conditioners

Parameter manufactures relative humidity/temperature conditioners for rooms provided by Parameter and existing rooms or enclosures. These systems are designed to provide precise temperature and humidity control.

The vertical conditioner is a great choice if you do not have ceiling space above to house a conditioner. This vertical unit attaches directly to the wall of the room to minimize floor space required.

This unit does not require compressed air or ultra pure water (tap water is generally fine). The interior and exterior are constructed of corrosion-resistant stainless steel. Low watt-density heaters also contribute to the unit's durability. Various safety devices are also included.

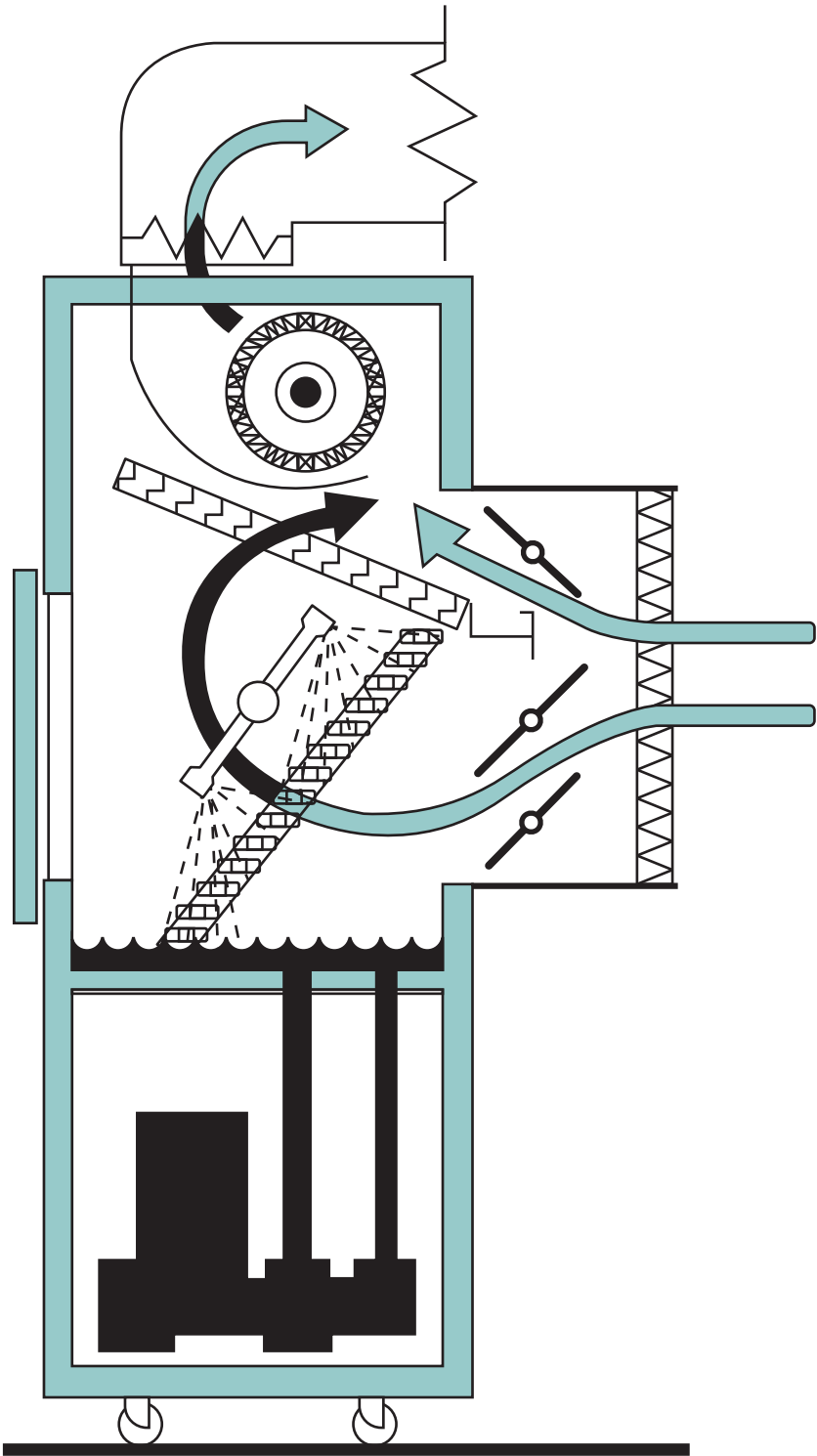


STABILITY ROOMS AND CONDITIONERS

HOW IT WORKS

PGC's method of control is the same for both reach-in chambers and conditioning systems. In short, the environment to be conditioned is controlled at a targeted dew point temperature and then reheated to a specified air temperature.

This methodology follows a proven technique that maintaining a constant dew point and air temperature will produce a very constant relative humidity.





Bioquell's validated and compliant surface and airborne biodecontamination allows you to focus on managing risks to your patients or workspaces, and reducing operating costs.

ISOLATOR WITH HYDROGEN PEROXIDE VAPOR TECHNOLOGY

Systems for Life Sciences

Bioquell Qube ideal for Sterility Testing, Gene & Cell Therapy, Small Batch Production, Compounding and Cytotoxic Preparation

Bioquell SeQure ideal for Pass-Throughs & Material Airlocks, Lab & Room Decontamination, Spaces Smaller Than 150 Cubic Meters, Viral & Bacterial Vector Work, Biosecurity and Small Research Areas

Bioquell L4- Ideal for Enclosed Systems & Equipment, Isolators, RABS, Freeze Dryers (Lyophilizers), Bio-Safety Cabinets, Cage & Rack Washers, Incubators, Filter Banks and Room Decontamination.

Bioquell Z2- ideal for Production Labs, Room Decontamination, Bio-Safety Labs and Cleanrooms.



HYDROGEN PEROXIDE VAPOR GENERATOR

Vaporization and Aeration in one

Bioquell Z2- system provides a proven -6log kill (%99.9999 elimination) of bioburden from every exposed surface in a selected zone

Scalability to meet your needs

Bioquell Z2- system can remove contaminants in areas up to 250m³, with the potential for much larger areas under Bioquell's advise

Quick setup, rapid decontamination

There is no need to wait for a limited temperature or humidity range to be reached to begin the process



Vaporizer and Distribution

Each Bioquell Z2- vaporizer can accommodate spaces up to 250m³

Touchscreen Control Panel

The control panel detaches from the system and is hosted outside of the zone being decontaminated.

Built-In Aeration

Aeration capabilities are built-in to the body of the system as a standard feature.



Flow Sciences, Inc. (FSI) designs and manufactures safety containment solutions for Research and Development Laboratories.

CONTAINMENT SOLUTIONS

Glovebox Workstation

The Glovebox Workstation series provides containment for highly toxic applications using APIs that need more safety than an opened face enclosure



CLASS I Single and Dual HEPA

Preventing loss of containment with the use of airfoils and plenums, creating a laminar airflow across the work surface, which reduces eddies and turbulence



NITROGENEMA™ Glove Box

Protecting your process by nearly eliminating moisture or oxygen with the flow of inert gas.



Chemical Fume Hood

Overlapping sash bypass to provide better containment and eliminating the need for changes if valve is installed in the lab fume hood



Vibration-free Balance Hood

The Flow Sciences Top Mounted Containment Enclosures eliminates vibration both on the work surface and on the work bench.



MICROBIOLOGY LABORATORY SOLUTIONS



STEAM STERILIZATION APPARATUS & SYSTEMS

FEDEGARI had gained a worldwide reputation for reliability and quality in the production of innovative steam sterilization apparatus and systems, thanks to the knowhow acquired and the experience and technologies developed in over 50 years' activity in this sector

STEAM STERILIZATION APPARATUS & SYSTEMS

STERILIZERS & WASHERS

Saturated Steam Vertical Sterilizers

The innovative FVA/A1, FVS and FVG series of vertical automatic steam sterilizers have been designed to meet the strictest requirements of the most demanding applications.



Saturated Steam Horizontal Bench Top Sterilizers

The FOB series are suitable for many different applications, making it the perfect choice to satisfy modern laboratory needs. FOB series autoclaves combines technology and know-how, and can be used by very different laboratories.



Stand-alone Lab Sterilizer

The FOB4 Lab Sterilizer is suitable for the use in laboratory for many different applications, such as:
FOB5 Lab Sterilizer presents a great flexibility of use, ranging from quality assurance laboratories in pharmaceutical or food industries, to BSL4 – 3 laboratories in research centres and/or hospitals.



Lab Glassware Washer

FGW Lab Glassware Washer uses a steam generator to improve washing performances: steam has an optimized emollient effect on greasy and sticky dirt.



STEAM STERILIZATION APPARATUS & SYSTEMS

EXPERIENCE TRUE STERILIZATION

Filter Decontamination

of exhaust air with sterile filter



Easy **handling of large volume sterilization** treating materials and goods as glassware and plasticware, media preparation, liquids in open and sealed containers, mixed regular and biohazard wastes, as well as porous loads, packed instruments, textiles, rubber articles, etc. for hospital use.

Transformer

Modulating Valve on feed steam inlet



Performance

Improved performances thanks to more efficient and faster processings.

Configuration

All models can be configured using a wide range of process and software options and an extensive choice of accessories.

GMP / GLP compatible data management

offering full traceability and documentation meeting the most stringent worldwide safety and quality standards. Options for compliance to EN 285 and HTM.



Thema4Lab

The pharma process controller customized for lab applications. Engineered and pre-validated by Fedegari according to GAMP 5, Thema4Lab process controller is a revolutionary solution, a completely customized system for laboratory needs that benefits from the pharmaceutical expertise of the industrial Thema4 process controller. This innovative system guarantees a reliable and cost-effective process development and is already available on FOB5 steam sterilizers and FGW glassware washers.

Separate steam generator



Valving system

Sanitary diaphragm valve in 316L stainless steel with pneumatic actuator for maximum reliability and tightness.



INTEGRA

Moving liquids in a precise and productive way is core to many tasks of laboratory professionals in the life sciences industry.

MEDIA PREPARATION & DISPENSING AND LIQUID HANDLING

Media sterilization

MEDIACLAVE allows for a much shorter process in which medium formulation and sterilization is carried out in one single step. The temperature of the agar medium is precisely monitored and controlled during the entire process



Media Automatic Dispensing

MEDIAJET can process up to 1100 dishes in a single hour and provides truly reliable walk-away operation. Equipped with a UV lamp, the filling chamber where Petri dishes are automatically filled with agar medium, is kept free from contamination.



Peristaltic Pumps

DOSE IT peristaltic pump is an easy to use device that can be used for many purposes. It is extremely light it is also easy to create individual programs, e.g. dispensing with continually increasing speed for density gradients.



Flame Sterilization

FIREBOY: Two different types of safe Bunsen burners for connection to a gas distribution system or gas cartridges.

FLAMEBOY: Flame pistol with piezoelectric ignition for connection to a gas distribution system or gas cartridges.





The world's largest manufacturer of serial-production environmental simulation chambers for scientific or industrial laboratories

TEMPERATURE, CLIMATE & ENVIRONMENTAL SIMULATION CHAMBERS

Incubators

CO2 Incubators that guarantees optimum, reproducible growth conditions for cell cultures, Standard Incubators with natural and forced convection and Cooling incubators that are gentle on samples and provide high-quality performance



Freezers

Binder freezers come with multi-layered safety concept allows users to mix and match elements to suit any environment. With practical unit sizes appropriate, sophisticated options and practical accessories, users have everything they need for reliable long-term storage of highly sensitive samples.



Chambers

Drying and heating chambers, Safety drying chambers, Vacuum drying chambers, Constant climate chambers, Dynamic climate chambers.



Ovens and Vacuum Ovens

Binder ovens guarantee short drying time with high temperature accuracy and defined ventilation where the vacuum drying chamber models enable effective drying without residue or damaging the material being dried



INNOVATIVE SOLUTIONS FOR FERTILITY CLINICS & LABS

TEMPERATURE, CLIMATE & ENVIRONMENTAL SIMULATION CHAMBERS

Heat jacket

This heated jacket heats the incubator chamber directly from all directions, resulting in a fast temperature recovery time and more uniform heat distribution.



Intuitive Touchscreen Controller

Internal data recording, can be read out in open format via USB interface.

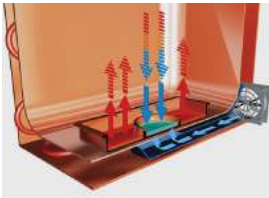


3 perforated shelves, stainless steel.

Lockable door handle.



Binder technique to prevent condensation with **integrated cold spot** to condensate the excess humidity



The new drift free CO₂ sensor technology

the new detector and source are inherently stable without the need for compensation with direct access to the sensor making maintenance easier

DuoDoor™ system: Unit door and glass door can be opened with one handle.

- Temperature range: ambient temperature plus 4 °C to 60 °C
- Humidity range: 90 to %95 RH
- CO₂ control range: 0 to 20 vol% CO₂
- O₂ control range: 0.2 to 20 vol% O₂ for versions with O₂ control
- Maximum usable space with minimal footprint and excellent ease of use
- Minimum risk of contamination thanks to uncompromising hot-air sterilization





PROCESS & LABORATORY CONSUMABLES



CHEMICALS, REAGENTS AND CULTURE MEDIA

Scharlau and Honeywell are specialized chemical manufacturers that focus on producing high-quality laboratory chemicals and reagents as well as culture media of microbiology.

CHEMICALS, REAGENTS AND CULTURE MEDIA

CHEMICALS & REAGENTS

KARL FISCHER, AQUAGENT® Reagents

Specialized in coulometric, volumetric and water analysis Karl Fischer reagents and standards.



Volumetric Solutions

Acids, Sulfates, thiocyanates, chlorides, EDTA, Hyamine solutions, concentrated solutions, nitrates, bromates, dichromates, hydroxides, permanganates and carbonates reagents and solutions.



Solvents for LC-MS, HPLC and GC

LC-MS acids, additives, solvents and water
UHPLC-MS and HPLC grade solvents and reagents
GC head space grade solvents and reagents and water



Pesticide Analysis Reagents

GC/MS Pesticides mixtures, Pesticide Standards and mixtures, Multicomponent Stock Solutions, Pesticide Degradation Check Solution and Pesticides Spiking Mixtures



CHEMICALS, REAGENTS AND CULTURE MEDIA

CHEMICALS & REAGENTS

QuEChERS Kits

Extraction kits for the extraction stage with maximum convenience and ease-of-use.
Dispersive kits for the solid-phase dispersion stage with maximum traceability.



Buffer Solutions

Complete collection of precise, reliable buffer solutions that are directly traceable to NIST



AAS and ICP Standard Solutions

Comprehensive range of Ultratrace Ultrapure Acids, ICP standards, and AAS standards



Organic Standard Solutions

Comprehensive range of organic standard solutions and reagents in many fields such as pesticides, ASTM Method, ISO, EUR standards.



Products in compliance with Pharmacopoeias

Scharlau delivers a very wide range of reagents and solutions that comply with the most recent Pharmacopoeial Monographs and ensures the products are included in the reagents list of these Pharmacopoeias.





INSTALLATION, QUALIFICATION, VALIDATION & REPAIR

OUR SERVICE TEAM

We understand the importance of adequate services and the need for a properly qualified service team to perform their tasks as expected along with the continuous changing of technologies.

Therefore, our service team receives professional training through dedicated training programs provided by our manufacturing partners and by Diamond Spectrum internal programs.

INSTALLATION AND COMMISSIONING

It is one of our responsibilities to serve a complete successful installation and commissioning of the equipment we supply; That also includes staff training on the operation of the instrument and other optional services.

CUSTOMER TRAINING

We offer training on the application and the preventive maintenance of all the equipment we supply.

MAINTENANCE & REPAIR

Maintenance and repair are performed by a well trained team of engineers and technicians. With the aid from manufacturing companies manuals, most repairs can be done at customers' sites or at Diamond Spectrum's workshop if needed which is fully equipped with specialized tools and instruments for different tasks.

CALIBRATION & CONTRACTS

We offer calibration services for selected instruments such as weighing solutions, titrators, particle counters, humidity sensors and thermal analysis. For some instruments we offer to do the adjustment based on calibration reports generated.

We also offer annual contracts that includes routine visits and emergency calls, it also includes different options for quality control assistance.



INSTALLATION, QUALIFICATION, VALIDATION & REPAIR

QUALIFICATION

Qualification is a critical step to which we are dedicated to perform for pharmaceutical industries including all the instruments and equipment we supply. we also perform qualification in other sectors as well.

SUPPORTING APPLICATIONS & REGULATIONS

With the continuously evolving technologies and the need to comply with local and international regulations and requirements, we update our staff and our clients knowledge and skills constantly to be part of our contribution and support for our customers within our field of specialty

TRAINING

Training is performed by qualified trainer's of Diamond Spectrum's team.

our trainers have training experience with different industrial and medical sectors along with special training they have received from different manufacturing companies.

CERTIFICATES

Trainees who attend our training programs will receive certificates of attendee with details about the training and training period.

Trainees who apply and pass training exams will receive training certificate with training program details.

TRAINING VENUES

Training for small groups (up to 7 persons) can be conducted at our training room and work shop in Diamond Spectrum offices, for theoretical and practical parts. For larger number of participants training can be arranged at selected proper locations.

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