

Solutions for Science

GENERAL PRODUCTS BROCHURE





Headquartered in Columbia, Maryland,

Shimadzu Scientific Instruments (SSI) is the American subsidiary of Shimadzu Corporation. Founded in 1875, Shimadzu is a \$2.5 billion multinational corporation with three major divisions: Medical Diagnostics, Aerospace/Industrial, and Analytical Instruments. The Analytical Division is one of the world's largest manufacturers of analytical instrumentation and environmental monitoring equipment. In addition to Japan, Shimadzu products are manufactured in China, the Philippines, the U.K., and in Portland, Oregon. International sales, service, and technical support facilities are located in Germany, Singapore, Australia, China, Brazil, and Turkey, with numerous regional offices and distributors worldwide.

Shimadzu initiated a presence in the U.S. in 1963 with an office in New York City. SSI was established in 1975 in Columbia, MD as a distribution center providing analytical solutions to a wide range of laboratories and lab services providers in the Americas.

Today, SSI's focus has expanded greatly beyond distribution. Steady and controlled growth has seen the opening of nine regional offices across the United States. Technical specialists, service and sales engineers are situated throughout the country. A state-of-the-art

Customer Training and Education Center has been added to the Columbia, MD headquarters.

Shimadzu U.S.A. Manufacturing, located in Portland, supplies HPLC, GCMS, and other high-tech products to the U.S. market.

With a vast installation base and as the preferred vendor of many institutions, our instruments are used by top researchers in the U.S. and across the globe. Shimadzu customers can count on the stability, experience, and support that only we can offer. For the best solutions for science, look to Shimadzu. Our engineers continue to develop the most innovative technology to meet the demanding needs of researchers and scientists wherever they may be located.

Innovative Research & Development

At Shimadzu, research and development represents the cornerstone of progress. From its inception, the Shimadzu Corporation has been investing resources to develop advanced technology to provide solutions for science, medicine, industry, and the environment. Many of our patented innovations have resulted in new discoveries and increased productivity, and have improved the quality of life the world over.

Today, Shimadzu continues the tradition as a global leader in the development of solutions for the world's technology hurdles. In 2000, we established the Genomic Research Center in the U.K. and started contract biological analysis and trials for CO₂ fixation technology. In 2001, we established life sciences laboratories in Kyoto and Tsukuba to carry out medium and long-term R&D for biological instruments and reagents. At the Technology Research Laboratories, which consists of five research centers located throughout Japan, we conduct research and development that results in original cutting-edge technology. In addition, we actively pursue joint research opportunities with universities, large corporations like

Bristol Myers Squibb, and government agencies like the National Institutes of Health (NIH).

Solutions for Science ...since 1875

Koichi Tanaka Mass Spectrometry Research Laboratory

Headed by Koichi Tanaka, awarded the 2002 Nobel Prize in Chemistry, this laboratory conducts research for the development of new mass spectrometry techniques and equipment for analyzing biological macromolecules such as proteins. The aim is to broaden the scope of mass spectrometry by actively pursuing researchers and by participating in joint research projects with leading universities, research institutes, and corporations. Under the guidance of Mr. Tanaka, the spirit of discovery and foundation for success continues at Shimadzu.

Customer Training and Education Center

The Shimadzu Customer Training and Education Center (CTEC) serves as the primary educational facility for our customers. State-of-the-art interactive teaching media is employed in classroom sessions, and highly qualified instructors train customers in the operation and maintenance of their Shimadzu instruments. Course development is based on both theoretical and practical applications. We welcome and encourage colleague discussions and provide the opportunity to interact with Shimadzu product specialists.

To meet the increasing demand for more localized availability, Shimadzu offers convenient on-site training. Interactive PC-based programs have also been developed for selected courses. For more information and/or to register call 1-800-477-1227, or visit www.ssi.shimadzu.com/training.

Product Service and Support

The goal of the Shimadzu product support staff is to ensure our customers' success with their instruments. Highly trained field service technicians, strategically located throughout the country, are equipped to enable fast and efficient response to any situation. They are supported by experienced product engineers and applications specialists at the Shimadzu Technical Support Center in Columbia, MD.

Free technical support is available by contacting our Customer Service Center at **1-800-477-1227, ext. 1710**.

To learn more about Shimadzu products and services, visit our web site at www.ssi.shimadzu.com.

Consumables and accessories for Shimadzu instruments are available online at <http://store.shimadzu.com>.

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Empower™ is a trademark of Waters Corporation
Apple® iPod touch is a registered trademark of Apple
Nanotrap® is a registered trademark of Ceres Nanosciences

HPLC / UFLC / UHPLC



Nexera UHPLC

When developing Nexera, Shimadzu's goal was not just to develop another UHPLC system. The goal was to incorporate all the core competencies of Shimadzu's businesses, to produce the most reliable and robust system for all analysis requirements. Shimadzu's passion has always been to improve performance, ease of use, and flexibility for all HPLC environments. That passion continues with Nexera, the next era in UHPLC, which offers the reliability, versatility, and superior performance without compromise at 19,000 psi.

- High-speed injection (12s) and extra-low gradient delay volume, combined with the lowest carryover without rinsing, enable ultra-high-speed cycle time
- Near-zero carryover (0.0015% without rinsing)
- Maximum resolution with the widest pressure/flow range (130MPa up to 3 mL/min, max flow rate: 5 mL)
- Modular design enables numerous system configurations, including 2D, method development, and applicated systems
- Excellent injection reproducibility (0.25% area %RSD)



Prominence HPLC/UFLC/UFLCXR

The modular Prominence HPLC series delivers even more accurate and reproducible data while maintaining the flexibility for which Shimadzu HPLC instrumentation is known. The modular components interact with the precision of an integrated system while allowing innumerable configurations—letting you design the system that best fits your needs.

Capable of system pressures in excess of 9500 psi (66MPa), and accompanied by the XR lineup of columns that features a choice of seven bonded phases, the Prominence UFLCXR delivers powerful high-pressure analysis—without sacrificing performance, reliability, or ruggedness. Utilizing standard components, Prominence UFLC raises total system productivity by generating high-quality, reproducible data without compromise.

Key components include:

- SIL-20A/AC Autosamplers—Deliver virtually zero carryover and a cycle time of just 10 seconds
- LC-20AD/AB/AT Pumps—Provide unmatched gradient speed and precision
- SPD-20A/AV/M20A UV/PDA Detectors—Ensure fast sampling with exceptional sensitivity and stability
- RF-20A/Axs Fluorescence Detectors—The highest sensitivity levels, to meet the demanding analysis requirements of trace-level components while retaining the acquisition speeds necessary for ultrafast analysis; other detector options include ELSD, RID, and CDD
- CBM-20A/Alite—The world's first web-based controller, the CBM enables users to setup, control, and monitor their HPLC remotely; the speed of these controllers makes them ideal for ultrafast LC



HPLC Front Ends for Mass Spectrometry

Shimadzu is a leader in HPLC Front Ends for Mass Spectrometry. Users can select from a variety of precise, reliable, and customizable modular components, or choose a “turn-key” system to meet a specific requirement. Choose your modular components from among six autosamplers, including the Prominence SIL-20A, six pumps, which deliver pulse-free flows from 1 μ L/min to 150 mL/min, and nine detectors. Single-point control is available for all components. Complete solutions include:

- Multi-dimensional 2D Capillary-to-Microflow HPLC—offers automated on-line Proteomics R&D
- High-speed Multiplexed HPLC—offers parallel gradient analysis on up to four columns
- Biological Analysis System—direct injection of plasma, urine, and other tough matrices



ProminenceMD

(Automated Method Development Systems)

The ProminenceMD Analytical system offers complete control from injection to detection to report generation and e-mail notification in as little as six mouse clicks. The software facilitates characterization of lead candidates by utilizing multiple columns and solvent systems so scientists can concentrate on new chemistry instead of struggling with separations. Powerful features allow around-the-clock use. The Stacked Plot Report overlays chromatograms of a single sample run on up to ten columns.

The ProminenceMD Preparative system is the ultimate in easy-to-use, unattended operation while delivering sophisticated fraction collection by many different means including: UV, Mass Spec, ELSD, and others—all in just a few mouse clicks. Scalable fraction collectors facilitate high-volume purification of lead candidates.



Prominence nano

A true nano-flow HPLC with no split flow waste, the Prominence nano HPLC makes flow-rate gradient analysis with higher reproducibility possible. Providing advanced flow-rate precision in the nano flow-rate range and consisting of Prominence Series units, the Prominence nano is available in 1D and 2D configurations to provide total support for proteome analysis. Key features include:

- Highly reproducible retention times
- Reflux Flow Control System (patent pending)—Stabilizes solvent delivery and ensures low solvent consumption with no disposal of split flow
- Flexibility—Works with any Mass Spectrometer
- Easy-to-use Nano Assist software



Prominence Prep LC

Scale-up from analytical to preparative LC is a critical factor in order to conserve solvent, and increase efficiency and productivity of purification. The LC-20AP pump contributes to a highly precise scale-up workflow since it has excellent basic performance over a wide flow range from analytical to preparative flow rates, enabling the Shimadzu prep system to be utilized in applications ranging from purification of natural products to impurity analysis. In addition, the LC-20AP provides substantial space and energy savings.

- Easy scale up from analytical to prep
- High-resolution purification with gradient elution
- High pressure tolerance (6000 psi, 42MPa)
- Enables use of high-resolution columns
- Wide flow rate range (settable .01-150 mL/min)



High Performance Integrated HPLC

- LC-2010AHT HPLC
- LC-2010CHT HPLC

The LC-2010HT Series HPLC includes two fully integrated models: the LC-2010AHT for ambient and the LC-2010CHT for temperature-controlled samples. A fully integrated HPLC, the LC-2010HT is equipped with a degasser, quaternary pump, autoinjector, column oven and, UV-VIS detector—all controlled easily from a simple user interface or from software. Compliance validation is made easy by the integrated design, and this low carryover system demonstrates superb retention time and area reproducibility. The LC-2010HT delivers:

- High-throughput analysis
- Full automation with an advanced GUI
- Built-in validation functions
- Powerful performance with near-zero carryover
- Exceptional injector reproducibility
- Multi-vendor software support, including Empower™

HPLC Accessories

- Sample Vials
- Pump Rinse Kits
- Solvent Recycle Valve
- Waste Cans
- HPLC Startup Kits
- Column Management Device
- High-speed XR Series Columns



Shimadzu offers a wide variety of HPLC accessories to improve analysis efficiency and savings, including vials with a wide mouth opening for ease of filling and a solvent recycle valve that will send mobile phase either to a waste container or back to the reservoir bottle. With a 2.2 μm particle size, and lengths from 30-100 cm, the XR Series of columns is ideal for the high-speed, high-throughput analysis that today's chromatographers demand. For extra resolution, the XR-ODSII columns have a maximum length of 150 mm.



Gas Chromatography Systems

- GC-2010 Plus High Performance Capillary GC
- GC-2014 Flexible, Small Footprint GC
- GC-8 Simple, Single Injector/Detector GC

Out of the box, the GC-2010 Plus is ready to perform high-speed GC utilizing the latest in ultra narrow-bore capillary columns. The fourth generation Advanced Flow Controller delivers up to 1200 mL/min, 140 psi of pressure and supports split ratios of 9999:1. With fast data collection and rapid cooling, it provides the ultimate in fast GC capability. In addition, the GC-2010 Plus features best-in-class detectors to meet increasing sensitivity demands for trace-level analysis, long-term stability of peak retention times, and excellent precision, even when using highly volatile solvents. Advanced Flow Technology accessories enable application-specific configurations:

- Multidimensional GC—delivers enhanced separation power for complex matrices
- Backflush—shortens run times for improved productivity
- Detector Splitting—saves time/money, and enables confident peak identification

The highly flexible GC-2014 Series offers the high-end technology of the GC-2010 to cover a wide range of applications. AFC technology comes standard, offering users the precision of AFC, automatic and manual flow or pressure control. Functionality can be expanded by installing up to four redesigned detectors and three injectors.

Simple, dedicated GC-8's are ideally suited for routine applications.

System GC Program

The updated System GC program provides customers with application-specific GCs that offer a complete solution for a laboratory's specific needs. Primarily utilizing the modular GC-2014, each system is customized with a GC, valves, an inert treatment for the analytical flow path, and installation and start-up supplies. In addition, each system is shipped with proof of performance, QA/QC, and a field test standard. The program features streamlined systems for such analyses as:

- Natural gas
- Transformer gas
- Greenhouse gas
- Biofuels
- Biomass feedstock research



Multidimensional GC (MDGC/GCMS-2010)

The multidimensional heart cutting system, MDGC/GCMS-2010, incorporating a “multi-Deans switch,” greatly increases separation power by combining two capillary columns of different selectivity, allowing you to separate and quantify your target compounds like never before. Multiple cuts can be made from the first dimensional column without retention time disruption. This, along with fully integrated software control of flows, pressures, and the switching program makes method development simple. Benefits include:

- Stable retention times allow for more precise heart cuts, leading ultimately to better measurements
- Dual-oven system eliminates the need for cryo-trapping or focusing, allowing for faster overall analysis times
- Flexibility—Any combination of GC or MS detectors may be used; single-oven operation is also available



GC Autosamplers/Injectors

- AOC-20 Series
- AOC-5000

The AOC-20i Autoinjector and AOC-20s Autosampler meet the productivity demands of laboratories that need to process large numbers of samples. It is the only GC autosampler system that provides liquid injection, ambient headspace, large volume injection (LVI), on-column injection (OCI), and dual-tower functionality. Top-mounted, the AOC-5000 high-throughput injection system combines Static Headspace, Liquid Injection, and Solid Phase Micro Extraction modes in one instrument. This unique capability allows quick switching from one application to another on the same GC system.



Gas Chromatography/Mass Spectrometry Systems

- GCMS-QP2010 Ultra
- GCMS-QP2010SE
- GCMS-QP2010S

Shimadzu’s most advanced gas chromatograph mass spectrometer, the GCMS-QP2010 Ultra features best-in-class scan speed and sensitivity, making this the perfect instrument for Fast GC or comprehensive GC/MS (GCxGCMSq) analyses. Key features include:

- Maximum scan speed of 20,000 μ /sec achieved with patented technology
- 500:1 S/N in EI mode
- Rapid GC oven cool-down—from 350° to 50° in 2.7 minutes
- Twin-Line MS System—eliminates the need to swap columns
- Newly developed “Ecology mode” significantly reduces power and carrier gas consumption

Advanced software features similarity search based on retention indices, intelligent batch sequencing, a multi-analyte quantitation function, and post-run analysis programs.

An advanced standard model, the GCMS-QP2010SE combines the benefits of economy, simple operation and enhanced performance for enhanced productivity and sample throughput. The enhanced maximum column flow (to 4 mL/min) enables a variety of columns to be selected. In addition, it enables direct sample injection (DI) and easy expandability without any changes to the GC and also features the Ecology mode for a lower cost of ownership. The mass spectral search function makes it possible to identify compounds easily.

The GCMS-QP2010S features patented constant linear velocity for optimum separation, 20 temperature ramps, and both scan and SIM modes. The SIM mode enables monitoring of up to 64 sets of ions with up to 64 ions per set—potentially determining hundreds of compounds simultaneously.

MASS SPECTROMETRY



Liquid Chromatography/Mass Spectrometry Systems

- LCMS-8030 Triple Quad LC/MS/MS
- LCMS-2020 Single Quad LC/MS
- LCMS-IT-TOF

The new triple quadrupole LC/MS/MS system combines Shimadzu's world-leading LC performance with advanced mass spectrometry technologies to create a unique system approach to ultrafast mass spectrometry detection. With high speed MRM transitions, ultra high speed polarity switching and unique UFsweeper™ technology, the LCMS-8030 is truly a universal detector for liquid chromatography.

- Fastest multiple reaction monitoring (MRM) transition times available today (dwell times of 1 msec and pause times of 1 msec)
- High-speed multi-analyte detection with 500 MRM transitions in one second
- Unsurpassed polarity switching speed (15 msec)
- Synchronized survey scan technology, utilizing a high-speed scanning rate of 15,000 μ /sec, allows full spectrum scans within a series of MRM measurements
- Easy system maintenance—enables greater uptime and usability
- Single-vendor solution (Nexera UHPLC/LCMS-8030) provides unmatched qualitative and quantitative analysis, increased productivity, and accelerated workflows for high-throughput analysis

Delivering the ultimate in measurement speed and sensitivity, the single-quad LCMS-2020 mass spectrometer offers faster measurements and higher detection sensitivity for quicker and more accurate detection of trace impurities present in pharmaceuticals, environmental pollutants, and other contaminants.

Key features include:

- Mass spectrum measurement speeds of 15,000 μ /sec
- 15 ms polarity switching
- Redesigned ion optics—provide 50 to 300% greater sensitivity than other quadrupole analyzers for commonly measured substances
- Dual ionization source (DUIS-2020) for simultaneous ESI/APCI operation

Using high mass accuracy MSⁿ analysis with constant mass resolution, ultrafast polarity switching, and high stability mass calibration, the LCMS-IT-TOF mass spectrometer is the most powerful tool for component identification and characterization studies. Powerful software enables scientists to work with greater confidence in a diverse range of research fields such as impurities identification, biomarker discovery, and structural verification.



Software includes:

- Formula Predictor: Takes advantage of multiple levels of fragmentation, isotope pattern verification, and unique fragment-ion filtering techniques to accurately determine the correct formula for unknown compounds.
- Metabolite Profiling Software: Quickly extracts and compares data obtained from complex biological samples, and then links them with identifications.
- Protein Analysis Software: Generates information-rich MS/MS spectra to help identify proteins from MASCOT searches.



MALDI TOF Mass Spectrometers

- AXIMA Resonance–MALDI-QIT-TOF MS
- AXIMA Performance–TOF/TOF MS
- AXIMA Confidence–Linear/Reflectron MS
- AXIMA Assurance–Linear MS

Delivering enhanced performance and flexibility, Shimadzu's AXIMA Series of MALDI Mass Spectrometers ranges from linear-only systems to a unique MALDI QIT-TOF configuration—meeting the requirements of every bioanalytical and chemical challenge. Featuring full lifetime support using sophisticated web-based service diagnostics and the capability of real-time remote monitoring, the AXIMA Series includes:

- AXIMA Assurance—ideal for QA/QC applications and simple yet accurate mass measurements
- AXIMA Confidence—incorporating the patented curved field reflectron for flexibility and reliable, simple MS/MS
- AXIMA Performance—high-energy CID and excellent sensitivity for complex biomolecule and polymer characterization
- AXIMA Resonance—uniquely designed for the structural characterization and sequencing of biomolecules, not just mass measurement

Develop complete solutions to biological problems by integrating an AXIMA system with our sample preparation and separation instruments, such as the Prominence nano HPLC, AccuSpot MALDI plate spotter, and CHIP-1000 Chemical Printer, which creates a powerful platform for tissue imaging. Intuitive software incorporating data-dependent workflows facilitates the seamless analysis of as few or as many samples as required and achieves the maximum result with minimal user input. Mine your data using our comprehensive, application-centric software suites:

- Polymers and copolymers
- Proteomics
- Imaging
- LC-MALDI
- Biomarker discovery
- QA/QC

MegaTOF™ Megadalton MALDI Mass Spectrometer

The solution for ultrahigh mass applications, the MegaTOF has been developed by optimizing the integration of a high-performance Shimadzu linear MALDI TOF mass spectrometer with a CovalX high-mass system, allowing outstanding detection of macromolecules up to 1,500 kDa. Ideally suited for such applications as antibody characterization, protein complexes characterization, therapeutic protein aggregates, and high mass MALDI imaging, features include:

- Ultrahigh sensitivity
- Detects macromolecules up to 1,500,000 Da
- Stabilization of molecule using crosslinking reagent kits
- Fast, specific stabilization of protein interactions
- Also applicable for low mass applications
- Apple® iPod touch control

Nanotrap® Biomarker Discovery Platform

This platform combines the unique harvesting capabilities of Nanotrap Particles (Ceres Nanosciences) with reliable AXIMA MALDI MS² detection and powerful, integrated Progenesis MALDI discovery/validation informatics (Nonlinear Dynamics). This fully integrated workflow speeds discovery, identification, and validation, and makes early disease detection possible. Nanotrap advantages include:

- One step fractionation and enrichment
- Bind low-level compounds
- Exclude undesired molecules
- Automated sample processing
- Protect trapped analytes
- Simplified screening & ID



PPSQ Protein Sequencers

PPSQ-31A/33A systems use Edman degradation to cleave amino acids, one at a time, from the N-terminals of proteins, then derivatize them to PTH amino acids and determine the sequence of amino acids using HPLC. The isocratic format of the PPSQ Series enables excellent baseline stability, superior retention time reproducibility, and reduced liquid waste/running costs. Specialized software incorporates control functions for the reaction unit and HPLC, enabling easier sequence analysis of proteins and peptides.



CHIP-1000: Chemical Printer

A revolutionary new approach to reagent deposition, the CHIP allows accurate, reproducible, and reliable deposition of a wide variety of solutions. The novel, patented combination of a high-resolution scanner with an array of four piezo-electric print heads makes accurate delivery of 100 picoliter droplets to the smallest features of sample/tissue surfaces possible. Innovative software further simplifies complex profiling/imaging experiments by supporting point-file export to a range of MALDI-TOF mass spectrometers, including Bruker, ABI, and Shimadzu, for fast and straight-forward creation of automated experiments.



Automated LC-MALDI Plate Spotter

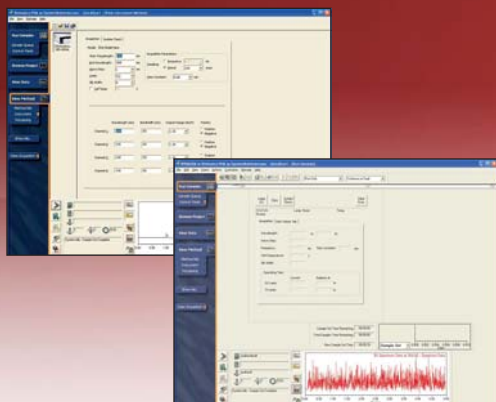
AccuSpot automates LC micro-fractionation, spotting, and preparation for MS analysis. Used in tandem with any HPLC system for precise proteome analysis, AccuSpot enables spotting on up to nine microtiter plates in 96 or 384 format or 18 2x2 (ABI) format plates. Spotting can be performed in either continuous or time-specific mode, and users control spotting conditions from a PC. A "half-contact spotting method" utilizing plate sensors (patent pending) prevents plate damage and eliminates cross contamination.



Perfinity Workstation (Automated Protein Sample Prep)

The Perfinity Workstation is a multi-column apparatus that automates protein separations and mass spec sample preparation. Automated integration of affinity selection, buffer exchange, proteolysis and desalting steps enables users to start with serum and in 10 minutes have peptides ready for LC/MS analysis.

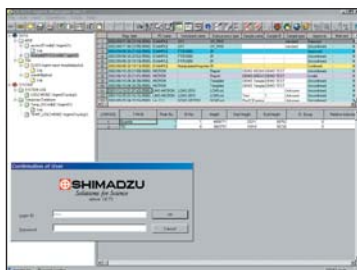
- Serum to purified peptides in < 10 min.
- Hands free operation—fully automated
- Significant reduction in cost per sample
- Easily customizable



Shimadzu LC/GC Drivers for Waters® Empower™ Software

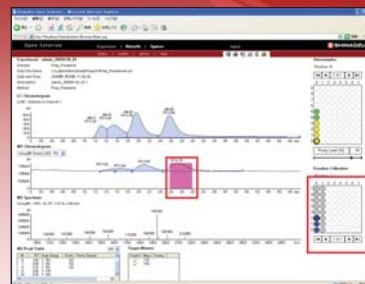
Control of the Prominence HPLC/UFLC Series is now available via a collaboration between Waters and Shimadzu utilizing the “Open Interface Portal (OIP)” for multi-vendor hardware control. With seamless operation, Shimadzu’s LC Driver allows: editing each instrument parameter and storing instrument methods within Empower; recording and managing audit trail data for changes in instrument parameters; full control of Shimadzu HPLC from an Empower workstation or client; and output of Shimadzu system configuration or instrument parameters. In addition to full regulatory compliance support and seamless system control, the detector signal is digitally transmitted to the data system. This eliminates the need to add an A/D converter for analog data acquisition, making system validation easier and more robust.

Control of the GC-2010 Plus and GC-2014 via Empower is also now available. This development enables users to control Shimadzu’s LC and GC systems and integrate data from multiple chromatographs using a single networked solution.



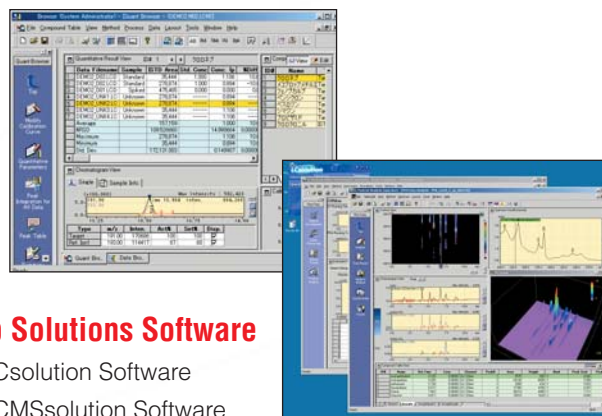
CLASS-Agent Integrated Data Management Software

CLASS-Agent software provides a scalable solution to 21 CFR Part 11 compliance requirements for a wide range of laboratory instruments from AA and Balances to TOC and UV-Vis. It incorporates audit trail and electronic signature functions plus secure database archiving for Shimadzu Instruments’ control software packages. CLASS-Agent provides users with a network-based browser for review and authorization of data packages. Easy-to-use functions allow users to preview chromatograms, create graphs and reports, and visually overlay multiple files for batch review.



Open Solution Instant Access Multiple-user Walk-up Software

Walk-up access and browsing software provides fast instrument operation and data review, enabling users to see results from LCMS, UV, and other detectors via Internet Explorer. Click on e-mail to jump directly to the results in Explorer. The software allows system monitoring from a remote PC, supports multiple views, including MS with polarity switching and fragmentation displays, and handles prep LCMS functions, including peak purity display, fraction tracking, and database functions.



Lab Solutions Software

- GCsolution Software
- GCMSsolution Software
- LCsolution Software
- LCMSsolution Software

Encompassing GC/MS, GC, LC, and LC/MS control software packages, powerful, easy-to-use Lab Solutions software can enable users to maximize the full potential of their system quickly and efficiently. All setup and quantitative functions can be performed on one screen and Wizards lead the user through the process. It allows customized applications under software control and provides universal reports for QA/QC verification and GLP/GMP compliance automatically. The system administration includes user administration, system policy setting, log browser, and audit trails, which support 21 CFR Part 11 compliance. Lab Solutions software enables programmable scan and SIM modes and provides full qualitative and quantitative support. Reports can be customized to any format with no macros required.

UV-VIS SPECTROSCOPY



UV-Visible Spectroscopy

- UV-1800 UV-Vis Spectrophotometer
- UV-2450 UV-Vis Spectrophotometer
- UV-2550 UV-Vis Spectrophotometer

At 1 nm, Shimadzu's UV-1800 spectrophotometer easily satisfies pharmacopoeia requirements, as well as the demands of university laboratories, government agencies, and the food industry. And with USB memory, validation functions, and easy maintenance, Shimadzu's UV-1800 makes your analysis easier and improves your productivity.

- Reduced stray light (less than 0.02% NaI @ 220 nm) for wider dynamic range (-4 to 4A)
- Reduced noise level (within 0.00005 Abs RMS value @ 700 nm) for ultimate sensitivity
- Enhanced validation, maintenance, and security functions
- Smallest footprint in its class saves bench space

Superbly engineered for demanding applications, the UV-2550, with its double-blazed grating, double monochromator (DDM) design, and the UV-2450 single monochromator system are ideal for resolving an array of sample types. The UV-2550, with a unique combination of low stray light, wide dynamic range, and small beam size, performs flawlessly from small sample volumes to highly absorbing samples. Think of the UV-2450 when samples require ultra-small beam size and high sensitivity.



UV-Vis-NIR and Deep UV Spectrophotometers

- UV-3600
- SolidSpec-3700

The UV-3600 combines research-grade UV-Vis or UV-Vis-NIR optical performance with the ease and familiarity of PC operation. It is equipped with three detectors: a PMT detector (photomultiplier tube) for the ultraviolet and visible regions, and InGaAs and PbS detectors for the near infrared region. Together, the three detectors ensure high sensitivity during transmittance and reflectance, even in the switch over range, and significantly reduced noise. A high-performance double monochromator ensures ultra-low stray light at high resolution, while a measurement wavelength range of 185-3300 nm allows spectroscopic analysis in a wide variety of fields.



The SolidSpec-3700 UV-Vis-NIR Series comes in two models: the 3700 for standard applications and the 3700DUV for deep UV measurement to 165 nm. Like the UV-3600, they are equipped with three detectors. Additionally, large sample compartments ensure easy measurement, and a wide variety of accessories, including the Automatic X-Y Stage for automated measurements, expands their applications.



Compact Mini Series

- UV Mini
- BioSpec-mini

The compact, versatile, easy-to-use Shimadzu Mini UV-Vis spectrophotometers provide performance features found only in more expensive instruments. Standard on-board application modes in the UV Mini include photometric, spectrum, and quantitation. Optional program packs are available to expand instrument functionalities.

The BioSpec-mini is designed for bioscience applications. Standard on-board application modes include nucleic acid analysis, protein analysis, and spectrum measurement. The nucleic acid module includes quantitation methods for double and single-stranded DNA, RNA, and standard Warburg-Christian. DNA companion programs assist in easy calculation of molecular weight and molar extinction coefficients. DNA melting calculations provide information for optimization of PCR and Hybridization.

The Mini Series incorporates a universal sample compartment that accommodates a complete line of accessories. UV Data Manager software provides unlimited data storage with expanded archiving and management capabilities.



BioSpec-nano Spectrophotometer

A state-of-the-art UV-VIS Spectrophotometer for life sciences, the small-volume, completely automated BioSpec-nano enables researchers to conserve precious samples and obtain accurate and reproducible results easily. Ideally suited for quantitation of nucleic acids or fluorescent-labeled nucleic acids, and protein analysis, the BioSpec-nano features:

- Ultra-small sample volumes (1 μ L to 2 μ L samples)
- Easy operation with “Drop-and-Click” analysis
- Automated sample mounting, measurement and cleaning
- Dedicated Software
- Optional 5 mm pathlength cell
- Photometric Analysis (up to 8 wavelengths)
- Multiple Reporting Formats (.pdf and .csv)



UV-Vis Accessories

- Thermal Melt Analysis System (TMSPC-8)
- 8 and 16 Micro-Multicells
- Modular Syringe Sipper
- 12 plus One Cell Holders—Available with Stirring
- Fiber Optic Holders

Shimadzu is leading a new revolution in microvolume sampling for UV-Vis analysis. Sampling smaller, more valuable samples has never been easier and more efficient with our user-defined accessories. Designed to monitor nucleic acid dissociation as temperature is raised, the TMSPC-8 is capable of simultaneous measurement of up to eight samples with path lengths from 1 mm to 10 mm, and allows parallel analysis as well as high-throughput screening of sequences. The ASX-520 has been designed with a precision-engineered automated sample probe arm and stationary sample racks to eliminate sampling errors.

FTIR / FLUORESCENCE SPECTROSCOPY



FTIR Spectrometers

- IRPrestige-21
- IRAffinity-1

Delivering optimum FTIR performance, sensitivity, and reliability, the IRPrestige-21 features a S/N ratio of 40,000:1 and expansion capabilities to the Near IR and Far IR ranges. With a S/N ratio of 30,000:1, the IRAffinity-1 FTIR is ideal for high-precision infrared analysis to confirm, identify, and detect foreign matter in a multitude of application areas. These powerful instruments feature:

- Long-term stability via a patented flexible joint system and a dynamic alignment mechanism
- High-sensitivity DLATGS detector
- Increased reliability with self-diagnosis at initialization and continuous monitoring of instrument during operation
- Protection from humidity with a triple protection interferometer
- Analysis support programs
- Compatibility with a wide range of accessories, including the completely automated AIM-8000 microscope

Powerful IRsolution software provides quick and easy Windows®-based software control. The software emphasizes operability with analysis support programs and, with specialized windows, users can easily perform standard operations. A variety of optional programs and accessories, such as those facilitating PLS and multilinear regression, deconvolution, and mapping measurement, are also available.



Automated AIM-8800 FTIR Microscope

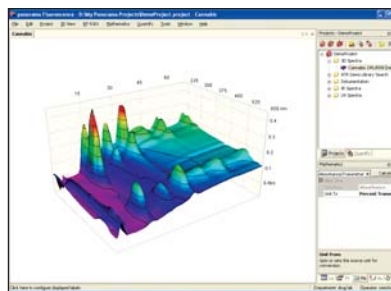
The AIM-8800 FTIR Microscope offers advanced features to enable fast, easy sample positioning and efficient analysis of microscopic defects or contaminants in a wide range of materials. All microscope operations, including aperture setting, focusing, and positioning, are controlled automatically on the PC screen. Each AIM-8800 system comes equipped with video display and screen capture capabilities via the on-board CCD camera. AIM View software can memorize X, Y, Z coordinates with aperture size and position for up to 12 sample positions. With the mapping module in IRsolution, complete automation is easily achieved. A range of accessories includes ATR and 4X objectives, sampling tools, and beam switching/reflectance kits.



Fluorescence Spectrophotometers

- RF-5301PC Fluorescence Spectrophotometer

Ideal for applications in such areas as pharmaceuticals and pharmacology, food science, and environmental monitoring, the RF-5301PC with Windows®-based software is the perfect partner for any laboratory. The high-throughput optical system in the RF-5301PC allows the measurement in seconds, and the narrow bandpass makes it possible to distinguish fluorescent peaks from excitation wavelengths.



Fluorescence Software for Windows®

The Windows-compatible, full-featured Panorama software for the RF-5301PC enables multi-component sample analysis and provides three-dimensional spectral plots to facilitate a wide range of life science and environmental applications. Panorama software provides complete GLP/GMP compliance functions, including password protection and report trails. Highly flexible data management capability includes data sharing, import and export, and customized report layouts.

Super Ion Probe software provides an enhanced system for measuring intracellular ions with the RF-5301PC. Ion concentrations and intracellular pH can be measured using indicators such as Fura-2, Quin-2, or BCECF. This easy-to-use software for Windows permits simultaneous measurement of up to four wavelength sets for multiple fluorescent probes.



Multitype ICP Emission Spectrometer

The simultaneous ICPE-9000 utilizes a large-scale one-inch CCD detector with increased pixel size and an Echelle spectrometer to enable high-speed measurement with the highest resolution of any system on the market. An extremely stable vacuum spectrometer equipped with semiconductor detectors, the first of its kind in an ICP emission spectrometer, demonstrates stable, sensitive performance over extended periods. The ICPE-9000's innovative, vertical Mini Torch cuts cost by reducing consumption of argon gas to half that of conventional torches and minimizes contamination and blockages.

Enabling easier and more accurate analysis, even with hard-to-measure high-matrix samples, ICPEsolution software features:

- Method Development Assistant
- Method Diagnosis Assistant
- Qualitative Database Calibration
- Automatic Wavelength Selection
- Spectral Interference Elements Database



Atomic Absorption (AA) Spectroscopy

- AA-7000
- AA-6200
- ASC-7000

With a double-beam system achieving superior stability, advances in optics, and a new graphite furnace design, the AA-7000 delivers unprecedented sensitivity and world-class lower limits of detection. And, with the ability to upgrade the system to handle analysis targets, the AA-7000 is your one AA solution. In addition to the smallest footprint of any flame/furnace system, the AA-7000 features:

- Newly developed 3-D optical system
- Automatic flame/furnace switching in the same compartment
- Dual background correction functions
- Single autosampler for flame/furnace analysis
- Advanced safety technology

The AA-7000 series gives users a single high-performance autosampler for both flame and furnace, saving capital cost and setup time. With the ASC-7000, users can mix and inject up to five sample types (diluted solution, standard solution, sample, matrix modifier, etc.) for a higher level of automation. In addition, optimal background correction methods are installed as standard, and a high-speed self-reversal method provides correction over a 185 nm to 900 nm range.

The AA-6200 is the lowest cost automated flame AA on the market. It features true double beam optics, deuterium background as standard, a PC, and the unique ASC-6100 autosampler. Easy-to-use software with Wizards provides easy operation for system control and data processing.

WizAArd Software

Windows®-based AA Wizard software enables fast, easy setup of instrument and measurement parameters, and analysis procedures. Analysis results, conditions, and procedures can be viewed simultaneously on the same screen. QA/QC functions, which conform to EPA methods and GLP, ensure data reliability.

ATOMIC / X-RAY SPECTROSCOPY



Energy Dispersive X-ray (EDX) Fluorescence Spectrometers

- EDX-GP
- EDX-LE
- EDX-720/800
- EDX-1200/1300 (Micro-EDX)

The EDX-GP features a revamped design and easy operation to create a novel instrument for RoHS/ELV hazardous substances management. It offers a large sample chamber that can accommodate various sample shapes and sizes, enables quick and easy loading of samples for higher sample throughput, and provides a collimator and sample observation camera as standard. New software includes simple windows for analysis of the designated RoHS/ELV hazardous substances, and more automated functions that significantly reduce the operator's workload.

Inheriting the simple operability achieved by the EDX-GP, the EDX-LE minimizes equipment maintenance by providing software with the optimal functionality for RoHS/ELV and halogen screening, and a detector that does not require cooling by liquid nitrogen.



A high-performance general-purpose instrument, the EDX-720 features a 12-inch sample chamber with automatic door, Na-U elemental detection range, 50W Rh target x-ray tube, a high-energy resolution Si (Li) detector, and five primary x-ray filters. Similarly equipped, the EDX-800 has been upgraded to include an ultra thin polymer window detector to allow increased detection of low atomic number elements; elements from C to U are detectable.

Advanced control, analysis, and reporting software, as well as a number of options, including a CCD camera for real-time sample imaging and a vacuum system and helium purge unit for light element detection, are available.

Sharing a common chamber stage x-ray source and software platform, the Micro-EDX Series is equipped with such standard features as a 50 micron focused Rh x-ray, Al to U elemental detection, high-resolution Si (Li) detector, five primary x-ray

filters, and a computer-controlled sample stage. The EDX-1300 offers detection of elements from Na to U without a vacuum.

The Micro-EDX Series includes advanced control, analysis, and reporting software with auto calibration curve selection, matrix correction, fundamental parameter, background FP, and thin film analysis software. X-ray mapping, line scan, and multipoint analysis functions are also available.



X-ray Diffraction (XRD)

- XRD-6000 (Theta/2 theta Configuration)
- XRD-7000 (Theta/theta Configuration)

Shimadzu models feature a 2.0 or 3.0 kW x-ray tube, a high-stability x-ray generator, and complete control, analysis, and reporting software. The XRD-6000 is equipped with a compact chamber design (900x700x1600 mm) and a theta/2 theta vertical goniometer, while the XRD-7000 includes options to accommodate samples up to 400 mm in diameter.

A wide range of hardware and software upgrades is available, including:

- Counter monochromator
- Sample rotation stage
- Multi-sample stages
- Micro analysis attachments
- Sample heating/cooling stages
- Percent crystallinity software



TOC-L Series

The new combustion type TOC-L Series of analyzers, ideal for wastewater, brine water, seawater, drinking water, and pharmaceutical water applications, consists of four models, including PC-controlled and stand-alone versions. Utilizing the 680°C combustion catalytic oxidation method, developed by Shimadzu and now used worldwide, and featuring an extremely wide measurement range of 4 µg/L to 30,000 mg/L, the TOC-L Series efficiently analyzes all organic compounds. Additional features:

- Automatic sample acidification and sparging
- Automatic dilution function
- On-board air purifier
- Variable syringe sizes
- High-precision mass flow controllers
- Zero maintenance Peltier cooler
- USB communications
- Compact size

Autosamplers

The ASI-L autosampler can utilize three different vial sizes to suit your application requirements. Optional magnetic stirrers can be used to agitate the sample in the vials to prevent the settling of suspended solids. The smaller OCT-L autosampler can use any vial size for up to 8 or 16 samples, and samples can be added during continuous measurement.

Total Nitrogen Analysis

The TNM-L can be added for simultaneous TOC and Total Nitrogen analysis without increasing the size of the footprint. The 720°C catalytic thermal decomposition/chemiluminescence methods are adopted for TN measurement. Enables measurements over a wide range from 5 µg/L up to 4,000 mg/L.

Shimadzu offers a number of other high performance, high value accessories to meet a range of sampling needs, including:

- SSM-5000A Solid Sample Module
- High Salt Kits
- Carrier Gas Purification Kit
- Gas Sample Injection Kit
- Suspended Sample Kit
- POC Measurement Kit
- Small Sample Volume Kit



Wet Chemical TOC-VW

Shimadzu's TOC-VW can be operated as a UV/Persulfate TOC, a Heated/Persulfate TOC, or as a unique Heated-UV-Persulfate TOC system. The three oxidation methods ensure rapid breakdown of difficult-to-oxidize compounds and shorter analysis time. The analyzer can handle particulates up to 1.6 mm in diameter, the largest for any commercial analyzer. The TOC-VW has a low detection limit (0.5 ppb) for ultrapure water analyses. Its NDIR detector has five orders of magnitude linearity. Over-range samples can be compared with up to three calibration curves automatically.

On-line Analyzers: Total Nitrogen/ Total Phosphorus/TOC

- TOC-4110
- TN-4110
- TOCN-4110
- TOC-VCSH
- TNPC-4110
- TNPC-4110C



The TOC-4110 Series includes one model dedicated for TOC, one for TN, and one that can simultaneously measure both TOC and TN. The Series offers a number of capital as well as operational cost-reducing features. A single unit can analyze up to seven different streams. The optional "Sample Thief" eliminates the need for expensive filters when analyzing particulated sample streams. The on-board air purifier eliminates the need for expensive and dangerous gas cylinders and permits standard house air to be used as the carrier gas. For TOC/TN analyzers, the proven combustion oxidation method eliminates the need for chemicals and reduces maintenance requirements.

An online version of its powerful TOC-VC Series Analyzers, the TOC-VCSH is a process-type TOC that can simultaneously measure TOC and TN, with an optional TNM module. The unit enables automatic multipoint calibration from a single standard, and is equipped with a detection limit of 4 ppb and measurement capability up to 25,000 ppm.

Easy-to-handle and simple-to-maintain, Shimadzu's TNPC-4110 Series addresses newer water quality regulations governing Total Nitrogen and Total Phosphorus in water. Incorporating many capital and operational cost-reducing features, these analyzers are capable of sampling, pretreating, digesting, and analyzing samples automatically, saving time and labor and eliminating potential sample prep errors.

TEST AND MEASUREMENT



Universal Testing Instruments

- AG-Xplus Series: Research and High-precision Grade Testers
- AGS-X Series Tabletop Testers Streamline Materials Analysis
- AG-Xplus SC (Short Column Model)
- EZTest S/L
- UH Hydraulic Frame (100 kN to 5000 kN)

Shimadzu offers a complete range of high-precision systems, including custom configurations to meet diverse application requirements. Leading the way is the top-of-the-line AG-Xplus Series, which makes measurement a breeze while providing precise, high-speed results. World-class specifications include:

- Single-click parameter settings
- Large dynamic range load cells (1/1 to 1/1000)
- 5 kHz real sampling rate improves reliability
- 1 M pulse/second resolution provides more accurate control
- Testing speed: 0.0005 to 1000 mm/min; high-speed model: up to 3000 mm/min
- Automatic self diagnostics

TRAPEZIUM-X Software enables users to build a specialized machine with the use of a USB memory card, offers innovative web-based re-analysis functions, and allows users to combine graph results from separate tests, create histograms and X-bar R charts of past data.

The Autograph AGS-X Series tabletop universal testers deliver efficient, precise tensile and compression tests for a number of industries. Features include a 10 kN frame with large-range load cell from 1 N to 10 kN, fast speed return (1,500 mm/minute), high-speed sampling (1 msec), high level of precision ($\pm 0.5\%$ of the indicated value), and a wide application range of the self-recognized load cell (1/1 to 1/500 load cell rating).

The AG-Xplus SC features a rigid, compact frame, high-speed sampling, and test force accuracy up to $\pm 0.5\%$ from 1/100 to 1/1000 load cell capacity. With the extensive lineup of configurations, the redesigned EZTest performs a wide range of material testing by utilizing an extended test stroke, a wide range of test speeds, and a larger test space.

The UH series, hydraulic systems for industrial applications, such as testing of steel bars, heavy duty assemblies, concrete, wood, etc., have a frame capacity from 100 kN to 5000 kN, a large touch-screen LCD for stand-alone operation, and high-precision control.



Servohydraulic/Fatigue Testers

Shimadzu offers a wide range of servopulser dynamic systems to address a range of application requirements. The systems utilize the Servo Controller 4830, which features enhanced load-waveform reproducibility, synchronous testing with up to four machines, test force control for specimens with “free play” characteristics, and easy operation with touch panel, function keys, numeric keys, or a jog dial.

- Micro-servo MMT Series—ideal for evaluating the dynamic strength of micro material small parts or other similar samples
- Servopulser EMT Series—capable of high-speed repeated testing at a maximum speed of 2 m/sec and a maximum stroke of ± 50 mm
- ADT-A Air Servo—a small-capacity unit, the Air Servo provides excellent waveform repeatability, while its pneumatic operation ensures a minimal effect on the surrounding environment
- EHF-EV Electro-Hydraulic—allows real time calculation-based control during testing, data processing, and more



Micro Hardness Testers

- DUH-211(S) Dynamic Hardness Testers
- HMV-2 Series Micro Hardness Testers with Electric Turret
- MCT-W Series Micro Compression Testers

Shimadzu Micro Hardness Testers are ideal for evaluating small components and surface areas in a wide range of research, quality control, and product certification applications. These easy-to-operate testing instruments combine high performance with convenient automation and user-interface features, such as an LCD touch panel. A completely automated model, which provides programmed turret indexing, can perform a complete series of test operations with one push of a button. Analysis functions include statistical calculations, data manipulation, graphics, and setting pass/fail parameters.

The MCT-W Series models, designed for evaluating the compression strength of micro substances, are available with measurement range up to 100 μm and resolution of 0.001 μm . The DUH models are the ideal choice for evaluating the surface strength of materials, while HMV models provide users with a range of loads and test modes to match the objective.



Thermal Analysis Systems

- DSC-60 Series Differential Scanning Calorimeters
- DTG-60 Series Simultaneous DTA and TGA Analyzers
- TMA-60 Series Thermomechanical Analyzers
- DTA-50 Differential Thermal Analyzer
- TGA-50 Thermogravimetric Analyzer
- TA-60WS Software for Windows®

Shimadzu Thermal Analysis Systems offer unmatched flexibility in material characterization with either complete stand-alone functionality or multi-system operation for up to four units. All analyzers utilize an applications software library and a vast array of sample pans and cooling accessories to meet the most rigorous experimental routines.

The DSC-60 doubles sensitivity and resolution while offering fast cooling and precise temperature control. The DTG-60 features a newly designed, integrated balance assembly, providing high sensitivity and excellent stability over a wide dynamic mass range. Both instruments can be equipped with an optional built-in 24-place autosampler for unattended operation and high productivity. The TMA-60 Series offers two models: a full-expansion multi-functional system and a differential expansion system. Both incorporate a high-precision digital displacement sensor for dramatically improved measurement accuracy.

Powerful, easy-to-use TA-60WS Software for Windows provides multitasking capability and permits test data to be managed via the Internet. Test and report formats are stored as templates and report printing can be automated. The TA-60WS workstation interface can be used to link up to four different instruments.



Particle Size Analyzers (0.010 to 3,000 μm)

From dense to superfine particles, Shimadzu has the high-performance Particle Size Analyzer for applications in pharmaceuticals, minerals, cosmetics, food, civil engineering, and more. The compact SALD-201V/301V offers performance and reliability at an economical price. The SALD-2201/3101, which can be equipped with a dry powder attachment, is ideal for measurement of coarse or dense particles. The SALD-7101 features a violet semiconductor laser, making it an ideal instrument for measuring superfine particles.



Nano Single Particle Size Analyzer (0.5 nm - 200 nm)

The IG-1000 Single Nano Particle Size Analyzer uses Shimadzu's unique, revolutionary induced grating (IG) method, which is based on a new principle for measuring the size of nanoparticles using the phenomenon of induced electrophoresis and diffracted light, to provide excellent reproducibility and the acquisition of stable data, particularly for sub-10 nm particles.



Capillary Flow Tester

The CFT-500D Capillary Flow Tester can be operated stand-alone or with computer control. With unmatched accuracy and maximum flexibility, the CFT-500D offers the capability to closely reproduce extrusion pressures with precise constant temperature control of test conditions as well as the test sample. It is ideal for providing accurate melt viscosities and composition ratios for materials such as plastics, adhesives, rubbers, paints, printing inks, toners, and cosmetics.

PC control of the CFT-500D provides enhanced operation, testing, and data manipulation capability. Software for Windows facilitates setting up expanded test parameters, and test results can be stored for future reprocessing.



High-Speed Video Camera

Utilizing the high-sensitivity IS-CCD image sensor, the compact HyperVision HPV-2 achieves ultrafast recording at speeds of one million frames per second. It is the only video camera to feature high resolution (312 x 260 pixels) files at all recording speeds, and newly developed multi-camera synchronized recording allows users to observe high-speed phenomena in more detail. Dedicated software saves recorded images in common formats, including AVI, BMP, TIFF and JPEG, and intuitive, simple-to-understand setting screens allow recording to start immediately after performing a few simple settings.



Balances and Scales

- Semi-Micro Balances
- Analytical Balances
- Top-loading Balances
- Portable Electronic Balances
- Precision Platform Scales
- Moisture Balances
- Specific Gravity Balances
- Animal Weighing Balances

Shimadzu balances are the result of over 80 years of international expertise in the design and manufacture of weighing instruments. Shimadzu balances and scales offer features found on the finest weighing systems, such as temperature-activated calibration and high-speed analysis. A variety of weighing applications, including piece counting, auto print, specific density measurement and choice of display units, are available along with a selection of optional accessory devices to support expanded applications and productivity. GLP/GMP and ISO compliant calibration reports can be output to printers or computers.

Shimadzu TW/TX/TXB Series Electronic Balances are the key to response and stability. Easy setting keys and a familiar 5-way Menu Navigation key enable quick configuration of display, control, and special application functions. These advanced balances feature fast and flexible calibration, streamlined design, numerous weighing units/functions, and more. Simply choose your required capacity and resolution from a dozen models designed for practical laboratories.

Shimadzu's AUW/ATX/ATY series analytical and semi-micro balances, BW/BX-K precision platform balances, TX series, and UW/UX series top-loading balances feature the high-performance UniBloc measuring cell, first introduced by Shimadzu for precision balances in 1989. Today's UniBloc is created by high-precision wire electrical discharge machining applied to a block of aluminum alloy and replaces the conventional electromagnetic balance sensor assembly. The UniBloc's compact, uniform structure ensures stable temperature characteristics, excellent response time, and stable corner-load performance.

The updated UniBloc technology expands the Shimadzu UniBloc balance lineup, which now ranges from semi-micro with minimum display of 0.01 mg to precision platform balances up to 52 kg in capacity.

Moisture Balances

The MOC120H moisture balance uses an infrared quartz heater, which is optimal for most samples, and offers an extended selection of measuring modes. Combined with UniBloc technology, Windows Direct and AutoTare functions, the MOC120H ensures accuracy, increases production, and provides convenient and easy data collection.

The compact, easy-to-operate MOC63u delivers excellent performance for applications in such industries as food, chemical, and pharmaceutical. A halogen heater enables quick, accurate measurement while the easy-start mode delivers a fast response time. Additional features include multiple measurement modes, large pan size, built-in USB port, UniBloc, and Windows Direct.

Windows® Direct

Shimadzu balances feature their award-winning innovation, Windows Direct communication, which requires no software installation to quickly integrate Shimadzu balances with existing lab or business software. This function eliminates data input errors and offers extensive flexibility for application development without compromising compliance or data security. Shimadzu electronic balances with Windows Direct support GLP, GMP, and ISO and 21 CFR Part 11 compliance. The RS232C interface is built in.

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*Contact these companies
for Analytical Instruments only



Shimadzu is a truly international company with sales and production facilities located throughout the world. Our overseas network is segmented into North America, Central and South America, Europe, China, and Asia-Oceania. In each of these regions we have established unique business models designed to best respond to the particular requirements of varying cultures. We are actively working towards expanded internationalization of technological development through greater cooperation in the areas of research, development, and sales. Shimadzu is striving to grow our business in a manner that reflects the importance of our partnerships with our customers worldwide.



Founded in 1875, Shimadzu Corporation, a leader in the development of advanced technologies, has a distinguished history of innovation built on the foundation of contributing to society through science and technology. We maintain a global network of sales, service, technical support and applications centers on six continents, and have established long-term relationships with a host of highly trained distributors located in over 100 countries. For information about Shimadzu, and to contact your local office, please visit our Web site at www.shimadzu.com.

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