

ABOUT US

GHULAM MUHAMMAD SONS

ACHIEVING EXCELENCE THROUGH ANALYTICAL SCIENCES

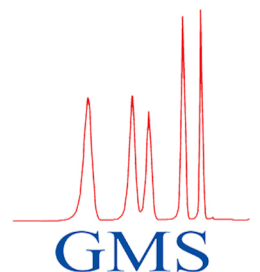


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OUR CUSTOMERS



GSK

HALEON



Highnoon



brookes



SANOFI



ROTEX PHARMACEUTICAL



Pakistan



SEARLE



ABOUT US

Ghulam Muhammad Sons (GMS), founded in Karachi in September 1972 is very actively engaged in marketing & sales of complete range of Scientific Laboratory instruments through its specialized staff all over Pakistan.

Ghulam Muhammad Sons (GMS) is one of the few companies in Pakistan who are capable of delivering a complete Scientific Analytical Laboratory with instruments from world's leading manufacturers with installation, services & after-sales service of products like Dissolution Tester & Physical Testing equipment, TOC Analyzers, HPLC systems, Stability Chambers, Ultra-Micro / Micro / Semi-Micro / Analytical / Precision Balances & Moisture Analyzers, Laboratory Refrigerators, Sieve Shaker, Laser Particle Sizer, Milling / Crushers / Grinders, Laminar Flow & Bio-Hazard Cabinet, pH and Conductivity meters, Heat measuring instruments (IP / ASTM) Thermometers, Hydrometers, Pressure Gauges, HPLC & GC Columns, HPLC /GC Syringes, Glass Capillary Viscometers, Viscometers Baths and Petroleum Test Instruments, Dispensers, Centrifuge, Oven, Incubator, Muffle Furnace, Autoclave, Safety Cabinets etc.

Ghulam Muhammad Sons (GMS) encompasses a very large field of industry which includes Pharmaceutical, Petroleum / Oil Refineries, Pesticide, Universities and Research centers both Government and Private.

All the success that Ghulam Muhammad Sons (GMS) commands today is due to the cooperation continuously extended by its foreign Principals and unshaken trust of our large Customer base.

Ghulam Muhammad Sons (GMS) accomplishments would never have been possible without the skilled and factory-trained Engineers and the managerial services of Ghulam Muhammad Sons (GMS) staff.

OUR MISSION

Ghulam Muhammad Sons (GMS) aims to contribute to their client's success through utilizing its unique capabilities and deep expertise in areas of Quality-Control, R&D, & IPC instruments. At GMS the aim is to ensure that our market leadership extends far beyond hardware into turfs like customer loyalty, product diversity, and the establishment of mutual trust between our customers, suppliers, and employees. Our mission is not the quantitative growth of the company but to ensure that through our diversity, speed, and quality we are able to bring about improvements in the quality of life of society as a whole, by partnering with our customers to create better opportunities.

OUR VISION

GMS plans on becoming the leading enterprise in the Scientific Instruments division and to be the top choice of customers. The goal is to provide our customers with world class premium instruments to meet and exceed their requirements. We are proud of our role in development and success of our customers and are always willing to put in more efforts.

OUR VALUES

At GMS we are firm believers in "Customer Is Always Right". Keeping this in mind we always deal with customers at our utmost priority. Using honesty and teamwork as our key values we excel at our work in both sales and service of instruments.

SERVICES

Ghulam Muhammad Sons has a competitive advantage to provide the complete range of Analytical Instruments for the Pharmaceutical, Pesticides, Research Labs providing services throughout the nation namely:

- i. Installation & Commissioning.
- ii. Warranty Services.
- iii. Instrument Varied Application & Usage.
- iv. Longest Warranty Than Generally Offered.
- v. Repairs & Maintenance Whenever Required.
- vi. Maintenance Contract Annual & Also Periodically to Suit Customer Convenience.
- vii. Instruments Training & Presentations for New Equipment Or Improved Versions.

We have on board with us qualified factory trained sales and service engineers to cater to installations, maintenance, & repair facilities.

Since decades, we are renowned, well-acknowledged & respected in the industry for excellence in supply, installation, & maintenance.

ERWEKA

ERWEKA is a leading international manufacturer of test equipment for the pharmaceutical industry. We supply tablet test equipment for large pharmaceutical and life science companies, research and test laboratories, and universities all over the world. Founded in Germany in 1951, ERWEKA is the only manufacturer to offer a product for every required test for solid dosage form drugs. Today we are proud to have the most comprehensive product range and experience in our market sector. Our benchmark is top quality. From engineering and design to manufacturing and product support, we take a no-compromise stance on standards. ERWEKA stands for excellent product quality, attractive design, and bespoke customer support. Our clients have trusted us for more than 65 years.

DT LIGHT SERIES

DT 126 light

The perfect entry-level dissolution tester.

High head with 6 test stations

Dimensions (width / depth / height): 510 mm / 450 mm / 660 mm

Weight: 30 kg



DT 128 light

Dissolution testing with up to 8 test stations.

High head with 8 test stations

Dimensions (width / depth / height): 642 mm / 482 mm / 680 mm

Weight: 38 kg



DT 1212 light

High-volume dissolution tester.

High head with 12 test stations

Dimensions (width / depth / height): 932 mm / 444 mm / 656 mm

Weight: 60 kg



DIGITAL DT 950 SERIES - Dissolution Tester

DT 956/957/958

The digital embedded PC technology offers all advantages and unlimited possibilities of modern software programming making the DT 950 is more future proof than ever before. In the first step, this means simple network printing and a modern user interface. In the future, the DT 950 Series will be expanded with additional functions and can thus constantly adapt to the user's requirements and future industry 4.0 developments.

DT 950 Series Base Device

Extension to up to 8 test stations

Automatic tablet drop

USP methods 1, 2, 5 and 6

Automatic sampling station low-head or high-head

Dissolution Offline System

Automatic sample collection with our FRL sample collector

IPC or PVP pump

Control via PC with Disso.NET 4 with Audit Trail and MySQL database*

21 CFR part 11 compliant

Dissolution Online System

Automatic UV/Vis-Analysis with spectrophotometer

Control via PC with Disso.NET 4 with Audit Trail and MySQL database*

IPC or PVP pump

21 CFR part 11 compliant

Direct data evaluation in the software

Dissolution On-/Offline System

Dissolution HPLC On-/Offline System or Dissolution On-/Offline System with UV/Vis

Control via PC with Disso.NET 4 with Audit Trail and SQL-Database*

21 CFR part 11 compliant

Automatic HPLC- or UV-Vis analysis with sample collector

With HPLC: Automatic handoff of the sample to the HPLC-analysis



DIGITAL DT 9510 SERIES - Dissolution Tester

DT 9512/9513/9514

The ERWEKA DT 9510 Series is the bigger sibling of the digital DT 950 Series dissolution tester. Controlled by the same embedded PC, every component of the DT 9510 is focused on reliable, high volume digital dissolution testing: The test stations (up to 14) are driven by a single, powerful motor and the big waterbath holds the temperature stable due to the thermal inertia of water. This ensures that parallel testing of two batches of samples can be done at precisely the same conditions, making comparison between the two as reliable as possible and 100% USP/EP compliant.

DT 9510 Series Base Device

Extension to up to 14 test stations

Automatic tablet drop

USP methods 1, 2, 5 and 6

Automatic sampling station low-head or high-head



Dissolution Offline System

Automatic sample collection with our FRL sample collector

IPC or PVP pump

Control via PC with Disso.NET 4 with Audit Trail and MySQL database

21 CFR part 11 compliant

Dissolution Online System

Automatic UV/Vis-Analysis with spectrophotometer

Control via PC with Disso.NET 4 with Audit Trail and MySQL database

IPC or PVP pump

21 CFR part 11 compliant

Direct data evaluation in the software

Dissolution On-/Offline System

Dissolution HPLC On-/Offline System or Dissolution On-/Offline System with UV/Vis

Control via PC with Disso.NET 4 with Audit Trail and SQL-Database

21 CFR part 11 compliant

Automatic HPLC- or UV-Vis analysis with sample collector

With HPLC: Automatic handoff of the sample to the HPLC-analysis

DISINTEGRATION TESTERS

ZT 120 light Series

The ERWEKA ZT 120 light series is the perfect entry-level disintegration tester with one or two motor driven USP/EP/JP compliant test station. The compact unit of our light series is equipped with an integrated flow-through heater and a moulded one-piece PET water bath (no leaking / breaking, easy to clean) with cover. The ZT 120 light series can be easily operated via a membrane keypad. Defined test run parameters such as run time and water bath temperature are entered with symbol keys and the actual values are then shown on large and bright LED displays. The run-time counter automatically starts as soon as the basket rack assembly is lowered into the test media.

ZT 121/122 light

Qualification documents IQ/OQ/PV

Water stabiliser with colour indicator

ERWEKA IQ/OQ/PV service at customer site

Maintenance service

External electronic temperature sensor PT 100

Quick Clean Basket type A (6 test tubes) 100% USP compliant



ZT 320 Series

On the ZT 320 disintegration testers series, the test stations (one to four) are driven individually. In order to guarantee outstanding quality and the highest ease of use each test station is controlled by its own keypad. After programming the required test run time, the basket rack assembly with its loaded samples is automatically lowered into the media. On completion of the preset run time or when the stop button is pressed, the basket rack is raised from the media to prevent further disintegration of the samples (optional).

The temperature displayed on the LED display is the one measured by the standard external temperature sensor, either located inside the water bath or the test media. The optional type "B" basket rack assembly with three larger test tubes can be fitted to all ZT 220/320 disintegration testers.

Optionally the basket rack assembly is moved into the media when the start button is pressed and automatically raised on completion of the preset run time or when the stop button is pressed. All recorded test run parameters can be hard copied via the USB printer interface. The actual disintegration time can be added manually afterwards.

The ZT 320 series can also be equipped with 100 % USP/EP/JP compliant "Quick-Clean" basket racks and type "B" baskets with three larger test tubes. Of course, all required validation handbooks and tools as well as ERWEKA PQ tablets with specified disintegration times are available.

ZT 321/322/323/324

Automated lift-in and -out of the basket rack assembly/ies on start / completion of the pre-set run-time of each test station

Basket rack assembly type A (6 test tubes) or type B (3 test tubes) 100% USP compliant

Media pre-heat and disintegration rack storage container located in the water bath (ZT 321 and 323 only)

Quick-Clean-Basket (100% USP/EP/JP compliant) for fast cleaning of the test stations

Water stabiliser with colour indicator

Qualification documents IQ/OQ/PV

ERWEKA IQ/OQ/PV service at customer site

Maintenance service



ZT 730 Series with cable-free AirBasket

The ERWEKA ZT 730 Series with cable-free AirBasket automatically determines the disintegration time of samples by using a unique system of magnets and sensors. The ZT 730 is available with one (ZT 731) or two (ZT 732) individually driven test stations and is equipped with an integrated flow-through heater. Its newly designed, cable-free AirBasket makes disintegration testing with automatic determination of the disintegration time as easy and fast as possible. Its electronics compartment is sealed, making it dishwasher proof. Its sensors are also highly durable and enable the AirBasket to be used in acidic media. AirBasket is available as type A basket with 6 test tubes for standard tablets, or type B basket with 3 test tubes for bigger tablets (according to USP/EP standards).

The reliable waterbath technology utilizes the thermal inertia of water to create a steady temperature for testing according to USP/EP standards. Its temperature sensor PT 100 allows constant control of the waterbath temperature. The ZT 730 series is controlled through an intuitive 7" touchscreen and is capable of storing and retrieving up to 200 products/methods with results and parameters.

ZT 731/732

Intuitive navigation due to user-friendly menu structure

4GB memory for methods and test results

Data export option: USB or LAN interface exports data in XML or CSV format

Interconnect your systems: Load data between system via USB/SD interface

Automatic store function of test results after each test

Back-up function through USB/SD-Card

Customizable IQ/OQ/PV validation interval periods



TABLET HARDNESS TESTERS

TBH 125

Measuring range from 10 to 300 Newton

Test samples of up to 28 mm diameter

100 % USP/EP/JP compliant.

Measuring units in Newton, Strong Cobb and Kilopond

USB-A printer interface for documentation of time, date, results and statistics with specified printers; USB-B interface for firmware updating



TBH 325

Measuring range from 10 to 500 Newton

Test samples of up to 28 mm or 70 mm width

Test samples of up to 28 mm or 70 mm diameter

Optional weight measurement

100 % USP/EP/JP compliant.

LAN/USB interface for external control and storage of results by the optional MC.NET software



TBH 425

10-chamber-star feeder with brushes to clean the transport way

External Sartorius balance but integrated data

Diameter up to 28 mm

Test samples up to 28 mm, optional 70 mm

Measuring range 3 to 500 Newton

LAN/USB interface for external control and storage of results by the optional MC.NET software



TABLET COMBINATION TESTERS

Easy Check fully automatic hardness testing

EasyCheck is the new entry-level tablet combination tester that tests for up to 5 parameters. The compact system is 100 % compliant with all common pharmacopeias, and excels, above all, through innovative design features and a clear focus on essentials: Its integrated load cell automatically weighs samples, the Oblong Slider® automatically brings evenly shaped oblongs into perfect alignment, and the intuitive touch display allows storage of up to 100 products/methods. The EasyCheck offers a test memory for up to 1 million test results directly on the unit, a 21 CFR Part 11 compliant audit trail light feature and a data export function to CSV- and XML-format. EasyCheck is your entry-level device for easy, fully automatic and highly precise testing for up to 5 parameters!

Intuitive Operation

Broad feature set

In the development of the EasyCheck touch display we focused on those features which users find most important: Easy and uncomplicated creation, starting and documenting of test methods. The highly intuitive touch display enables the unit's complex functions to be operated and controlled with maximum ease of operation. Measurements can be launched and displayed quickly and easily. For convenient data input (e.g. in order to create new products) the unit now also offers support for USB keyboards – which significantly facilitates data management directly from the device itself.

Storage of test results

By default, the unit stores 100 products/methods and has a product memory that can hold up to 1 million test results – enabling results from earlier tests to be re-called whenever required.

In addition, extensive integrated calibration functions and the Audit Trail Light feature (logging What, Who, When) ensures that you have access to precise test results and extensive documentation of all working steps at all time - highest user convenience combined with powerful functionality.



FRIABILITY TESTER – The new TAR II

Intelligent, Upgradable friability & Abrasion Testing

The TAR II is the next step in intelligent, upgradeable friability & abrasion testing according to USP/EP/JP. Its unprecedented flexibility and intelligent features such as TestAssist and direct balance data transfer make TAR II the most advanced friability tester on the market.

- 7" high resolution touch display
- Modern user interface
- 100% USP/EP compliant friability testing
- Automatic calculation features of the TestAssist



TAPPED DENSITY TESTER

SVM II

One Device with 5 Variations

The new SVM II offers the same flexibility as its 5 predecessor models. It can test for USP method 1 and method 2 and can be equipped with either one or two test stations of the same method or a combination of both. Optional changing from one variant to another can be done by the user within minutes. This makes the SVM II the most flexible tapped density tester we ever built.

Intelligent SwitchPlate System

With the innovative Switch Plate system, the SVM II is as flexible as ever before. Available Switch Plates:

- USP 1 with 1 station
- USP 1 with 2 stations
- USP 2 with 1 station
- USP 2 with 2 stations

Modern touch interface with TestAssist

- The SVM II is controlled by a high-resolution touch display.
- With its innovative TestAssist, the user is guided through the tapped density testing process from start to finish.



GRANULATE FLOW TESTERS

GT Series (GTL / GT / GTB) Three Devices, all options

100% EP-compliant measurement methods possible

Angle of repose Laser Measurement

Powder and granulate flow measurement with up to 5 methods

Additional options for customer-specific measurement methods

Interface for immediate printing of results



Manual Powder and Granule Density Testing – SMG

The manual ERWEKA SMG 697 is the unit for the reproducible determination of apparent bulk density, which can be used with all free flowing powders or granules. According to DIN ISO 697, the apparent bulk density is determined by measuring the mass of powder in a receiver of known dimension after filling from a funnel of a specified shape under specified conditions.

Included in the delivery are the apparatus SMG 697, operating instructions and a calibration certificate.



SUPPOSITORY TESTER

Suppository Disintegration Testing ST 35

- Set of three magnetic stirrers, controlled by the membrane keys of the unit
- Water stabiliser with colour indicator, one bottle for two fillings



Suppository Hardness Tester SBT 2

- The suppository hardness tester (type SBT 2) consists of an electrically heated chamber with an integrated sample holder and a number of interchangeable plastic inserts to accept various sized suppositories.
- Once up to the desired temperature, the hardness is checked by weights (included in the standard delivery range) which are gradually placed on the device until the suppository collapses under the load of the added weights.
- The results are expressed in terms of total weight required to bring about the collapse of the suppository.



Suppository Melting Point Tester SSP

- The ERWEKA SSP measures the melting point of suppository samples.
- It consists of a graduated tube with an integrated test chamber made of glass.
- The sample to be tested is placed in the spiral shaped glass test basket inside the test chamber, which is surrounded by a water jacket.
- The water inside the jacket can be simply heated by the optional circulation heater EST 2.



Suppository Penetration Tester PM 30

- The ERWEKA PM 30 measures the softening time of suppositories
- Glass test tubes, 2 g, with adaptor, for PM 30 acc. to EP App. B
- Glass test tubes, 3 g, with adaptor, for PM 30 acc. to EP App. B
- Immersion thermometer with certificate (instead of non-certificated immersion thermometer)
- Water stabiliser with colour indicator, one bottle for two fillings



SIEVERS TOC ANALYZERS

Our history is defined by expertise and innovation. With the acquisition of GE Water & Process Technologies, SUEZ carries on with that tradition, which focuses on research, development, and our people.

As the world's leading manufacturer of Total Organic Carbon (TOC) Analyzers, we continuously strive to exceed expectations by providing superior technology, design, quality, and service. Our Analytical Instruments team has acquired more than 30 patents for technical innovations— including the Sievers Membrane Conductometric Method and the Integrated On-Line Sampling System (iOS).

M9 TOC Analyzers **m-power your team to be compliant and efficient**

M9 Laboratory TOC Analyzer (superior productivity)

Measure discrete grab samples via sample vials and sipper tubes or connect to the Sievers Autosampler to automate high-volume sample analysis.

Well suited to analyze a variety of sample matrices and concentrations.

Offers a small profile to efficiently use valuable bench space.

Optional Stage 1 conductivity capability for simultaneous testing of TOC and conductivity.

Optional Turbo mode for rapid analysis, even in the lab.

M9 Portable TOC Analyzer (genuine versatility)

Lightweight, IP-21 rated, compact design can be hand-carried for TOC analysis anywhere.

Measures discrete grab samples, automated analysis with the optional Sievers Autosampler, or On-Line mode.

Optional Stage 1 conductivity measurements for grab, Autosampler, or On-Line mode.

Optional Turbo mode for microelectronics (reclaim applications) and pharma (cleaning validation.)

Designed for at-line cleaning validation applications.



SIEVERS M500 TOC ANALYZER

The Sievers M500 Online Total Organic Carbon (TOC) Analyzer revolutionizes online detection of organics by bringing new performance, design, and data management features to the industry leading Sievers TOC platform.

The Sievers reagent less Membrane Conductometric TOC Detection Method delivers unmatched reliability, robustness, and accuracy for pharmaceutical Purified Water (PW) and Water for Injection (WFI) applications. Sievers products have been leaders in TOC analytical instrumentation since the introduction of membrane conductometric technology to the market more than 25 years ago.

Sievers M500 TOC Analyzer: Designed for Today's Data

The Sievers M500 leverages comprehensive industry-leading TOC data management tools to ensure data is secure. It supports compliance to 21 CFR Part 11 and adherence to US FDA and other Pharmacopoeia Data Integrity guidelines using new digital features:

DATA TRANSFER

- Remote access
- Ethernet and WiFi
- Advanced communications using 4-20 mA, Modbus, Profinet, and binary

DATA SECURITY

- Password protection
- Data encryption
- Customizable access, roles, and permissions

WEB-BASED DATA MANAGEMENT

- Closed system architecture
- Customizable data transfer and export.



CHECKPOINT PORTABLE TOC SENSOR

Measure low-level total organic carbon (TOC) anywhere, anytime with the new CheckPoint Pharma and CheckPoint On-Line/Portable Total Organic Carbon (TOC) sensors. Affordable, versatile, and portable, the CheckPoint sensors can be used online for continuous monitoring or hand-carried to any point in a water system for rapid diagnostic sampling and troubleshooting. The two CheckPoint models have the same specifications except as follows:

The CheckPoint Pharma has a dynamic range of 0.21 to 1,000 ppb and can measure TOC in hot or ozonated water. It meets US, European, Chinese, and Indian Pharmacopeia specifications.

The CheckPoint Pharma^e which is designed to meet the greater sensitivity requirements of the semiconductor, power, and other markets, has a dynamic range of 0.05 to 1,000 ppb.

Benefits

Cost Effective

Rapid Analysis

Easy to use with low maintenance

Sensor to sensor matching



CheckPoint highlights

Enables on-line and off-line testing in one instrument

Display screen and documentation available in English, Chinese, or Japanese

Self-contained pump for easy system suitability and calibration testing

Ethernet Modbus transmission to facilitate data system

IQ/OQ/PQ validation protocols provided

User-friendly TOC graph that indicates trends

Stores 28,800 records with TOC display data accessible using USB memory stick

SIEVERS InnovOx TOC ANALYZER

From industrial process water and wastewater to concentrated brine streams, Sievers InnovOx Total Organic Carbon (TOC) Analyzers are designed to measure organic carbon across a broad range of water samples. Offering a dynamic operating range of 50 ppb to 50,000 ppm, this analyzer ensures superior TOC recovery and accuracy with its patented Supercritical Water Oxidation technique. This technique makes the analyzer more robust and offers greater uptime in harsh sample matrices. Protect equipment, avoid regulatory fines, and detect process changes with Sievers InnovOx.

Sievers InnovOx ES Laboratory TOC Analyzer

Robust sample handling capabilities designed for challenging applications. Sievers InnovOx ES Laboratory Total Organic Carbon (TOC) Analyzers offer a dynamic operating range of 50 ppb to 50,000 ppm. Its patented Supercritical Water Oxidation technique allows for superior TOC recovery and accuracy. The Sievers InnovOx ES Lab offers a variety of measurement modes including TOC and Non-Purgeable Organic Carbon (NPOC). The InnovOx ES Lab provides versatile analysis options such as multiple runs on the same sample, auto calibration range selection, and integration with the Sievers Autosampler.

Sievers InnovOx On-Line TOC Analyzer

Real-time continuous monitoring for process control and regulatory compliance. Sievers InnovOx On-Line Total Organic Carbon (TOC) Analyzers offer continuous organics monitoring and multi-stream capabilities. The multi-stream capability allows user to run up to five samples if processes do not require continuous monitoring. The Sievers InnovOx On-Line has a dynamic operating range of 50 ppb to 50,000 ppm. Its patented Supercritical Water Oxidation technique allows for superior TOC recovery, accuracy, and instrument robustness.



SIEVERS ECLIPSE BACTERIAL ENDOTOXINS TESTING (BET)

Breakthrough BET technology that delivers automation and compliance

The Sievers Eclipse* Bacterial Endotoxins Testing (BET) Platform empowers users to be conscious of today's needs to protect valuable natural resources while still complying with the strict analytical and regulatory requirements drug and device manufacturers must meet.

By decreasing horseshoe crab (HSC) lysate use by up to 90%, the Eclipse platform reduces the demand on the most sensitive and unmatched natural endotoxin detection reagent on the planet. It delivers a fully compliant BET assay that the global HSC population can sustain. The Sievers Eclipse BET platform decreases setup time by up to 85% while meeting all USP, EP, and JP compendial requirements. Through innovative design, the Eclipse platform significantly decreases pipetting steps, reduces operator-to-operator variability, and simplifies assay setup.

The Sievers Eclipse BET platform delivers in four key areas

Regulatory Compliance

Simplification

Analytical Performance

Increased Efficiency

Reduce prep time by up to 85% and set up assays in as little as 9 minutes

DO MORE WITH LESS WHEN LESS IS MORE

- Reduce LAL reagent use by up to 90% Increase daily sample throughput
- Reduce pipetting steps by up to 89% and decrease the risk of repetitive stress injury
- Meet global regulatory requirements
- Reduce prep time by up to 85% and set up assays in as little as 9 minutes
- Maintain compliance with 21 CFR Part 11 and Data Integrity guidelines

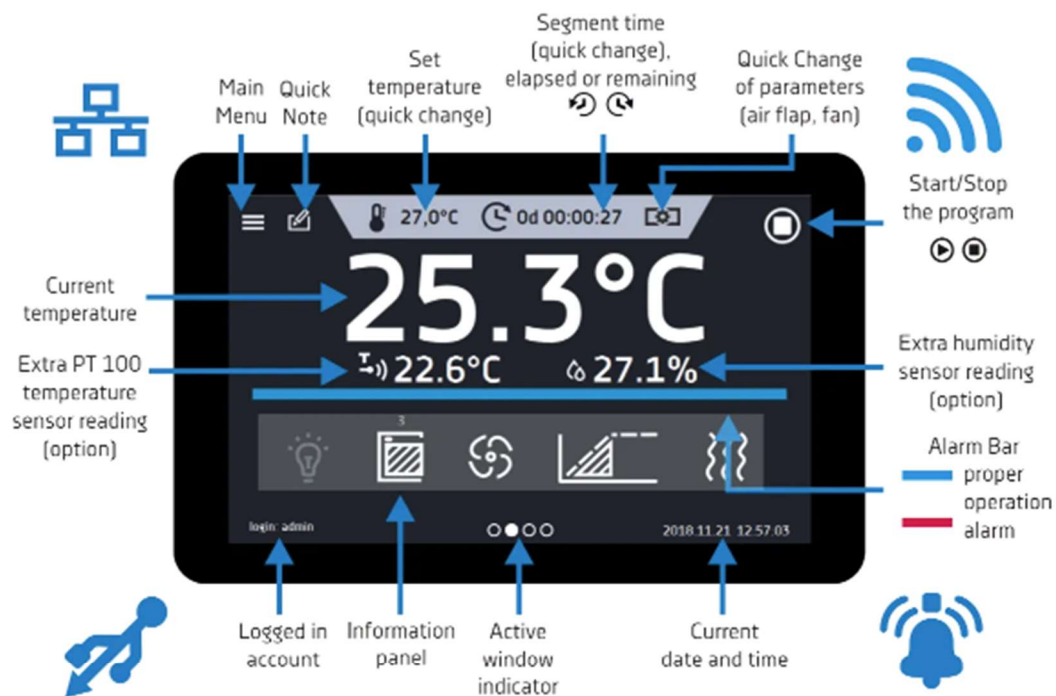


POL – EKO PERFECT ENVIRONMENT

POL-EKO is present on the Polish market for over 30 years. Our experience shows that our customers depend on both: high-quality equipment, as well as professional use. Therefore, we offer you a first-class device while constantly working on their further development. The assortment of products we offer is extremely rich. Every day, our customers can count on our help in choosing the right equipment and if in our offer you will not find the right product for your application, our engineers are ready to design a solution for a particular recipient. The number of our experienced staff will always help you find the best solution.

Smart Pro EN

The brand-new Smart PRO controllers are direct followers to the TOP+ controllers and will be available for the KK climatic chambers, IL cooled incubators, SL drying ovens, CL laboratory incubators, as well as the ST cooled incubators, CHL laboratory refrigerators, ZL laboratory freezers and ZLN-UT ultra-low freezers.



Touch screens of the Smart and Smart PRO controllers can be operated with latex gloves!



The Smart and Smart PRO controllers feature wide angle displays. You can see the screen clearly from any angle, regardless of the light intensity.

CLIMATIC CHAMBERS THE RIGHT CLIMATE FOR YOUR RESEARCH

The climatic chambers of POL-EKO are devices in which temperature and humidity are parameters that can be almost freely simulated. These are specialized chambers for testing under constant environmental conditions. The most important feature is the ability to create stable conditions through precise temperature and humidity control.

Our devices are equipped with a modern touch screen Smart PRO controller. The chamber is made of high-quality acid resistant steel. The unit has a double door with lock.

Aging test chambers allow us to maintain stable temperature parameters (0. . 60°C for KK series or 0. . 100°C for KKS series) and humidity (30. . 90% for KK series and ultrasonic humidifier or 10. . 90% for KKS series steam humidifier). Climate chambers are specialized test chambers for aging tests, stability tests, thermal or climatic tests.



Smart PRO - preview screen

Models

- Climatic Chamber KK 115
- Climatic Chamber KK 240
- Climatic Chamber KK 350
- Climatic Chamber KK 400
- Climatic Chamber KK 500
- Climatic Chamber KK 700
- Climatic Chamber KK 750
- Climatic Chamber KK 1200
- Climatic Chamber KK 1450



LABORATORY REFRIGERATORS HAVE A COOLING SYSTEM

Laboratory refrigerators can maintain a temperature from 0°C up to 15°C. The CHL laboratory refrigerator is a specialized device for storing temperature-sensitive samples. The laboratory refrigerator has a cooling system that allows samples to be stored below ambient temperature. Such storage guarantees the physical and chemical stability of the sample.

Laboratory refrigerators/fridges are equipped with highly advanced microprocessor temperature controller Smart or Smart PRO, which maintains the set temperature with high stability and uniformity. The advantage of the above-mentioned controller is a large and colorful display and intuitive operation even when wearing latex or nitrile gloves. In laboratory refrigerators/fridges, temperature is the priority, so the compressor is turned on when necessary. Comparatively in refrigerators the compressor turns on at a constant interval, regardless of the temperature in the compartment. POL-EKO laboratory refrigerators have forced air circulation, which has beneficial influence on temperature uniformity inside the device. Two-component polyurethane foam provides perfect insulation of the refrigerator chamber and refrigerants used by POL-EKO are ecological.

Models

- Laboratory Refrigerator CHL 1
- Laboratory Refrigerator CHL 2
- Laboratory Refrigerator CHL 3
- Laboratory Refrigerator CHL 4
- Laboratory Refrigerator CHL 5
- Laboratory Refrigerator CHL 6
- Laboratory Refrigerator CHL 500
- Laboratory Refrigerator CHL 700
- Laboratory Refrigerator CHL 1200
- Laboratory Refrigerator CHL 1450



INCUBATORS

Laboratory Incubators

Laboratory incubators are thermostatic devices used to incubate samples in temperature conditions (up to a maximum of +100 °C). Laboratory incubators are devices equipped only with a heater system (no cooling system). These devices maintain a constant temperature from 5 °C above the ambient temperature to maximum of 100 °C. Thus, these devices will allow proper testing under specific temperature conditions.

CL laboratory incubators are available with double door (external solid, internal glass). Optionally, the external door can be fitted with a vision window to allow observation of samples. In order to secure the cartridge, all doors are locked. The housing can be powder coated or made of structural stainless steel (linen). POL-EKO laboratory incubators are equipped with LAN port and USB port for efficient data transfer to external media. Laboratory incubators are distinguished by a microprocessor-based, large colour display available in Smart and Smart PRO options. Our offer includes incubators with natural or forced air circulation.

Peltier-Cooled Incubators

no vibrations - through the use of Peltier cells, vibrations previously generated by the compressor are eliminated

Fluctuation and variation - the cooling system based on Peltier cells allows to achieve excellent fluctuation and variation additionally the time of reaching the set temperature, e. g. after opening the door, is much shorter

lighter and smaller design - Peltier cell cooling system reduces the size of the device and its weight

environmentally friendly - removing the compressor eliminates the use of refrigerant gases that have a negative impact on the environment

CO2 Incubators

The CO2 incubator is a unit designed to ensure **optimal conditions for cell growth and tissue culture**.

Very precise temperature control, appropriate humidity and CO2 concentration are undeniable advantages of this product. The CO2 incubator is equipped with the most advanced controller – **SMART PRO**, which was created for the most demanding customers. The intuitive menu and user-friendly software are among the many advantages of the controller.

The ILC 180 SMART PRO incubator comprehensively protects the tested load, and this enables **hot air sterilization up to 180°C** ensuring that each new test begins in a clean unit. The **lack of a fan** additionally eliminates the possibility of potential contamination of the samples and the design of the inner chamber of the incubator with **rounded corners and edges** allows for easy cleaning of the chamber. **The internal glass door** allows you to view the load without the risk of changing the conditions in the chamber.



DRYING OVENS DRYING, STERILIZATION AND HEATING UP TO +300°C

Drying ovens are designed to provide high temperatures up to 300°C. Drying oven (SL) is designed for drying in the temperature range from +5°C above ambient temperature to +300°C. POL-EKO drying ovens are available in a variant with natural air circulation (SLN) or forced air circulation (SLW). Choose from models with a Smart or Smart PRO

Models

- Drying Oven SLN 15
- Drying Oven SLN 32
- Drying Oven SLN 53
- Drying Oven SLN 75
- Drying Oven SLN 115
- Drying Oven SLN 180
- Drying Oven SLN 240
- Drying Oven SLN 15



LABORATORY FREEZERS

Laboratory freezers can freeze and store frozen samples. Taking care of the quality of our products, in our offer you will not find a two-function device called “laboratory fridge-freezer”. Our refrigerators do not have an integrated freezer inside like home appliances. Our fridge-freezers are two-chamber devices – one chamber is a refrigerator, the other is a freezer. Bearing in mind the concern for device parameters and their functionality, we have created few product categories: laboratory refrigerators, laboratory freezers and ultra-low freezers. Laboratory refrigerators are equipped with a cooling system – they keep the temperature lower than the ambient temperature, however their temperature range doesn’t reach negative values. Usually it is 0-10 or 0-15°C. In the case of our laboratory freezers, the temperature inside the chamber may reach -25/-40°C. The temperature goes even lower in ultra-low freezers – up to even -86°C.

Models

- Laboratory Freezer ZLN 85
- Laboratory Freezer ZLN-T 125
- Laboratory Freezer ZLN-T 200
- Laboratory Freezer ZLN-T 300



ULTRA-LOW FREEZERS

"As Smart As Your Smartphone" ultra-low freezers ZLN-UT

Ultra-low-temperature freezers (ZLN-UT) are devices that allow deep freezing and long-term storage of biotechnological samples and other materials in the temperature range from -86°C to -50°C . Depending on the application, you can choose the COMFORT model (interior made of stainless steel DIN 1. 4016) or PREMIUM (interior of acid-resistant stainless steel DIN 1. 4301).

Ultra-Low Freezers with polyurethane foam insulation are available in 2 chamber sizes 242 and 326 litres. Due to the maintenance of low temperatures, for the ZLN-UT devices as an option we offer a set for connecting a CO₂ cylinder, which will be an emergency cooling of the batch in case of failure due to e. g. power outage. The CO₂ back-up system is a solution that protects the load from thawing too quickly.

Models

- Ultra-low Freezer ZLN-UT 200 VIP
 - temperature range $-86\text{...}-50^{\circ}\text{C}$
 - chamber capacity 259 liters
 - working capacity 192 liters
 - quality control protocol (in -80°C)

- Ultra-low Freezer ZLN-UT 300 VIP
 - temperature range $-86\text{...}-50^{\circ}\text{C}$
 - chamber capacity 259 liters
 - working capacity 192 liters
 - quality control protocol (in -80°C)

- Ultra-low Freezer ZLN-UT 500 VIP
 - temperature range $-86\text{...}-50^{\circ}\text{C}$
 - chamber capacity 259 liters
 - working capacity 192 liters
 - quality control protocol (in -80°C)



INTERSCIENCE

40 years expertise in microbiology

INTERSCIENCE has been developing and manufacturing innovative scientific equipment for microbiology for 40 years. Its products guarantee safe and fast analyses for the food, pharmaceutical, cosmetics, environmental and medical research industries.

Colony Counters

Scan 300

Scan 300 is an automatic colony counter that includes the essential features for Petri dish counting. It is specifically adapted to the usual media in food microbiology: PCA, MRS...

Minimum size of detected colony: 0.1 mm

Camera: 1 megapixel - zoom x 28

Counting on round Petri dishes of \varnothing 55 - 90 mm

Counting on pour, surface, Spiral, circle mode plated dishes

Language: English, French, Japanese, Chinese, Russian, Spanish, German



Scan 500

Scan 500 is an automatic colony counter that ensures fast and efficient counting of colonies, including on chromogenic agar. It guarantees excellent reproducibility. The images and results are saved and usable anytime. Scan 500 is also an inhibition zone reader.

Minimum size of detected colony: 0.1 mm

Camera: 1 megapixel - zoom x 28

Counting on \varnothing 55 - 90 mm round Petri dishes

Counting on pour, surface, Spiral, circle mode plated Petri dishes

Counting on chromogenic agar

Inhibition zone reader



Scan 1200

Scan 1200 is an HD automatic colony counter. It adapts itself to all media and counts in 1 click all colonies even the smallest ones. It ensures accuracy and excellent reproducibility. Images and results are saved automatically. Scan 1200 is also an inhibition zone reader.

Minimum size of detected colony: 0.05 mm

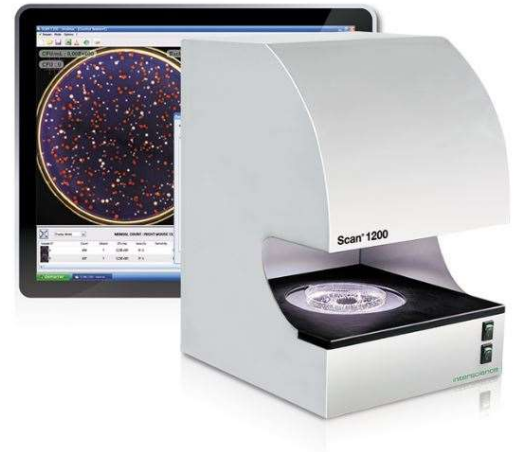
Camera: 1.2 megapixels - zoom x 28

Counting on \varnothing 55 - 90 mm round Petri dishes

Counting on pour, surface, Spiral, circle mode plated Petri dishes

Counting on chromogenic agar, PetriFilm™, MC-media Pads™, Compact Dry™, Easy Plate™, filtration membranes

Inhibition zone reader



Scan 4000

Scan 4000 is an automatic HD colour colony counter. It is adapted to all sizes of Petri dishes and any culture media. Its indirect lighting system gives great user comfort, high accuracy and excellent reproducibility. Scan 4000 is also an inhibition zone reader.

Minimum size of detected colony: 0.05 mm

Camera: 5 megapixels - zoom x 69

Counting on pour, surface, Spiral, circle mode plated dishes

Counting on \varnothing 55 to 150 mm round Petri dishes and 120 mm square Petri dishes

Counting on chromogenic agar, PetriFilm™, MC-media Pads™, Compact Dry™, Easy Plate™, filtration membranes

Inhibition zone reader



FRITSCH

One of the leading manufacturers of application-oriented laboratory instruments worldwide for Sample Preparation and Particle Sizing. Our customers are organizations which are involved in research and quality control for solids. In the future, the focus of FRITSCH will be the progression of the FRITSCH premium line product line. These high-tech mills are even easier to operate, even stronger, even faster, even safer – for premium-results. In particle sizing, we will offer nano particle measuring technology at a significantly reduced price.

Vibratory Sieve Shakers

The Vibratory Sieve Shakers ANALYSETTE 3 PRO and SPARTAN are ideal for dry and wet sieving, measuring the quantitative particle size distribution of solids and suspensions, separating and fractioning of sample quantities up to 2 kg in a measuring range of 20 µm - 63 mm with 100 mm, 200 mm or 8" test sieves.

The top model ANALYSETTE 3 PRO offers automatic amplitude control, can be integrated as an inspection instrument into any quality management systems according to DIN EN ISO 9001.

EVERYTHING YOU NEED FOR SIEVING – Convenient, Precise, Reliable

Dry, wet, and micro-precision sieving

Simple, ergonomic operation

Fast, reproducible results

Sample quantities between 0.05 g and 15 kg

Sieve diameter from 100 mm to 450 mm, mesh widths from 5 µm – 125 mm

Can be used as testing equipment in accordance with DIN EN ISO 9001

Automatic sieve evaluation with the extensive FRITSCH software AUTOSIEVE



ANALYSETTE 3 SPARTAN

Simple sieving for
all tasks



ANALYSETTE 3 PRO

Precise sieving
with amplitude control



ANALYSETTE 18

Effective sieving
of large quantities

ANALYSETTE 3 PRO

The high performance Vibratory Sieve Shaker ANALYSETTE 3 PRO offers everything you need for fast determination of quantitative particle size distribution in the laboratory. As a shaking sieve system with an electromagnetic drive oscillates the sieve stack into regulated vertical oscillations, and is the ideal solution for sieving sample quantities up to 2 kg and a measurement range from 5 μm to 63 mm. The ANALYSETTE 3 PRO is perfectly suited for fast quality control of incoming and outgoing products, offers user-friendly operation and is low-noise, robust and long-lasting.

Sieve stack tensioning systems

The sieve tensioning system Torque Master can be attached and used with any sieve shaker.

Intelligent wet sieving

Improved sieving effect for faster results – and the most efficient wet sieving that has ever existed.

Especially efficient

Up to 10 test sieves can be used simultaneously per working cycle – allowing up to 5 sieving operations

Especially clever

All functions can be controlled via a RS232 interface.

Especially safe

The optimum power consumption due to the variable sieving frequency of the ANALYSETTE 3 PRO prevents a warming up of the sieving system.

Especially simple

The following functions can be conveniently controlled via touchpad:

- ✓ Programme selection
- ✓ Intermittent mode
- ✓ Micro- and micro-intermittent mode
- ✓ Energy-saving mode



ANALYSETTE 3 SPARTAN

The little sister of the ANALYSETTE 3 PRO for all typical sieving tasks in the laboratory with optical adjustment of the amplitude on the running instrument. Complete with the practical FRITSCH sieve stack tensioning system EASYTWIST and the possibility of automatic evaluation of the sieve analysis using the extensive FRITSCH evaluation software AUTOSIEVE. The ANALYSETTE 3 SPARTAN is also suitable for quantitative particle size analysis of solids and suspensions of all kinds through dry or wet sieving with woven test sieves. It is convertible into a micro mill for fine comminution of dry laboratory samples or solids in suspensions and for homogenization of emulsions or pastes.

FEATURES

Automatic sieve analysis with sieve evaluation software AUTOSIEVE

Quick conversion to Vibratory Micro Mill PULVERISETTE 0

Exact entry of the sieving time via a precise digital timer

Manual adjustment of the amplitude during sieving

Display of the amplitude during sieving

Ergonomically installed robust soft touchpad

EASYTWIST sieve stack tensioner with steel-reinforced plastic bands is included

Electric, easy-to-use sieve stack tensioning system Torque Master

Optimum power consumption prevents warming up of the sieving system

Up to 10 test sieves can be used simultaneously per working cycle – allowing up to 5 sieving operations to be performed at the same time

AT A GLANCE

Dry and wet sieving

Automatic sieve evaluation with software AUTOSIEVE

Fast, reproducible results

Simple ergonomic operation



KRUSS Optronic

We are a leading manufacturer of high-precision laboratory and analysis instruments. For more than 200 years we have been developing and manufacturing innovative product solutions for the quality control of raw materials, semi-finished products, and end products in Germany. As part of the quality assurance, we are committed to, our measurement devices provide important key figures with which product quality and product safety can be monitored and ensured.

Refractometers, polarimeters, density meters, flame photometers, melting point meters, gas analyzers or microscopes – our instruments meet the highest standards of accuracy, speed, and reliability. We also have a wide range of measurement devices available for professional gemology. Our demands on quality and precision are high and the requirements of our customers are always the top priority. Customers who decide to buy one of our devices do not only receive a quality measurement device, but they also gain access to professional services and comprehensive support. Together with our certified service partners we offer customer service directly on site in over 130 countries around the globe.

Benefit from our expert knowledge of measurement procedures and methods as well as measurement based on national and international standards. Take advantage of our expertise on sample temperature control, calibration and adjustment, validation, and qualification. You will find detailed information on these topics on our campus site. Or talk to us personally by phone, you are welcome to exchange ideas with us. Or visit us directly at one of our application seminars or workshops in our training center in Hamburg. Be convinced by our innovative products and our passion for quality.

WHY KRÜSS

- New touch screen technology
- Higher data security
- New touch screen technology
- Easy filling and cleaning
- Compliance with global standards



Refractometers

A.KRÜSS refractometers measure the refractive index of liquids, pastes, and solids with high precision. In close cooperation with well-known partners from industry and research, we have developed refractometers that can be easily integrated into existing processes in the laboratory.

REFRACTOMETERS

Our DR6000 series of digital refractometers deliver highly accurate and reproducible measurement results, offer semi-automatic and fully automatic working, and are easily integrated into existing laboratory workflows. There are three different model groups available for the different requirements of temperature control and automation options.

- With Peltier Temperature Control – DR6000-T
- Without Internal Temperature Control – DR6000
- Automation – DR6000-TF

POLARIMETER

A.KRÜSS polarimeters are ideal for analyzing optically active substances by determining their angle of rotation. They support all applications in industry, research, development, and education.

Professional Polarimeters

Our high-speed polarimeters of the Professional series are the fastest in the world – thanks to our patented measurement procedure, which reduces the measurement time to approx. 1 s regardless of the sample's angle of rotation. They achieve a high measurement accuracy of up to $\pm 0.002^\circ$, offer the option of a water bath or Peltier temperature control as well as an automatic operation and feature all the functions that are important in FDA-regulated sectors. Their self-explanatory, well-arranged user interface ensures a convenient user experience.

- With Peltier Temperature Control – P8000-P / P8100-P
- Without Temperature Control – P8000/P8100
- With circulation thermostat temperature control – P8000-T / P8100-T



DENSITY METERS

A.KRÜSS density meters use the U-tube oscillator method and enable simple, fast, and precise measurements of all flowable media. Due to the small footprint, an intelligent user interface as well as the conformity with many standards, our density meters are optimally tailored to a modern laboratory world.

Digital density measurement puts this relationship to use by means of the U-tube oscillation principle. The extremely fine capillaries are made to oscillate by a piezoelectric or magnetic transducer with a characteristic frequency.

- Semi-Automatic Sample Supply
- Fully Automatic Sample Supply
- Manual Automatic Sample Supply



MICROSCOPES

A.KRÜSS offers high-quality microscopes, which are known for their excellent image quality. Our microscopes are designed for medical and biological applications in laboratories, industry and education.

Monocular Microscope

MML1200 - Transmitted light microscope for laboratory, teaching and production.

Monocular microscopes are compact, inexpensive, and ideal for many applications in laboratory, teaching and production. The solid weight of the microscope series provides stability even in harsh environments. The durable precision mechanics ensures optimal laboratory work for many years. We give an extended warranty on case, optics and mechanics.

- 45° inclined viewing for ergonomic work
- 360° rotating optical head
- Sturdy metal tripod ensures high stability
- Coarse and fine adjustment facilitates precise working
- Integrated illumination
- A wide range of accessories is available



Binocular Microscope

MBL2000 series - Transmitted light microscopes.

Robust and universal. This model is ideal for general microscopy in laboratories, schools and universities. The MBL2000 offers an extensive range of add-on options: For example, with phase-contrast setting, a dark-field condenser, micrometre setup, planachromatic objectives and additional eyepieces. A binocular optical head offers inclined viewing and interocular adjustment. A wide range of accessories is available for all models.

- Dioptre compensation with compensation scale
- Sturdy metal stand
- Coarse and fine focussing, double coaxial (0–200 μm , division 2 μm), coarse and fine focussing range: 30 mm
- Right-side coarse focussing knob with fast focus adjustment, left-sided knob with quick-focus setting
- Graduated XY cross table with coaxial operation
- Low-voltage illumination with lighting control and removable pre-condenser
- Twin-lens Abbe condenser: NA 1.25
- Iris diaphragme
- Pivoting filter holder
- Height adjustment
- Glass filters: blue, yellow, green
- Power supply: 230 V (115 V optional)



FLAME PHOTOMETERS

The flame photometers from A.Krüss are used to determine the concentration of alkali and alkaline earth elements in aqueous solutions and are a simple and particularly cost-effective alternative to analysis techniques such as ICP or AAS.

Flame photometer for the laboratory

Economic entry-level model for the laboratory – FP8400

The flame photometer FP8400 is the standard version for a variety of laboratory applications and offers a very simple operation in combination with very high precision and application flexibility in determining the concentration of alkali and alkaline earth elements in aqueous solutions. With the models of the FP8000 series, A.KRÜSS Optronic presents to this day unique measuring devices for the simultaneous measurement of the elements Na, K, Ca and Li. Five measuring channels are available for this, which can be individually configured. Thanks to proven measuring methods and modern device electronics, our flame photometers achieve high-precision and reproducible measurement results and are a simple and particularly cost-effective alternative to analysis techniques such as ICP or AAS.

- Reliable, simultaneous measurement of up to five alkaline and alkaline earth elements
- For operation with low sample volume
- Very high precision
- User administration with two authorization levels
- Full traceability of the measurement results
- Extensive interfaces and convenient data transfer
- Maximum operational safety through intelligent security mechanisms
- Compliance with international standards such as GMP / GLP and 21 CFR Part 11



Automatic unit with dilution

Automated process for operation with high sample throughput – FP8700

The flame photometer FP8700 is the laboratory version supplemented by a rotation sampler, diluter, and mixer. Ideal for applications with high sample volumes and high concentrations requiring dilution. Various safety mechanisms ensure particularly high operational safety

- Reliable, simultaneous measurement of up to five alkaline and alkaline earth elements
- Automatic dilution
- Automatic sample feed
- Suitable for high sample throughput and small sample volumes
- Little care needed by users
- Very high precision
- User administration with two authorization levels
- Full traceability of the measurement results
- Extensive interfaces and convenient data transfer
- Maximum operational safety through intelligent security mechanisms
- Compliance with international standards such as GMP / GLP and 21 CFR Part 11



SARTORIUS

We are living in the bio-century. Global medical knowledge is expanding at a rapid pace. But despite huge breakthroughs, many diseases, such as cancer, rheumatism or Alzheimer's, are still not curable. Sartorius is part of the solution. We help to ensure that new scientific discoveries can be translated more quickly into effective patient care. With technologies, platforms and partnerships for a common goal: better health for more people.

Weighing Solution (Special & Segment Solution)

Moisture Analyzers

Moisture determination for plastics, food, chemicals, pharmaceuticals and more.

Foods, chemical/pharmaceutical products, building materials or animal feed – the moisture content has a decisive impact on price, processability and quality, ranging from raw materials to final products. Determining this moisture content is one of the most common analysis in product development, the manufacturing process and quality control. As a leading provider of moisture analysis equipment, Sartorius is thoroughly familiar with the needs of its customers and thus offers a wide range of equipment fitting perfectly to various applications.

Models

- Infrared Moisture Analyser with Halogen Heater
- Infrared Moisture Analyser with CQR Heater
- Infrared Moisture Analyser with Ceramic Heater
- Infrared Moisture Analyzer MA160
- Infrared Moisture Analyzer MA37
- Infrared Moisture Analyzer MA35 115V



LABORATORY BALANCES

Sartorius lab balances are equipped to meet the highest standards of speed, reliability, compliance, and safety. Sartorius laboratory balances offer high levels of accuracy and precision in analytical testing and quantitative analysis. Suitable for use in laboratories, manufacture according to pharmacopeias and quality control, as well as academic research and any other professional use.

Ultra-Micro Lab Balances

Ultra-micro lab balances are with the readability of 0.0001 mg | 0.1 µg and a maximum weighing capacity of 2.1 g.

Micro Lab Balances

Micro lab balances are with the readability of 0.001 mg | 1 µg and a maximum weighing capacity between 3.1 g and 111 g.

Semi-Micro Lab Balances

Semi-micro lab balances are with a readability of 0.01 mg | 10 µg and a maximum weighing capacity of up to 220 g.

Analytical Lab Balances

Analytical lab balances are with a readability of 0.1 mg and a maximum weighing capacity between 60 g and 520 g.

Precision Lab Balances and Scales

Precision balances and scale are readability between 1 mg and 1 g and a maximum weighing capacity of up to 14.2 kg.

High-Capacity Lab Balances and Scales

High-capacity balances and scale are with the readability of 100 mg and 1 g and a maximum weighing capacity of up to 70.2 kg.



CUBIS® II CONFIGURATOR: Your Custom Balance in 4 Easy Steps

The Cubis® II platform is a completely configurable, high-performance portfolio of both lab weighing hardware and software. Cubis® II is the only laboratory balance with fully customizable hardware, software, and connectivity. It offers modern user interfaces, pharmaceutical and GxP compliance, including data handling, data integrity and connectivity, ergonomic sample handling, easy process integration, and unlimited communication at the highest level of accuracy and precision.

All weighing modules of the Cubis® II balance are designed for intuitive operation, further aided by intelligent diagnostic systems. These design elements guarantee a higher degree of repeatability for different workflows while lowering the probability of human error during measurement.

FEATURES:

- Software – QApps can be configured to fit into your workflow.
- Hardware – Choose from a range of 45 different weighing modules.
- Confident Compliance – Achieve 21 CFR Part 11 and EU Annex 11 compliance.
- Connectivity – Data quality maintained by elimination of manual data transcription errors.



CUBIS® HIGH-CAPACITY MICRO BALANCE

No more challenges with weighing expensive or limited samples in very small quantities without product loss and risk of contamination during material transfer. Cubis® high-capacity microbalances were designed to weigh samples directly into larger flasks and long-neck bottles while guaranteeing high-performance, reliable, and precise weighing results that comply with USP and FDA requirements. Sample- and standard preparation processes can be easily managed. With up to 60 million divisions Cubis® high-capacity microbalances offer the highest resolution amongst laboratory balances.



Secura®

Reduce your risk with integrated and intelligent protection systems. Secura gives you the security and peace of mind of knowing that you have done everything right. Besides providing highly accurate weighing results and operating convenience, Secura also features built-in protection systems for complete reliability and regulatory compliance – the safe and secure way. Real-time guidance prompts for leveling, automatic internal adjustment, and 100% traceable, clear documentation with sample and batch identifiers make your lab work more efficient.



QUINTIX®

Make your routine lab work easy with our revolutionary user interface. The Sartorius Quintix® sets new benchmarks in every aspect of standard lab balances. A number of features make your workflow much more efficient, such as fully automatic internal adjustment, direct data transfer, ergonomic style, and, above all, the entirely new touchscreen user interface with built-in application programs.



ENTRIS® II

No matter what you're weighing, the new Entris® II is always the right choice. Offering unrivaled value at a budget price, this is the only balance in its class featuring isoCAL, LED touch technology and 12 built-in applications. Backed by almost 150 years of German engineering expertise, and available in 40 different models, you'll easily find an Entris® II balance that exactly meets your specific weighing needs.



PARCTUM®

The advanced, ergonomic design and intuitive touch-screen user interface of Practum® will give you the perfect support you need in your daily weighing tasks. Rely on consistent readings and excellent repeatability ensured by Sartorius quality and technology developed and designed in Germany.



Weighing Accessories

Sartorius offers a wide range of accessories for the proper handling, storage and cleaning of weights and a wide selection of helpful accessories, including:

- Thermal printers
- Density determination kits
- Pipette calibration
- Draft shields
- Weighing pans



Pipette Calibration Solutions

Taking care of your pipettes is important to ensure the quality of work performed in the laboratory. In addition to cleaning and performing routine maintenance, the accuracy and precision should be checked at regular intervals. Cubis MPS is a portfolio of specialized micro and semimicro balances to perform fast, ergonomic, and precise pipette calibrations. These highly specialized instruments are for customers that use their balance for pipette calibrations only and who need fastest stabilization times and most ergonomic handling. Smart solutions for pipette calibration can help laboratories achieve:

- Compliance
- Fewer Errors
- Increased Efficiency
- Lower Calibration Costs



INDUSTRIAL MICROBIOLOGY SOLUTIONS

Microbial Enumeration

Trust the experts and benefit from a wide range of dedicated products for microbial limit testing, and more. In a high-throughput production environment, you need to complete your microbiological analyses fast, efficiently, and reliably. Any contaminants in your foods or beverages will have a direct impact on consumers' health and your product liability. Our products designed for speed and convenience will enhance your productivity without compromising on the accuracy of your results.

Sterisart® sterility testing redefines standards.

The Sterisart® NF System is a completely closed system for the sterility testing of pharmaceutical products. It is based on the membrane filter method, however it eliminates the procedure of manipulating the filters. By this means the main risk of a secondary contamination and false positive results is eliminated.

Sterisart® universal pump for sample and media transfer into the Sterisart® NF systems for sterility tests. The peristaltic pump can be used in clean rooms, integrated into clean benches, or installed countersunk in the working surface of isolators. Sterisart® universal pump is available as an upgraded version with display and user software. The sterility test system features a compact design with a space-saving footprint - a great benefit for most clean room benchtops and isolators.

Air Monitoring

In the food and beverage industry, active monitoring of air quality is becoming increasingly important. In many instances, it is already mandatory and is regulated by Hazard Analysis and Critical Control Points (HACCP). Having your production environment under control will give you the quality that your consumers expect.



ULTRAPURE WATER SYSTEMS

Ultrapure water is the basis for successful analyses. Yet analytical methods are becoming more and more sensitive and thus more susceptible to interference. Consistently high water quality is decisive in ensuring the reproducibility of your results and in preventing time-consuming repeat analyses. The Arium® Ultrapure Water Systems offer an exceptionally wide range of modular-designed systems for producing Type I ultrapure water for chromatography, mass spectrometry and many more applications.

Arium® Mini Ultrapure Water Systems

Compact laboratory water systems for 10 liters per day.

Reliable - Delivers consistently high water quality for reliable and reproducible results

Intuitive - Touch-activated color display with direct access to all important dispensing options

Innovative - With bagtank technology, depending on the type of system; saves time-intensive tank cleaning

Compact - Space-saving, with a width of only 28 cm



Arium® Pro Ultrapure Water Systems

Application-orientated and flexible to meet your needs

Modular – System selection specifically for your application

Consistent quality – Meet or exceed ASTM Type 1 water quality to increase sensitivity of analytical results

Easy to use – Display with touch function and intuitive menu

Fast – Favorites function with direct access for recurring volumes



MINEBEA INTEC

Bench & Floor Scale Signum®

Signum is the compact solution for numerous industries. In daily weighing, the bench scale is characterized by short measuring times, flexibility and safety. Depending on the application, the weighing indicator can be set up independently of the platform location or mounted on a pedestal. Depending on the precision level, models in Supreme, Advanced or Regular versions are available.

ADVANTAGES:

- ✓ Three intuitively operated indicators with different application levels
- ✓ Protection classes IP43 or IP65
- ✓ Various material versions, e.g. stainless steel
- ✓ Load ranges from 0.6 kg to 65 kg
- ✓ Readability from 0.001 g to 10 g
- ✓ Platforms in various designs and dimensions
- ✓ Calibration version and Ex solutions
- ✓ Large variety of interfaces
- ✓ Wide range of accessories, options and extensions
- ✓ Ready for the future of industrial automation" with our miOPC software



Bench & Floor Scale Midrics®

The bench and floor scale Midrics® is a proven tough complete scale for reliable quality control, for example in the grocery, pharmaceutical, chemical, electronics and metal industries. Boasting a long product lifetime, they are robust and easy to clean. The indicator can be set up according to the use regardless of location of the platform and can even be mounted on a stand.

ADVANTAGES

- ✓ Two easy-to-use indicators
- ✓ IP65 or IP67/IP68 protection classes
- ✓ A variety of finishes
- ✓ Load ranges of between 3 kg and 3000Kg
- ✓ Readability from 0.2 g to 200 g
- ✓ Platforms in various designs and sizes
- ✓ Verification mode
- ✓ Various resolutions up to 15.000d non verified or 2x3000e verified
- ✓ A wide range of interfaces
- ✓ An extensive range of accessories, options and add-ons
- ✓ Ready for the future of industrial automation with our miOPC software



SOFTWARE

PRORECIPE XT®

Thanks to ProRecipe XT®, operating errors and time-consuming data input are consigned to the history books. Its intuitive user interface ensures processes are safe, guiding the operator through each step of the formulation process. ProRecipe XT® has been optimised for touchscreens and can be controlled either from a Windows® PC or from a Maxxis 5 process controller, ensuring the best possible integration into your production processes. High level of flexibility: ProRecipe XT® can also be controlled using Microsoft® tablets, guaranteeing an unprecedented level of safety for recipes and maximum efficiency.

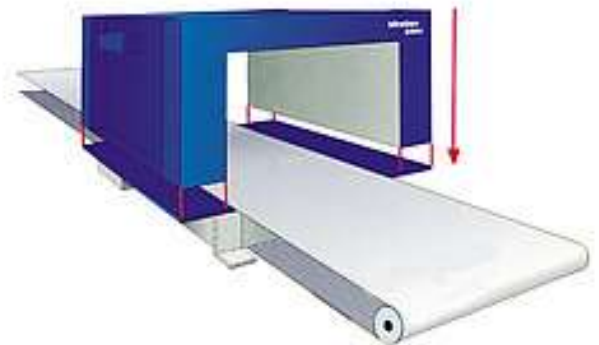
INSPECTION SOLUTIONS

Metal Detector MITUS®

The new Mitus metal detection system is an inspection solution with the highest precision in detecting foreign objects in all applications where this is required. Using flexible MiWave Modulation Technology, the system ignores fluctuating product effects due to product variations in shape, size and composition, minimising false rejections. Foreign objects are reliably detected. In addition, the metal detector scores with its variety of models, which enables easy integration into existing systems.

Metal Detector SECUS®

The Secus® metal detector provides highly efficient and effective protection for your machines. It prevents the penetration of metallic foreign bodies into your production process and thus reduces downtimes due to repairs to a minimum. Furthermore, your employees are also reliably protected from injuries caused by splintering metal parts. Designed especially for heavy industry, Secus is particularly convincing due to its extremely robust design and detection sensitivity, which has been optimised especially for the raw materials industry.



KANOMAX — The Ultimate Measurements

Particle Counters

Handheld/ Portable/ Remote Particle Counters:

Kanomax's Particle Counters are on course to set the standard of instrumentation in cleanroom/operating room monitoring and verification, filter testing, IAQ investigation, data center cleaning and plenty more highly specialized and highly sensitive applications. These beautifully engineered devices boast some of the most highly advanced technology in the industry; the powerful devices are a combination of accuracy and practicality. Since their inception, Kanomax particle counters have been the trusted choice in measuring instruments of by an ever-growing group of leaders in pharmaceutical, semiconductor, food and beverage industries.

ADVANTAGES:

- ✓ Easy to read and interpret data due to large screen with full color and graphic display.
- ✓ Storage capacity for up to a week's worth of data
- ✓ Compliant with current ISO-14644
- ✓ Ergonomic and comfortable for long periods of use
- ✓ Grants the ability to control and monitor the instrument remotely through a PC.
- ✓ Easy data transfer to USB drive
- ✓ Compliant with current ISO 21501-4 calibration standard



Microbial Air Sampler

Microbial air sampler can monitor microbial in the air and collect them to culture medium. Under ISO14698-1, evaluation and control of microbial contamination that may affect the products in clean room are required. In sterile drug manufacturing area, it is necessary to ensure that the environment is being controlled with the certain standards. Used for contamination control in clean room at pharmaceutical factory, laboratory, Infection control at hospital and for quality control at food processing, cosmetic factory, etc.

ADVANTAGES:

- ✓ Simple operation with 4.3inch color touch screen
- ✓ Administrative settings protect data from unauthorized access.
- ✓ English, Chinese, Japanese language available
- ✓ SUS316 sampling head prevents contamination by microbial.
- ✓ USB and RS-485 communication available
- ✓ Remote controller enables users to operate from outside of the room.
- ✓ Built-in exhaust filter (*MODEL3080)
- ✓ External printer available



Dust Monitors

Measures aerosol concentrations corresponding PM0.1 to 10µm particle size aerosol contaminants such as fumes, dust, smoke, and mists. The intake isolates the aerosol sample so that the optics chamber is kept sterile for improved reliability and low maintenance. Battery-operated, data-logging, light-scattering laser photometer that gives you real time aerosol mass readings. Suitable for clean office settings well as harsh industrial workplaces, construction and environmental sites, and outdoor applications.

CHARACTERISTICS:

- ✓ Measures PM 10 particle matters, such as dust, fumes, and smoke.
- ✓ Real time and long term measurements of dust concentration
- ✓ Compact and lightweight unit.
- ✓ PC interface with USB and software for downloading data to your PC.
- ✓ Analog output controls other devices.
- ✓ Data logging up to 100,000 measurements and displays MIN / MAX / AVG and Timing graph for review.
- ✓ Complete with rubber protector, shoulder strap, data processing software, USB cable, AC adaptor, 2 pcs LCD protective sheet, rubber cap, 2 pcs filter.



Airflow Instruments & Sensors

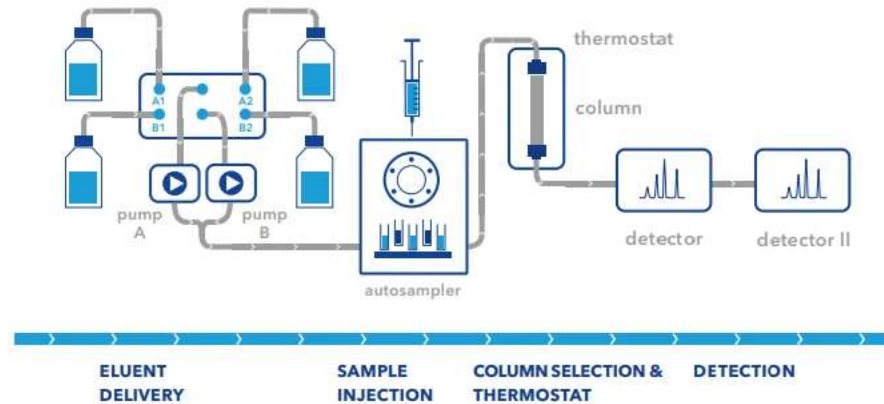
- ✓ Handheld Air Velocity Meter
- ✓ Capture Hood
- ✓ High Temperature Air Velocity Meter
- ✓ Multi-channel Air Velocity Meter
- ✓ Airflow Transducer
- ✓ Duct Air Leakage Tester



KNAUER

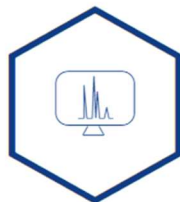
Analytical HPLC/ULDC/UHPLC

The analytical HPLC, ULDC and UHPLC systems of the KNAUER AZURA® liquid chromatography instruments are designed to support and facilitate your work. Whether doing routine analysis or demanding separation tasks, AZURA systems are the right tool to overcome your analytical challenges. Choose between different gradient forming technologies and maximum flow rates to find the best configuration for your task.



AZURA Analytical (U)HPLC:

- HPLC: Isocratic, binary high-pressure gradient (HPG) or quaternary low-pressure gradient (LPG) pump. Exchangeable pump heads allow flow rates up to 10 ml/min at 862 bar or 1000 bar up to 2 ml/min
- UHPLC: Binary high-pressure gradient pump with adaptive pulsation compensation for ultra-fast and high-resolution applications with flow rates of 0.001-5 ml/min, pressure up to 1240 bar
- Autosampler with 0.1 µl sample aspiration at max. 1240 bar with zero sample loss
- Choice of highly sensitive UVD, MWD, DAD, or RID detectors with intelligent temperature control
- Wide range of flow cells available, including remote cells
- Finger-tight high pressure stainless steel capillary connections “K-Connect”
- Frontal access of detector lamp and pump head for easy maintenance



Supporting OpenLAB,
ClarityChrom®,
Chromeleon™



Most flexible system
configurations



Matching detectors
according to your
analytes

OSMOMETERS

KNAUER is one of the pioneers in the field of osmometry and known for its reliable and user-friendly instruments for many decades. Our newest freezing point osmometer K-7400S allows the easy and fast determination of the osmolality of various aqueous solutions. Also, the freezing point depression of the samples can be read. The proven technology of freezing point determination in combination with the robust and intelligent design of the device allows fast and reproducible measurements. The instrument is equipped with a peltier cooler and an integrated microprocessor controlling the automated measurement.

Theory of Osmolality

Osmolality is a general measure of the particle concentration in a solute. It's not depending on the nature of molecules but just their number. Therefore, a two molar solution of a non-dissociating molecule (A) has the same osmolality as a one molar solution of a fully dissociating salt composed of two ions (B). The osmolality of a solution is the same, even when molecules vary in shape (C) as well as in size (D). Therefore, all solutions containing the same number of osmotically active particles — regardless of their chemical properties — exhibit the same osmolality.



FOOD

For analysis and quality control of milk or beverages like isotonic drinks and beer



PHARMACEUTICS

For quality control of infusion solutions, inhalation, rinsing solutions and eye drops.



ACADEMIA

For research on plant sap and insect haemolymph and testing of nutrient solution and cell culture media.



INDUSTRY

For process monitoring and quality checks of reagents and chemicals.