

Photo-optical Particle Size and Shape Analyser HAVER CPA

HAVER CPA 3-2 REAL TIME is the third generation, HAVER eco REAL TIME the fourth generation of our Optical Particle Size and Shape Analyser HAVER CPA. These models scan free falling particles with a High Speed CCD Camera, analysing the particle size and shape distribution. Up to 20,000 particles per second are analysed. There are no angular limits in the calculation (pixel to pixel resolution). Each grain size value of each particle is recorded and stored. All recorded particles have been measured. The results given by the optical particle size analyser can be easily adapted to those given by test sieving methods. The particles are scanned with a resolution of 10 µm/pixel. The latest glass fibre technology is used. The high quality scanning of more than 24 mega pixel per matrix equivalent image and single image sizes of more than 100 Mega pixel allow a wide measuring range and guarantee in combination with our documentation methods that the complete funnel width is scanned. Changing particle size distribution within the funnel has no influence on the measuring result. Different particle accelerations are calculated depending on the particle size. HAVER-CPA 4 REAL TIME ONLINE Particle Size Analysers are the protected dust-tight versions of the optical size and shape analyser, available in three models: for free falling particles or as belt unit to analyse particles in non-turbulent flow. The last stated model is especially suitable for an exact measuring of particle lengths and widths. The ONLINE-version can be integrated into the manufacturing process. Via all kind of interfaces the system communicates with internal bus-systems or via the analogue ports. The extremely high resolution guarantees a complete analysis of particle mixtures. Whenever the systems cannot be



HAVER-CPA: Photo-optical particle analysis for a measuring range from 0,025 mm up to 400 mm

installed online, Haver & Boecker supplies various automatic sample feeders. Nevertheless, these CPA systems can also be operated manually in the laboratory.

HAVER CPA Dynamic Image Analysers are applied in various industries, such as for the analysis of catalysts, wood chips, sugar, coke, etc. Furthermore, there are also devices available for the inspection and analysis of non-turbulent products such as screws and similar products. Fax: +49-2522 30404 E-mail: pa@haverboecker.com

HAVER Test Sieve Shaker and Test Sieves

HAVER EML 450 digital plus is the first test sieve shaker in the world with a three dimensional sieving action and self-adjusting amplitude to be fitted with test sieve diameters up to 450 mm.

The EML 450 digital plus can be used with all current sieve diameters of 200 to 450 mm. This offers the opportunity to use one machine for varying product quantities and different sieve diameters.

As with all test sieve shakers from the Haver & Boecker series "digital plus", the EML 450 is controlled by micro processor. The self-adjusting amplitude compensates via permanent acceleration control of the total sieve column the vibrations of the sieve shaker and its stand. This guarantees equal amplitudes even if different material quantities are analysed at different stands – a guarantee for analyses complying with ISO 9000 standard.

The EML 450 digital plus with electromagnetic drive has no

rotating parts, is extremely durable, maintenance-free, very adaptable and has a low noise level. Due to the use of a special spring system and cast iron parts the construction is heavy and sturdy.



Test sieves and test sieves shakers for optimum particle analysis

This new development enables those users, who often have to analyse materials with apparent weights of more than 10 kg, to noticeably reduce the external influence factors during the sieve analysis and thus to obtain reproducible sieving results.

HAVER Test Sieves for the optimum sieving results

HAVER test sieves are characterised by accuracy and stability. The meticulous fabrication and optimum tension of the sieve bottoms guarantee a good service life with perfect operation. They are fabricated according to the valid standards: ISO 565, DIN ISO 3310, ASTM E 11, BS 410, AFNOR, NEN 2560, ISO 5223 etc.



Haver-test sieves with exact openings and a perfect tension of the wire cloth.

HAVER Test Sieves are supplied in all international current diameters from 76,2 mm (3") to 400 mm with woven wire cloth, perforated metal plates or electroformed sheets. Grid sieves with parallel bars according to DIN EN 933-3 are also delivered.

In addition to the fabrication of test sieves, Haver & Boecker

also offers certification and calibration of test sieves.

Certification and calibration of test sieves for the quality assurance

Haver & Boecker offers the opportunity to examine test sieves by a computerised video-analysis system at our local laboratory or on-site. The calibration method by HAVER BSA guarantees the traceability to the national measuring standard. The institution 'Materialprüfungsanstalt für das Bauwesen' (MPA IBMA TU Braunschweig), confirms that the measuring device HAVER BSA is hitherto the only measuring device which meets the demands according to ISO 3310-1: 2000 and ASTM E 11-01 for calibrating test sieves.

Haver & Boecker offers two reliability levels: Certification and calibration

Both methods perform a measurement in warp and weft direction. They differ in the quantity of the measured aperture widths, resulting in different statistical confidence. During a calibration thrice as many aperture widths are measured than during the certification. In general the test sieve is subject to a specific inspection. The aperture widths are stated for warp and weft direction. The results are recorded for further control measurements.

Haver & Boecker can inspect and check the customer's test sieves at his own premises using its mobile HAVER Measuring Facility – 'Local Service' – direct on-site.

Certification according to ISO 3310, ASTM E 11, AFNOR and BS 410 using our mobile Haver Measuring Device. Inspection certificate 3.1 according to EN 10204 with statistical results of aperture widths.

Fax: +49-2522 30404

E-mail: pa@haverboecker.com

For your regular copy of
Laboratory Equipment
Please write, fax or
e-mail us

**Touchclave
Sterilisers-
Leading Edge
Technology**

Since the acquisition of 'Autoclave Control and Engineering' (ACE) by LTE Scientific in 2001, its Touchclave Systems sterilisers and ancillary products have come to be known to be at the leading edge of today's technology and are widely regarded as being some of the most dependable systems on the market today.

At LTE Scientific we firmly believe that our customers deserve the best! Our products main features are as follows,

- Single-entry or Pass through systems – Ideal for today's wide ranging applications within laboratory, healthcare and pharmaceutical environments.
- Fully jacketed to improve cycle times
- Rectangular chambers
- Easy to use Touchclave® control screens
- Multi-program system – Customer programs are stored in the memory
- Internal data archiving



and integrated printer are included to record all relevant customer information.

- Choice of vertical or horizontal sliding doors
 - Water conservation option
 - Product capacity from 300 – 10,000 litres
 - Full compliance with BS3970 and BS2646 and EN285
 - Combined vacuum
 - Air ballast system
- Touchclave® control systems incorporate a self-diagnostic system, which will highlight any abnormality in the cycle.

As an option, a modem can be fitted to the control system allowing the LTE technical team to view real time cycle data, enabling them to advise on operational issues without visiting the site, thus minimising down time.

A choice of eight load specific cycles can be stored in the memory, with an optional memory expansion facility boosting the total to 20. Users can develop their own cycle profile simply by touching the 'create own

cycle' icon and following a series of screens to input their own parameters and cycle titles.

Additional options that can be built into your system include,

- Effluent retention (cat. 3 containment)
 - High security (cat 4 containment)
 - Cabinet or Built in
- E-mail: info@lte-scientific.com
Fax +44 (0) 1457 870131

**Sliding Doors -
New LTE
Autoclave Range
Steps Out**

The Touchclave-Lab represents the new range of laboratory autoclaves from LTE Scientific.

Laboratory autoclaves have a unique combination of features to assist the operator and improve efficiency:

- Touch-screen controls
- Multi-program system
- Automatic internal data archiving
- Innovative interlocked, vertical easy-glide sliding door
- Slim line design – ideal for the space conscious lab.
- Water jacketed to provide fast cycle times



- Rectangular section chamber
 - Available in 150, 200 and 300 litre sizes
- Other options available on this

product include, combined vacuum and air ballast systems and effluent-retention (cat 3).

The 'K' models operate using either an integral steam generator situated beneath the chamber or the customer's own direct steam supply. These models are fitted with water jackets as standard, which offer significantly reduced cooling times.

The economical 'F' range can operate in areas where water drainage is not available, using steam generated from within the chamber. To improve cooling times, fan cooling is provided as standard, whilst a water jacket is available as an optional alternative.

Both models incorporate a state-of-the-art touch-screen control system for entering and displaying all commands, cycle and program data and alarms. A self-diagnostic system

highlights any abnormality in the cycle. Additionally, LTE has made available an optional modem, which allows real time information to be viewed by its technical team. All models have an internal data archiving facility, which allows up to 5000 cycles to be stored on a single internal flash card.

A choice of eight load specific cycles can be stored in the memory, with an optional memory expansion facility boosting the total to 20. Users can develop their own cycle profile simply by touching the 'create own cycle' icon and following a series of screens to input their own parameters and cycle titles. Optional features include a combined vacuum, air ballast system and cat.3 effluent retention.

E-mail: info@lte-scientific.com
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**Sterilisation-
A Touchy
Subject**

Astell Scientific, leading Autoclave and Sterilise manufacturers now include Touch Screen Controllers on all their Autoclaves & Sterilisers 30 to 1000+ litres.

All circular section units feature the SecureTouch and the Square Section models feature either the SecureTouch or the Logi controllers.

With no additional cost on the price of the standard model, all autoclaves with the Touch Screen controllers include the following features:

- Touch Screen Controller
- Fully Programmable
- Easy Fingertip Operation
- Pin Protected
- Continuous on-screen graph
- Clear, easy to read blue screen
- Data Archiving
- USB connections

Available throughout Astell's Swiftlock & Compact autoclave ranges, the Unique Secure+ Touch Control System has been developed entirely by Astell engineers to control the Steriliser, ensuring safe reliable



and accurate sterilisation time after time.

The Virtual Printer option provides all the functions of a built-in printer, and may be used with a PC, Palmtop, or Laptop or simple external printer. With Data Archiving all output which would normally appear on the optional internal printer will be saved in internal Flash memory. This data can then be downloaded to the PC

The optional Data Archiving package operates similarly to the Virtual Printer option but the memory uses Flash. The data is encrypted making the retained data tamper resistant. Up to 5000 cycles can be stored.

Astell's Square Section units are offered with a choice of TouchScreen controllers, including the popular Logi systems, either as Mono or Full Colour. Fax:+44 (0) 20 8300 2247 E-mail: info@astell.com

**Astell's Growing
Range of Vacuum
Autoclaves**

Astell Scientific, leading Autoclave and Sterilise manufacturers have added a range of Top Loading Vacuum models to their extensive range.

These units feature as standard: - SecureTouch – Touch Screen Controller

- 5 Programs (optional 10)
- Integral Steam Generator (unless direct steam)
- Pre-Vacuum
- Vacuum Pulsing
- Vacuum Drying
- New Swiftlock rapid access safety closure
- Over temperature water cut out
- Thermocouple entry port
- Low Water Alarm on Internal Water Tank
- Pressure gauge
- Stainless Steel Pressure Vessel.

The range has been introduced to offer a solution to users whose requirements are a little more complex than can be accommodated with a standard unit.

The vacuum models all feature steam generators (unless the steam can be supplied on-site)



eliminating the delay caused by waiting for heaters in the chamber to create the steam, along with a vacuum system providing pulsing during the cycle. Both of these features gives the user greater flexibility and the ability to process more complex loads. As with all Astell units there are a large selection of Options and Accessories available, including External Vessel Heating, various Data Recording Devices, Cooling Options, plus many other options, giving the user the flexibility to specify a unit to meet with their exact requirements.

Fax:+44 (0) 20 8300 2247 E-mail: info@astell.com

**Astell-
Introduces New
Literature**

Astell Scientific, leading Autoclave and Sterilise manufacturers are happy to announce the introduction of their new literature.

The brochure includes information on all the ranges:

- Benchtop models 30, 40 & 60 litres
 - Top Loading models – 60, 90, 110 & 130 litres
 - Top Loading models with Vacuum – 90, 110 & 130 litres
 - Front loading models – 120, 150, 230, 275 & 330 litres
 - Front loading models with Vacuum – 120, 150, 230, 275 & 330 litres
 - Square Section units from 125 – over 1000 litres
 - A large range of options & accessories for all applications
- All units now include Touch



Screen Controllers. The circular section units feature the SecureTouch and the Square Section models feature either the SecureTouch or the Logi controllers.

The new literature is split into easy to read sections, covering each of the ranges. Also included are separate sections detailing the control systems along with comprehensive information on the available options & accessories.

Fax:+44 (0) 20 8300 2247 E-mail: info@astell.com

**Blood Agar for
Microbiological
Diagnosis**

The red cells added to the agar to produce blood-agar in the clinical microbiological laboratory should not be damaged by temperature during

media preparation. The use of "Blood-O-mat", made by international pbi, produces batches of blood agar which will not deteriorate and have a longer shelf life. "Blood-O-Mat" is the natural complement of "Agar-Ster" media preparator and "ADD-MINI SS Petri dish dispenser.

Fax:+39 02 40 090 010 E-mail:info@internationalpbi.it



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Camspec's Textile Sun Protection System Meets European Standard

Textile and clothing manufacturers have a legal obligation to label sports and children's clothing with the fabric's sun protection factor (SPF), and a recent European Standard, EN 13758, defines the procedures to be used throughout the EC for measuring the SPF for labelling purposes.



Camspec is one of the UK's leading specialist suppliers of UV/visible spectrophotometers, and its SPF system, which comprises a double beam spectrophotometer with integrating sphere and dedicated PC software, is to be found in many textile laboratories around the world. As part of an on-going development programme, Camspec has now released the latest version of its SPF software which has been upgraded to work with the new M550 spectrophotometer. The system complies fully with the European Standard, as well as those which apply in the US, Australia and New Zealand.

The new system is based on Camspec's M550 double beam UV/visible spectrophotometer, and features an integrating sphere that can be simply removed and stood above the instrument's sample compartment. This enables textile samples to be quickly and easily installed for measurement. Camspec also supplies calibration filters, traceable to the National Physical Laboratory, to enable the system to be regularly checked as dictated by the Standard.

Camspec Managing Director, Dr Tony Moss, commented:

"A warming world climate brings a greater risk of skin damage through sunburn. As a result of our work with the clothing industry, I know that clothing manufacturers take sun protection factors very seriously, and our latest system meets the needs of the industry."

The Camspec SPF system, including calibration standards, has an ex works list price of GBP11,045 and, as it can be reconfigured as a normal spectrophotometer in a matter of seconds, it is a highly cost effective investment in the very latest laboratory equipment technology. E-mail: sales@camspec.co.uk Fax: 44 (0)1223 836414

DNA/RNA- Measurement of Small Samples Using Camspec Spectrophotometers

Some workers in the field of DNA and RNA need to use the smallest possible sample volume. If this is their only interest, they will purchase a Nanodrop or equivalent which is dedicated to the task. If, however, they also need a general purpose UV/Visible Spectrophotometer, then the Hellma TrayCell fits in the standard single cell holder of the Camspec M501 or M550 UV/Visible Spectrophotometers. It allows sample



volumes from 0.7 to 5µl, 0.2mm or 1mm pathlength. Hellma report that they have sold several hundred of these cells. The software built into the Camspec instruments automatically calculates the concentration and DNA purity. E-mail: sales@camspec.co.uk Fax: 44 (0)1223 836414

Camspec Announce a New Programmable Visible Spectrophotometer

Camspec, the leading UK specialist supplier of UV/visible spectrophotometers, is setting new standards for product features and cost with the launch of its new M108 Programmable Visible Spectrophotometer.

Fitted with stepper motors for wavelengths and filters, the M108 features a stylish nine button keypad and a four line, twenty character LCD display to enable users to store and recall up to two hundred methods or sets of results.

Data output from this new intelligent visible spectrophotometer can include method number and name, wavelength, date and time, %T, Abs, concentration and unit, and the provision of an RS232 serial output port makes for easy PC control or printer interface. PC application software options include concentration curves, timescan and wavelength scanning.



Camspec's Managing Director Tony Moss said:

"The new M108 programmable visible spectrophotometer is a result of our design, production and supply partnership with a Chinese/American company. With a highly competitive sales price, I really believe that we are setting a new standard by which other manufacturers will now be judged."

Working with an extensive network of international distributors, Camspec's products are already used in a significant range of global research, quality control and conformance applications. The M108 instrument has been designed to fit neatly into the Camspec family of products, and its price point would suggest that it will have a strong appeal in the education arena.

E-mail: sales@camspec.co.uk Fax: 44 (0)1223 836414

Fully Automated Analyser- The Techno TwinStation

New concept, high throughput, flexible and user-friendly, for combinations of ID-Cards and microplates. Loading capacity for up to 36 samples, 48 ID-Cards, 3 microplates and 24 reagents with 2 centrifuge/readers combined (24 ID-Cards capacity each). Functions performed automatically: full positive identification, cell suspensions, piercing of ID-Cards, pipetting, incubation, centrifugation, reading and interpretation. Performance: up to 70 ID-Cards (420 tests) per hour.



Complete traceability of tests, results and operator. Automatic dispense verification. Bi-directional connection to LIS/host. User-friendly operation with flat touch-screen. All operations are monitored by DiaMed's Maestro MasterSoftware. Ideal walk-away for Blood Banks, medium and large laboratories. Fax: +41 (0) 26 674 51 55 E-mail: info@diamed.ch

PRODUCT INFORMATION

DigiGenius- Flexible Digital Imaging Systems

The upgraded DigiGenius budget gel documentation system provides a high resolution fully computer controlled camera, allowing molecular biologists to quickly and easily view images in real time on any computer.

The DigiGenius system consists of the latest 10 mega pixel camera



era that can separate even the

closest band images. The camera can also be linked via an interface which comes as standard with the DigiGenius to a PC or Mac. This ensures researchers can fully automate the camera's set up and image capture to rapidly record PC and Mac compatible images to either a Flash Card or computer, thus saving time and effort with gel documentation.

The DigiGenius is designed to be flexible and is built according to researcher's specifications. Users can choose to add fully compatible components to the

basic system such as a UV transilluminator, white or blue light conversion screens. It comes with a safety hood upgradeable to full mini darkroom as well as Syngene's industry leading GeneTools image analysis software and means the DigiGenius is cost-effective for laboratories that want an easy method of upgrading when their applications or budget changes.

Fax: +44 1223 727101

Email: sales@syngene.com

G:BOX- Gel Documentation Systems

Syngene has launched G:BOX Chemi XL, its new automated image analyser, ideal for producing precise images of Western blots labelled with any Qdot® colour.

The system features a high reso-

lution (5.5 mega pixel, digital zoom), 16 bit CCD cooled camera inside a darkroom fitted with motor driven sample stage. By adding Syngene's 9-position filter wheel, lighting unit and Qdot filter options, the system can provide fast, accurate imaging of multiple Qdot antibodies on the same blot without the need for re-probing the sample. These features combined with the camera's ability to separate close, different coloured band



images makes the G:BOX Chemi XL an intelligent choice for scientists that need a reliable method of generating images of Qdot labelled Western blots.

The G:BOX Chemi XL comes with GeneTools, easy to use image analysis software and a new version of GeneSnap image capture software, which saves time with its new focus indicator and digital zooming features.

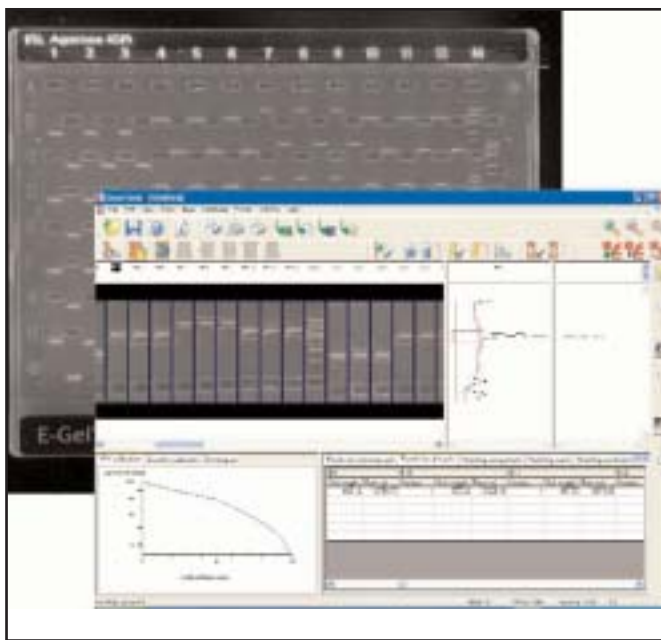
Fax: +44 1223 727101

Email: sales@syngene.com

New GeneTools Software Offers One Step E-Gel 96 Reading

Syngene GeneTools V3 image analysis software has a unique E-Gel® 96 module which allows one step analysis of E-Gel 96 gels in seconds.

Syngene has designed the new E-Gel 96 option to analyse the staggered well pattern in E-Gel 96 gels (Invitrogen) and GeneTools V3 is the world's first commercial 1D image analysis software to have such a module. Molecular biologists using GeneTools V3 can rapidly



obtain GLP compliant results from all 96 lanes of an E-Gel in just one click, thus saving time by automatically reading, for example, gels of multiple PCR products or restriction digests.

The new E-Gel 96 option combined with the software's other functions which include: band and spot matching; Rf/molecular weight calculations; multi-layer gel analysis; and colony counting, makes GeneTools V3 the most flexible 1D image analysis software currently on the market. This innovative software can be purchased as an additional option for all new and existing Syngene systems.

Fax: +44 1223 727101

Email: sales@syngene.com

Fully Automated Coagulation Analyser CD-X

A very flexible and fast analyser for your coagulation laboratory. It has 4 measuring channels which use a new UV-LED technology for clotting



time, chromogenic and immunological assays. It features positive sample identification, level detection of reagents and samples and clot detection..

Emergency access to sample during work process. Autocalibration for PT and Fibrinogen and autodilution for Fibrinogen and factors. Integrated printer for standard curves and results.. Host connectivity through the DiaMed Maestro Coagulation Software. Option for cap piercing of sample tubes. And a protection cover for secure work.

Loading capacity: 24 sample

tubes, 9 reagents (37°C), 2 reagents (RT) and 6 reagents (15°C)

Fax: +41 (0) 26 674 51 55

E-mail: info@diamed.ch

For your regular copy of
Laboratory Equipment
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PRODUCT INFORMATION

Quality Control Sera

Randox manufacture a broad range of human and bovine-based control material. The Randox product range of control products includes clinical chemistry multi sera, tumour markers, cardiac, CSF, urine controls, lipid controls, specific protein controls, therapeutic drug controls, mono controls and a range



of special controls developed at the request of customers.

All control products come in easy to use, colour-coded packaging to help distinguish different analyte levels and minimise costly errors. Bottles, caps and

packaging are all colour-coded to aid stocking and usage of the products in the laboratory. Quality control sera from Randox is the premier choice of the National and State run EQA programmes for most of Europe. Randox assayed and precision sera are available in human and bovine (only available in clinical chemistry controls) form. Method, temperature and instrument specific target values and ranges are available for all assayed sera. Randox precision

sera is supported with guideline values from a consensus mean of results from independent laboratories for the most regular methods.

Randox have over 20 years experience in producing customised quality control sera and urines. This surprisingly affordable product is tailored to your demands and your budget. Randox sera is stable for up to 4 years

E-mail: marketing@randox.com
Fax: +44 (0) 28 9445 2912

evidence investigator

The evidence investigator analyser is the latest innovation in multi-analyte biochip array technology. This versatile biochip imaging system brings biochip array technology within the reach of routine and research labs. Investigator's key feature is the ability to analyse a panel of related tests simultaneously

using a single patient sample by means of the biochip.

The biochip has up to 25 antibodies or antigens microspotted separately in an array of related tests. Rather than dividing a sample for separate tests, all the tests in the panel are carried out at the same time, producing a patient profile of diagnostic results with a single assay.

The assay uses conventional immunoassay techniques with the biochip as the reaction platform. There are sample and



reagent addition, washing, incubation and signal reagent addition steps. Investigator's high-resolution camera quantifies

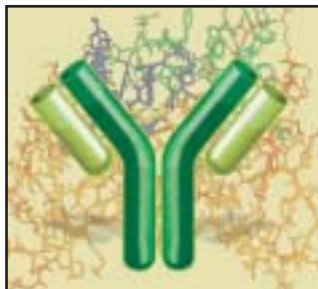
chemiluminescent signals, which are interpreted by custom image-processing software.

The range of biochips currently available includes, Drugs of Abuse, cytokines and growth factors, cardiac markers, fertility hormones, thyroid hormones, tumour monitoring and prostate screening. Many more protein and DNA biochips are in development, which will be available in the near future.

E-mail: marketing@randox.com
Fax: +44 (0) 28 9445 2912

Randox Life Sciences

The Life Sciences department produces high quality recombinant proteins and polyclonal antibodies for research and development purposes. The department became necessary when Randox developed the protein biochip array technology



and needed reliable sources of proteins and antibodies for the assays.

A state of the art facility and an excellent multi-disciplinary team now ensure the manufacture of proteins and antibodies from source for in-house production of biochips as well as covering the wants and needs of an ever-increasing customer base. All products are available in a range of sizes to suit your needs. They are developed for research, and the available range reflects the spectrum of biochip

array production. It covers diagnostic markers of cardiovascular disease, inflammation, oncology, diabetes, immunology, drugs of abuse and drug residues. Research lies at the heart of the company; 240 new biomarkers are currently in development. We also offer custom product development.

E-mail: marketing@randox.com
Fax: +44 (0) 28 9445 2912

RX Series of Clinical Analysers

Randox also offers a range of clinical analysers that employ an impressive range of time, labour and cost saving features. The RX series of analysers – RX imola, RX daytona and RX monza - are bench top systems that combine outstand-



ing flexibility with a comprehensive test menu, including clinical chemistry, specific proteins, lipids, antioxidants, therapeutic drug monitoring, drug residue, food and wine testing.

Over 100 reagents are dedicated to the RX series of analysers. An extensive range of controls and calibrators covers all test analytes. Keeping abreast of new trends in diagnostics, research and clinical trials, our R&D department are constantly developing new markers.

The RX daytona and RX imola fully automated clinical chemistry analysers have several important features in common:

- Wide test menu to include

markers for research and clinical trials

- Dedicated reagents and integrated bar code scanner
- An ethos of TLC (time, labour and cost saving features)
- Low sample and reagent volumes
- Permanent cuvettes and low water consumption
- Auto start and shutdown, auto washes
- Easy-to-use software
- Bi-directional LIMS interface

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**Innovative New
Range of
Finnpipettes
Thermo Scientific
Finnpipette F3
Series Delivers
High Standard of
Accuracy and
Precision**

Thermo Fisher Scientific Inc., the world leader in serving science, has expanded its Finnpi[®]pipette product family with the introduction of the new Thermo Scientific Finnpi[®]pipette F3 Series. The series includes eight single-channel models covering 1 µl to 10 ml, as well as nine fixed-volume pipettes (1 µl to 1 ml) for assured versatility. The Thermo Scientific Finnpi[®]pipette F3 series offers superior accuracy and the high-

est levels of pipetting precision for both routine use, and for quality-conscious research and clinical laboratories.

Over 35 years of pipetting expertise has been used to develop the new Thermo Scientific Finnpi[®]pipette F3 Series. Each colour-coded pipette features a revolutionary double-action pipetting push-button. The advanced adjustment mechanism allows superior volume precision to two decimal places; the selected volume is then locked to prevent any accidental volume alterations.

The Thermo Scientific Finnpi[®]pipette F3 Series incorporate many novel ergonomic features which significantly prevent the occurrence of repetitive strain injury (RSI) symptoms. The handle softly contours the shape of the user's hand, and the improved wide-supportive finger rest allows the user to relax

their hand between pipetting actions. The smooth rounded-shaped tip ejector is safe to use with gloves and the wide top permits easier tip ejection. The larger display makes the numbers easier to read and allows volumes to be set quickly, so the researcher can focus on their work.

As with the entire Thermo Scientific Finnpi[®]pipette range, the new Finnpi[®]pipette F3 Series is compatible with most common tips, which are available as standard and sterilised racked tips as well as refill kits, providing flexibility for all applications.

E-mail: sales.labequip.em@thermofisher.com

Website: www.thermo.com



**New Class II
Biological Safety
Cabinets
The Thermo
Scientific
MSC-Advantage
Cabinet Range**

Thermo Fisher Scientific Inc., the world leader in serving science, today introduced the new Thermo Scientific MSC-Advantage[®] Class II biological safety cabinet range. The MSC-Advantage safety cabinet platform offers the highest levels of safety and reliability with improved energy efficiency, simpler operation and less maintenance than traditional cabinets. These features make both the 1.2m and 1.8m wide models a good choice for all laboratories that require stringent safety performance with reduced power consumption.



With advanced internal airflow and motor technology, Thermo Scientific MSC-Advantage cabinets offer optimal energy efficiency, operation and serviceability. At full speed the motors

consume 60% less energy than standard cabinets. To further conserve energy, the intelligent speed control automatically reduces blower speed to 30% when the window is closed. This unique technology extends HEPA filter life while ensuring a sterile working environment and saves energy to minimise operating costs. Noise output has also been reduced to <55 dB (1.2 m model), increasing user comfort. In addition, a simple to operate microprocessor control clearly displays essential operational, safety and service data.

The front windows of the Thermo Scientific MSC-Advantage cabinet range drop within their frames to enable full access to the upper inside window surfaces. Furthermore, all removable components, including the HEPA filters, can be changed from the front, minimising filter replacement time. In addition, smooth components are used throughout the cabinet, virtually eliminating the risk of injury during routine cleaning, servicing, and maintenance procedures. The optional UV light is programmable from 1 minute to 24 hrs, reducing the need for bulb replacement, and the selection of fixed and adjustable stands provides the correct working height for all situations.

E-mail: sales.labequip.em@thermofisher.com

Website: www.thermo.com



formance fixed-angle carbon fiber rotors and new high-capacity adapters in this release, the Thermo Scientific Heraeus Multifuge 3 Plus Centrifuge Series brings unprecedented speed and capacity to the laboratory bench, thereby dramatically accelerating the researchers' everyday sample preparation processes.

The Thermo Scientific Heraeus Multifuge 3 Plus is a versatile 3-litre centrifuge that offers researchers the highest bench-top processing capabilities in the market. The strong yet lightweight properties of the carbon fiber rotors allow for unprecedented g-forces – delivering super speed centrifugation in a bench-top centrifuge: 14 x 50 ml conical tubes; 8 x 50 ml conical tubes at over 24000 x g; 6 x 250 ml bottles at 18500 x g, 48 x 1.5/2 ml at over 24000 x g, and 28 x 50 ml conical tubes in the swinging bucket rotor in sealed conditions. For blood tube processing, the Heraeus Multifuge 3 Plus offers new adapters that deliver industry-leading capacity: 108 x 5 or 7 ml blood collection tubes and 84 x 10 ml blood collection tubes. The combination of capacity and processing power in the new Heraeus Multifuge 3 Plus means that researchers can spin more samples in less time, which in turn frees them to focus on their results.

With its broad selection of nine swinging-bucket rotor configurations and seven fixed-angle rotors, the Thermo Scientific Heraeus Multifuge 3 Plus offers unsurpassed versatility, making it a truly cost-effective investment for every lab. Together with the low-profile design, a soft-touch waterproof keypad, SMARTspin™ Imbalance Detection System, and numerous other safety and convenience features, the Heraeus Multifuge 3 Plus Centrifuge Series continues to set the industry standard for reliability and convenience.

E-mail: sales.labequip.em@thermofisher.com

Website: www.thermo.com

**New General
Purpose
Centrifuge
System**

New Thermo Scientific Heraeus Multifuge 3 Plus centrifuge offers industry-leading capacity and speed to accelerate sample preparation processes.

Thermo Fisher Scientific Inc., the world leader in serving science, today introduced the Thermo Scientific Heraeus[®] Multifuge[®] 3 Plus Centrifuge Series – a fully integrated, high-throughput system that includes a broad range of high-capacity, high performance rotors and adapters for both clinical and research applications. With the addition of four new high per-

**Sysmex KX-21N
3-Part Diff
Haematology
Analyser**

Easy and affordable without compromising diagnostic accuracy and system reliability. Sysmex KX-21N fulfils these criteria in an excellent way. Whether it is used as the main instrument in a lab with moderate blood sample throughput or acting as a back-up system for a larger haematology analyser, its easy-to-operate design and the reagent system made up of only 2 components makes thorough routine haematology analysis an uncomplicated and economical matter.



KX-21N produces 19 parameters covering CBC analysis and 3-part WBC differential count from whole blood samples. It requires only small blood volumes, making it the right choice also for paediatric samples. Its analytical precision and robustness is founded on proven technology also used in Sysmex' high-end analysers, and daily maintenance is minimal and really easy to perform. KX-21N consists of a single operational unit including pneumatics and lysing reagent enabling this compact system to find its place even in laboratories of limited space.

Integration of the instrument is facilitated by a row of connection possibilities: from external bar code reader and printers to the optional data management system K-Xpert and the LIS – components can be connected to the individual user's demands.

Website: www.sysmex-europe.com
E-mail: info@sysmex-europe.com
Fax: +49 40 527 26 100

**Sysmex XT-Series
5-Part Diff
Haematology
Analysers**

Two compact fully automated haematology analysers using the exciting and well-proven technology platform of Fluorescence Flow Cytometry. Designed for medium workloads it is capable to meet demands of high quality analysis and fast sample processing of 80 samples per hour alike. The XT-series convinces with an excellent performance, and the XT-2000i adds a wider range of clinically significant parameters – such as reticulocyte differential plus fluorescence-optical thrombocytes. XT-1800i analyses 26 haematological parameters in total, whereas XT-2000i produces 33. High sensitivity and specificity for the separation of normal from pathological



samples, meaning low review rates for the WBC differential, are outcomes of that superior technology found on both analysis systems.

The XT-series' modest demands when it comes to maintenance or operator time, its compact size and flexible configuration possibilities – such as a twin configuration offering double speed with one common data base – allow smooth integration into existing routine procedures. XT-2000i and XT-1800i offer random access selective test profiles and real time bi-directional Host communication. This economically attractive concept ensures conformity with today's tight hospital budgets.

Website: www.sysmex-europe.com
E-mail: info@sysmex-europe.com
Fax: +49 40 527 26 100

**News in
Haematology
Laboratory
Testing**

Well-proven and established Fluorescence Flow Cytometry technology by



Sysmex now becomes available for all laboratories with the new XS-1000i and XS-800i haematology analysers.

The introduction of the first high-end haematology analyser XE-2100 operating with Fluorescence Flow Cytometry

technology in 1999 revolutionised possibilities in haematology testing and diagnosis. As of today, thousands of laboratories established new workflows for improved diagnosis and patient monitoring using this outstanding technology. The fluorescence labelling of native cells has shown to be of special value for leukocyte differentials under severe pathological conditions and reliable detection of immature cells.

With the new series of whole blood analysers, XS-1000i and XS-800i, this key technology becomes also available for the smallest labs and lowest workload demanding a complete 5-part differential. Designed to suit requirements of such labs, the system aspirates only 20µL of whole blood and is extremely easy to use.

E-mail: info@sysmex-europe.com
Fax: +49 40 527 26 100

**Optical
Polarimeter with
Integral LED
Light Source**

For over 40-years, the Model D polarimeter and sodium lamp outfit has been the primary choice of leading industrial and academic institutions throughout the World, offering practical assessment of optically active materials combined with high accuracy measurement.



Changes in legislation, particularly within the sugar and pharmaceutical sectors, has demanded a shift towards digital instrumentation, however, the need for a high quality optical polarimeter is still paramount where circumstances dictate that an optical instrument should be used. Such applications include use in contract laboratories of low-sample throughput and of course the continued use in both physics and chemical departments within the education field. In 2008, Bellingham + Stanley Ltd. has updated the original Model D design to meet the requirements of 21st Century applications. The instrument body has been replaced with a new 'low weight' component that reduces shipping costs, significantly important where a number of instruments are supplied to one destination, and the sodium lamp has been replaced with a light-weight, low cost LED light source with an integral intensity control. Retaining the measurement specification of the original Model D, the new D7 provides the user with one of, if not THE highest specification optical measurements of rotation at a fraction of the cost of its predecessor.

Fax: +44 (0) 1892 543115
Email: sales@bellinghamandstanley.co.uk

www.labtech-equipment.com

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Refractometer and Polarimeter meets technical requirements of FDA regulation 21 CFR Part 11

Stringent control of measurement data and the need to limit instrument users to authorised personnel within the pharmaceutical industry has dictated to instrument manufacturers a new role in data handling. In the past, pharmaceutical companies have been forced to keep written records within their organisation but with the introduction of FDA regulation 21 CFR Part 11, many companies are either adopting computer records or are planning to do so in the near future.



Such companies now look for instruments that feature operational software that facilitates data transfer in accordance with the latest FDA regulation.

Bellingham+Stanley Ltd. has recognised the latest requirements and has introduced new software to its existing range of RFM800 refractometers. Available in a number of measurement ranges and with a choice of two accuracy levels, the RFM800 satisfies the operational requirements of FDA regulation 21 CFR Part 11. Levels of security can be determined by the customer, limiting access to calibration and configuration menus and providing a means of taking and verifying results by way of a controlled PIN system. Instrument configuration is protected and when accessed correctly, changes are recorded within the instrument for later retraction and inspection. Data is output complete with electronic signature via RS232 in

csv format or may be printed to a dot-matrix printer.



Additionally, in 2007, Bellingham + Stanley Ltd. launched a new high accuracy polarimeter typically suited to the pharmaceutical industry and having a similar operational software as the RFM800, is compliant with the operational requirements of FDA regulation 21 CFR Part 11. With a resolution to 3-decimal places, the ADP440 also satisfies the minimum requirements of USP/BP and EP for single wavelength (sodium) measurement of optical rotation. User methods facilitate the operator to configure the measurement display, allowing results to be shown not only as rotation but also as specific rotation or concentration values. Additionally, where dictated by measurement protocols, the instrument may be set up to allow five individual measurements from a randomly selected sample to be made and then print the results together with a mean value of the sample.



Advanced security and enhanced measurement performance is all well and good but without reliable calibration, it all becomes meaningless. Calibration materials of the highest standard are required within the pharmaceutical industry. Bellingham + Stanley Ltd., a UKAS accredited calibration laboratory No.0834, launched a new range of traceable materials for use with refractometers and polarimeters. Refractive Index Fluids can now be supplied across a wide range of values between 1.33299 to

1.51638 RI with an accuracy to five decimal places and having 12-month validity, are supplied with a Certificate of Calibration.



Quartz Control Plates can also be supplied with a Certificate of Calibration and for customers already having their own plates within a specified optical rotation band, may send them back for recertification as part of GLP. Fax: +44 (0) 1892 543115 Email: sales@bellinghamandstanley.co.uk

RFM300+ Refractometers with Peltier temperature Control for Industrial Applications

For over 15-years, the RFM340 refractometer has become the benchmark in refractive index and °Brix measurement within the industrial manufacturing sector. In 2007, Bellingham + Stanley Ltd. launched replacement models that surpass the operational features of the earlier instruments, whilst retaining the simple to use philosophy and factory friendly construction.

The new models have a number of additional benefits that enhance the world leading marque. Sample is presented to the artificial sapphire prism housed in a very flat, easy to clean dish. Replacing the presser instigates the reading whilst the Peltier



temperature control with an intelligent thermal management system ensures that the result is only given when both the temperature and sample are stable. The results are shown on the display and may be printed, sent to LIMS and/or up to 700 may stored within the instrument memory for later extraction.

A Methods system allows rapid configuration of measurement parameters; typically only two button presses are required to change scale, compensation type, stability check type, operating temperature etc. Additionally, citric acid correction values or product offsets can be set independently to product types, making for good use in beverage packaging plants, amongst other applications. A PIN system protects instrument settings from misuse in factory environments and an optional Enhanced Protection Pack ensures nothing can penetrate the instrument systems. Two special models, fitted with Kalrez® gaskets, are also available that allow for use where harsh solvents are involved such as those in the edible oil, resin, adhesive and chemical industries.

Fax: +44 (0) 1892 543115 Email: sales@bellinghamandstanley.co.uk

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PRODUCT INFORMATION

Biochrom Offers Complete AAA Solutions

The Biochrom 30 Series of compact user-friendly Amino Acid Analysers offers a complete analytical solution. The new series consists of three compact bench top, PC-controlled liquid ion exchange chromatography systems dedicated to rapid and specific amino acid analysis within the clinical, pharmaceutical, proteomics, food and feedstuff industries. The Biochrom 30 Physiological system is designed for metabolic disorder screening and is ideal for use by hospitals, paediatric labs, clinical institutions, contract analysis labs, and clinical researchers.



The Biochrom 31, which is dedicated to the analysis of protein hydrolysate, offers full automation for the fast and reliable quality/authenticity analysis of generic drugs and infusion fluids to a high standard that satisfies legislation. Long-life columns can tolerate various matrices and a high-salt content in the analysis of infusion liquids and recombinant or synthetic peptides. The Biochrom 31 requires virtually no sample preparation making it ideal for analysis of soft drinks and beverages.

The Biochrom 32 is a 'load and go' compact bench top analyser designed to run whole profiles of amino acids as well as short programmes enabling the user to rapidly analyse single amino acids. The Biochrom 32 enables rapid analysis of complex amino acid mixtures found in food and feedstuffs. Analysis of lysine, an amino acid in cereal grains and some vegetable protein sources, using the Biochrom 32 takes less than ten minutes and allows rapid adjustment of feed-stuff formulations.

Fax: +44 (0) 1223 420164
Email: enquiries@biochrom.co.uk

Biochrom UV/Vis Spectrophotometer Offers Versatility

Biochrom's Libra S22 is a versatile and reliable UV/Visible spectrophotometer. The Libra S22's large sample compartment and wide range of accessories make it an ideal laboratory workhorse. The simple-to-use instrument offers advanced performance, incorporating xenon lamp technology for longer source lifetime and lower maintenance costs.



The Libra S22's optical noise compensation capabilities improve signal to background measurements. Instrument Performance Validation (IPV) is included as standard to help laboratories prove the quality of their results. GLP results can be viewed on the display or printed out.

In addition to measuring absorbance, transmittance and concentration, they provide a standard curve routine for analyte determination. Wavelength scan (with zoom), absorbance changes with time, reaction rate determinations and standard curves can be displayed as graphics and printed out. User defined equations can be entered using multi-wavelength mode and up to 18 methods can be saved in separate operator folders. Upgrading the instrument with Acquire Software and a PC provides further data manipulation benefits.

Biochrom's Libra range starts with the Libra S2 colorimeter the Libra range extends through visible only products (the Libra S4, S6, S11 and Libra S21) to UV/Visible products (the Libra S12, S22, S32 and S32PC) and finally embraces Pharmacopoeia compliant instruments such as the Libra S35 and S35PC.

Fax: +44 (0) 1223 420164
Email: enquiries@biochrom.co.uk

Diode Array Spectrophotometer Targets Life Science

The Biowave II diode array spectrophotometer combines a series of key life science analysis methods with the rapid scanning, kinetics and concentration capabilities to provide a very useful addition to any molecular biology laboratory. The instrument handles a number of pre-defined methodologies for nucleic acid quantification (DNA, RNA and oligonucleotides), protein assays (BCA, Biuret, Bradford and Lowry) and cell culture density measurements. For purity checking the nucleic acid scan is particularly useful, especially for RNA samples where impurities may be present in the 230nm region, yet not have an adverse effect on the A260/A280 ratio.



In kinetics mode, the basic plot of absorbance against time may be supplemented with the result for deltaA/min plus the correlation coefficient is also calculated for the duration of the assay. This slope may be multiplied automatically by a factor to convert it directly to rate of reaction.

All results may be printed to an optional integrated high quality printer for a permanent record or via either a USB or Bluetooth connection to a suitable PC for storage or printing. A higher resolution Biowave II+ is also available featuring a 3nm bandwidth.

The system is compatible with disposable low volume UV cuvettes.

Fax: +44 (0) 1223 420164
Email: enquiries@biochrom.co.uk

Microbiology Cultivation with the New Anoxomat MARK II system

Medica announces the release of EasyStat, a fully automated blood gas analyser that measures pH, PCO₂, PO₂, Na⁺, K⁺, Ca⁺⁺ and Hct. As the name implies, EasyStat is easy inside and out.



On the inside, EasyStat is a closed system with all reagents and waste contained in a single disposable Reagent Module. EasyStat's unique modular design provides easy operator maintenance. Maintenance free Electrodes are easily replaced. A single piece of pump tubing replaces the fluid path.

On the outside, EasyStat is compact and lightweight. EasyStat utilises a simple yes/no approach to analyser operation, prompting the user through each step. An optional handle makes this analyser very portable.

Fax: +1 514 694 8901
E-mail: bmscangb@total.net

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Smartline- The Smart Way to Carry Out HPLC

The Knauer Smartline instruments combine most up-to-date technical features with a stackable design (Knauer Power Tower), which occupies a very small space in the laboratory. All components can be controlled either from the front panel or by software. The Knauer HPLC software ChromGate® is a client/server chromatography



data system for instrument control, acquisition and evaluation of data and flexible reporting. FDA 21 CFR Part 11 compliant. A selection of KNAUER Smartline instruments:

- Smartline HPLC Pump 1000 with exchangeable pump heads (incl. biocompatible versions). Flow rates from 0.001 up to 50.0

ml/min, max. pressure up to 400 bar, low pulsation. Max. quaternary high pressure gradients (low-pressure requires Manager 5000).

- Smartline Manager 5000 (4-channel low pressure gradient module, 4-channel online degassing unit, and A/D,D/A interface).

- Smartline PDA Detector 2800 based on advanced fiber optics technology, scan range 190 - 1020 nm, resolution 0.8 nm/diode, wavelength accuracy < 0.5 nm, reproducibility < 0.1 nm.

- Smartline UV Detector 2600 (multi-wavelength, diode array

based), wavelength range 190 - 510 nm, 4 channels, spectra scans (max. 10 scans/s).

- Smartline UV Detector 2500 (wavelength range 190 - 740 nm, spectra scans in stopped-flow mode). A wide range of flow cells is available for all KNAUER spectrophotometers incl. analytical and preparative versions.

- Smartline RI Detector 2300 / 2400 (refractive index detector) for HPLC and gel permeation chromatography applications (GPC/SEC).

E-mail: info@knauer.net
Fax: +49 30 801 50 10

Osmometers for Medicine and Chemistry

All measuring methods used in osmometry rely on the so-called colligative properties of a solution (freezing point depression, vapor pressure depression, osmotic pressure) and have the same aim – to determine the number of dissolved molecules or particles in a solution in a given amount of liquid. The average molecular weight (g/mol) of the undissociated substances can also be calculated if the initial weight is known. Osmolality can be determined for any solution, be it a dissociated salt or any other



solution of unknown composition.

Osmometers from KNAUER are used in medical and physiological laboratories, as well as in chemistry and in polymer chemistry. Having developed and manufactured osmometers for nearly 45 years, KNAUER is one of the most experienced

osmometer manufacturers on the market. KNAUER osmometers are easy to use, have excellent sensitivity, and are very moderately priced.

- The Vapor Pressure Osmometer K-7000 is ideal for determining the total osmolality of biological liquids. Molecular weights of polymers can also be determined in aqueous or organic solvents. Measurement methods and measuring curves for data evaluation are easily generated using EuroOsmo® software, designed especially for the K-7000.

- The new Semi-Micro Osmometer K-7400 was designed especially for the determination of osmolality in biological and physiological fluids using the freezing point depression technique. Measurement is performed automatically



once the sample is introduced. The measurement range is from 0 up to 3,500 mOsmol/kg (maximum value is dependent on the solution freezing properly). Values can be read out over the display or be sent over the RS-232 connector to a PC or printer. E-mail: info@knauer.net
Fax: +49 30 801 50 10

The Preparative Approach to Liquid Chromatography

The aim of preparative HPLC is to isolate the maximum amount of a certain product at a desired purity in a minimum of time. Preparative chromatography encompasses a broad range of purification processes, from the isolation of minimal amounts of pure substance for subsequent analytical investigation, all the way up to the continuous production of tons of pure product according to the principle of simulated moving bed (SMB) chromatography on an industrial scale. Analytical

and preparative HPLC systems possess in principle a similar design but have completely different system specifications based on the completely different priorities of their separation tasks.

As the process scale increases, the throughput and economic efficiency of the whole process become more decisive factors. Preparative HPLC typically involves working with samples at their maximal concentrations and column loading far above the linear adsorption isotherms required for analytical purposes. Detector selectivity and sensitivity become thereby not only less important parameters, but must also be purposely minimized, requiring flow cells with short path lengths. With higher flow rates, eluent consumption



and waste disposal costs become more important, making solvent recycling an essential feature. For many purification and fractionation tasks, the maximum number of fractions possible is not important because only a small number of key substances, if not just one, is targeted. What really counts for such production-scale chromatography is

that the peak-triggered fraction collection is performed accurately, delivering fractions of desired purity and allowing collection of large volumes for automated repeated runs.

KNAUER offers HPLC systems for exactly those purification needs. The Prepline preparative HPLC systems have been designed for flow rates of up to 1,000 ml/min and pressure stability up to 400 bar. With a footprint of just 22 x 40 cm (W x D) it requires less space than many analytical HPLC systems. It can be operated either manually or with KNAUER ChromGate® software including its FRC Option for fully automatic control and advanced fraction collection options.

E-mail: info@knauer.net
Fax: +49 30 801 50 10

PRODUCT INFORMATION

Media Preparation and Automation

The new 'ADD-SS' produced by International Pbi is an automatic microbiological media dispenser used to fill in disposable Petri dishes.

The carousel holds 240 Petri dishes and feeds dispenser con-



tinuously and automatically. The unitary construction structure made entirely of polished AISI 304 stainless steel is ideal for cleaning and disinfection.

The dispensing of media is performed by an incorporated peristaltic pump that can also be used to fill test tubes, containers, etc. An industrial ink jet printer produces a clear plate identification for lot, date, type of medium. The "ADD-SS" in combination with the media preparator 'AGARSTER' is an ideal solution to obtain filled Petri dishes of the best quality in accordance with GLP. Over 1000 units are working daily all over the world to help the microbiologist to have a better life.

Fax:+39 02 40 090 010

E-mail:info@internationalpbi.it

Auto-Koch Portable Table Top Autoclave

Auto-Koch produced by International Pbi is a 23 litres transportable steam steriliser for laboratory and medical use as an aid to R&D.



Fully automatic sterilisation at the touch of a button. No downtimes with a nearly maintenance free autoclave. Flexible working, independent from central facilities.

Fax:+39 02 40 090 010

E-mail:info@internationalpbi.it

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Ergonomic Pipettor for Use in Biological Safety Cabinets

The "Giraffone", from International pbi, is a new automatic pipettor to be used under a Biological Safety Cabinet.



It has a new ergonomic design with a longer handle - this is the reason of the name - to reduce the amount of required arm lifting that is necessary with a conventional pipettor.

Removable stand enables the unit to be set down without the risk of pipette contamination. Any type of disposable sterile pipette can be used.

Fax:+39 02 40 090 010

E-mail:info@internationalpbi.it

Eurocel and Europak Chiral Columns

German HPLC manufacturer KNAUER has recently expanded its line of polysaccharide-based chiral stationary phases (CSP). The company reports, that with this new set of columns it is now possible to



solve a majority of chiral separation tasks. The cellulose-based Eurocel and the amylose-based Europak columns offer excellent enantioselectivity and outstanding eluent flexibility. The Eurocel and Europak chiral columns can be operated in normal-phase mode, polar-organic mode, and reversed-phase mode. The new CSPs also feature high loadability and stable performance. The new chiral columns are available with particle sizes ranging from 3 µm to 20 µm and in various column dimensions for fast analysis as well as for preparative purification applications.

E-mail: info@knauer.net

Fax:+49 30 801 50 10

Metrohm's New Application Database is Online Multilingual Access to More Than 1200 Documents- Free of Charge

Metrohm has extended its well-established online search by a free application database (products.metrohm.com) that can be accessed in different languages and includes more than 1200 documents covering the following areas of analytical chemistry:

Ion chromatography
Ion-selective and pH measurements
Karl Fischer titration



Oxidation stability
Potentiometric Titration
ProcessLab
Polarography

Sample preparation and liquid handling

Voltammetry (trace analysis)

Visitors can perform full-text search in German, English, Spanish or French. Additionally, the well-structured database allows to search by predefined analysis methods (e.g. ion chromatography, Karl Fischer titration) or application areas (e.g. pharmaceutical industry, plastics, water). More than 300 Application Bulletins, 20 Posters and 950 Application Notes are available to solve your application problems and provide an excellent overview of Metrohm's product range. After login or registration, the downloadable pdf documents can rapidly and easily be sent to an

interested colleague by activating the 'Send a friend' function. The application database is steadily growing. In the near future, the database will include Metrohm's scientific publications and will be searchable in Italian and Chinese.

Weblink:

www.professional-ic.com

Fax: +41 71 353 89 01

E-mail: info@metrohm.com

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PRODUCT INFORMATION

Reaction Vessels

Tempering reaction vessels and Bio reactors are utilised in the branch of chemistry, biotechnology and process engineering. The utilisation of borosilicate glass 3.3 DIN/ISO 3585 ensures a high chemical resistance as well as a neutral conduct of the flask. Heatable reaction vessels can be used from -150°C to +300°C depending on the version.

All reaction vessels produced by KGW-ISOTHERM are based on a plane flange-system of Schott. With this standardised flange system, an extensive accessory and spare part program is at the customer's disposal. Further it ensures a easy handling and a high density.



The reaction vessels are offered, by standard, in three versions. Single walled, double walled, or a triple-walled vacuum insulated flasks. Different coolant connections are available too.

We have 330 standard reaction vessels in our program.

All reaction vessels, even the standard versions, are only manufactured when ordered. Mainly, changes with connections or flanges could be offered without additional charges.

Custom made versions are always possible. By means of our CAD-system, we will submit an offer with drawing. In addition we could offer complete reactor systems, consisting of stand, reaction vessel, lid made of glass or V2A, stirrer, and many more accessories.

Fax: +49 721 95897 77

E-mail: info@kgw-isotherm.de

KALTGAS- The System for Maintaining Stable High or Low Temperatures

KALTGAS (cold gas system) of KGW-ISOTHERM is a system for maintaining desired temperature in a temperature range from -180°C to +180°C. It produces a temperature controlled gas stream, which can be blown into a chamber, a reactor or directly on a sample.



The desired temperatures are reached by evaporation of liquid nitrogen. LN2 is warmed up with the help of a heat exchanger, which is controlled by a temperature regulator. Gas is led through a insulated hose to the sample or chamber. Thus a constant gas stream with a constant temperature is available at the jet nozzle of the cold gas hose. The big advantage of the cold gas system is in fact that the system itself is uncouplable from

the sample chamber. One cold gas system can be used for different cooling applications or chambers.

A further characteristic of this cold gas system is the cooling of samples in free area. Here the laid open sample is blown on with tempered nitrogen gas. So, desired temperature can also be reached on construction units, or on devices in the inserted condition or on operating parts.

Fax: +49 721 95897 77

E-mail: info@kgw-isotherm.de

Dewar Flasks and Cryo Containers

KGW-ISOTHERM has got one of the most extensive product programs within the range of Dewar flasks and cryo containers for liquid gases (LN2) and cooling agents (CO2) for the laboratory market. The standard program consists of over 280 Dewar vessels, made of borosilicate glass 3.3 DIN/ISO 3585, which are mounted into metal, aluminium or V2A casings. Dewar vessels are offered in cylindrical, dish-shaped or spherical design. Additionally the Dewar vessels can be provided with a plan flanges, standard flanges or threads. Apart from the standard dimensions KGW-ISOTHERM



manufactures a multiplicity of special designed Dewar vessels on customer's request.

Further KGW-ISOTHERM offers over 65 kinds of cryo containers out of stainless steel or aluminum, which are used for storage and transport of liquid nitrogen. LN2 containers are available from 2 to 400 litres, from a simple storage container up to a complete container with pressure attachment and level indicator.

Additionally the enterprise manufactures customized cryogenic applications. These are automatic LN2 filling devices by means of level controllers, mechanical shrinking stations for shrinking sockets on shafts, or cold gas systems for a temperature range from +160°C to -180°C.

Fax: +49 721 95897 77

E-mail: info@kgw-isotherm.de

Samples are Safe and Secure with SUREseal™

The new SUREseal™ cap has been introduced following significant research and development and is designed to protect against leakage to ensure optimum protection for all liquid samples stored in the laboratory.

Now available from Scientific Laboratory Supplies Limited (SLS), the patented SUREseal™ insert cap is fitted to both Polystyrene and Polypropylene 30ml universal containers.



These are available with printed or plain labels as well as those

pre-dosed with boric acid. A loose spooned version is also available for the collection of faeces.

The profiled, easy-to-use cap features an elastomer seal which is chemically bonded to the cap body and is designed to retain drips, whilst a secondary seal and 'wiper' feature means containers remain secure and leak proof. SUREseal™ capped containers can be centrifuged up to 3500g and are manufactured under aseptic cleanroom conditions.

Fax: +44 (0) 1159 825 275.

Email: ecipko@scientific-labs.com.

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**Emergency
Showers and
Fittings from
Broen**

BROEN CLEANLINE 602

second generation fittings for pure gases

BROEN BOSS CLEANLINE 602 fittings is the second generation fittings for pure gases and can be used for gases up to 6.0 (99.9999%) purity. The new range has the following special features:



-Unique design by Christian Bjørn (the famous Danish designer)

-Combined pressure regulator, stop and flow valves

-Space saving design

-Easy and quick to mount

-Ultrasonically cleaned

-Easy grip handle

-Full metallic diaphragms in stop valve, pressure regulator and flow valve

-Built-in manometer with bar/psi scale

The fittings are used when the requirements for gas purity are crucial:

-in laboratories in general (as point-of-use valves)

-for gas chromatography, spectrometry, for non-corrosive gases, e.g. Ar,

He, N₂, H₂, C₂H₂.

BROEN BOSS

-flow adjustable quick connect 5.0

The BROEN BOSS QC fittings are primarily used in new constructions or a full laboratory renovation with a flexible laboratory furniture design.

The product is used for applications where analytical instrumentations are changed out or moved more than a few times in a year.

The trend is placing laboratory instrumentation on designated instrumentation carts. Hereby allowing for the set-up to take place in a separate preparation



room outside the laboratory and the actual testing takes place inside the laboratory. This results in a need for rapid connection and disconnection of data, electricity and gas to minimize the set up and teardown time.



Many architects, engineers and laboratory planners are right now planning these flexible laboratories with the open floor space and utilities distributed in the ceiling through over head service carriers and drop down columns.

The key to a good laboratory design is to give the flexible of easy connection and disconnection and the over-head service carrier height (2-2,5m/6-7 feet). At the same time provide the flow and pressure control at the bench height where the user can reach the valves easy and most safely.

**Emergency Showers
Are Important**

Thousands of industrial accidents happen every year in spite of precautionary safety meas-

ures, accidents that are caused by human exposure to heat (fire, boiling water and oil, steam, etc.), to corrosive agents (fluid acids and caustics) and/or to influence by dust and corrosive aerosols (metal, dirt, fluids).

These accidents cause the injured person acute pain, disablement and may even lead to loss of life.

However, experience shows that the consequences and human suffering following such accidents can be considerably limited if water is applied directly to the affected areas instantly after the exposure.

It is a fact of life that the risk lurks in many places: in the laboratory, in the kitchen, in the warehouse, in the chemical plant, in the workshop or generally speaking in any place where heat, corrosion or dust can cause serious human injury.

For these reasons we strongly recommend the installation of adequate emergency shower systems as a means of limiting these risks.

BROEN REDLINE

emergency showers & eye washes

The BROEN REDLINE showers can be recognised by their red body shower pull rods and red eye shower push handles. In addition the internationally adapted graphic symbols for the clear identification of emergency shower installations are always included in BROEN solutions.

Fax: +45 64712476

E-mail: lab@broen.com

**Laboratory
Hydrogen
Generators for
GC Carrier Gas**

The many advantages of hydrogen over helium as a carrier gas are well understood and include increased speed of analysis, increased separation efficiency and increased sensitivity in some instances. With the price of non-renewable helium continuing to increase at a rapid rate there has never been a better time to switch your GC carrier gas supply from helium to hydrogen.



Now, the domnick hunter H-MD high purity hydrogen generator range makes the switch to hydrogen carrier more obtainable than ever by eradicating traditional concerns surrounding the safety of high pressure hydrogen cylinders in a laboratory environment. Every domnick hunter hydrogen generator features a multi-stage, fail-safe explosion prevention system. In many cases the purity of hydrogen produced in-situ by the domnick hunter H-MD hydrogen generator is higher than the purest 'research grade' hydrogen supplied from cylinders resulting in additional sensitivity gains.

The H-MD range has been shown to be just as suitable for GC/MS carrier gas applications as GC-FID carrier gas applications. In addition to the H-MD range, a range of models are available for combustion detector fuel gas applications.

Fax: +44 (0) 191 4821722

E-mail: scientific@domnick hunter.com

Website:

www.domnickhunter.com

High-quality Sieve Shakers "Made in Germany"

The RETSCH range of sieve shakers offers the best pre-conditions for exact and always reproducible results – and already after very short sieving times! The "control" instruments AS 200 and AS 300 have an electromagnetic drive that produces a 3-D throwing motion and causes the spring-mass system to oscillate, thus giving the clamped sieves a horizontal to and fro movement. This 3-D effect ensures the optimal use of the open sieve area and lets the sample move equally over the whole sieving surface.



These two sieve shakers offer a bundle of features which, combined, are unique on the world-wide market:

- Very simple and convenient to operate
- Short sieving times with a high separation efficiency
- Exact, reproducible results
- Adjustable sieve acceleration
- High loading and maintenance-free
- Low noise
- Stands safely thanks to extremely smooth running

The AS 200 is suitable for test sieves up to 203 mm (8") Ø and measures in the range from 20 µm to 25 mm. The AS 300 for sieves up to 305 mm (12") Ø works particularly effectively thanks to its large sieving surface and higher loading.

All operating parameters such as amplitude, sieving time and interval time can be preset digitally. As well as the amplitude, the sieve acceleration, which is independent of the oscillation

frequency, can also be set. The microprocessor-controlled measuring and control unit guarantees constant sieving movements and therefore absolutely reproducible sieving processes. All the relevant operating parameters of the sieve shakers that could have an influence on the sieving result can be calibrated within the context of test agent monitoring.

The new sieve shaker AS 200 tap combines horizontal circular sieving motion with vertical taps as specified in various standards for particle size analysis (abrasives, cement, spices etc.)

Fax: +49 2129 8702

E-mail: mk@retsch.com

Mixer Mill MM 400 - One Mill to Grind Them All

The mixer mill MM 400 is a true all-rounder. It is used for the size reduction and homogenisation of a huge variety of materials, such as bones, tissue, drugs, tablets, ores, soil, plastics and many more.

A classic field of application is reproducible dry grinding, e.g. for sample preparation for subsequent XRF analysis. Thanks to screw-top, leak-proof grinding jars, wet grinding can be carried out in the MM 400 with 100% material recovery. For cryogenic grinding of temperature-sensitive samples, the MM 400 offers the crucial advantage that the required pre-cooling of jar and sample only takes a few minutes. This not only allows for substantial time savings but also helps to reduce the consumption of the expensive liquid nitrogen.

Among the wide range of accessories for the mixer mill are adaptor racks for 5 to 10 reaction vials, so that the MM 400 can also be used for the disruption of cells and tissues.

Grinding jars are available in volumes from 1.5 to 50 ml and in 6 different materials, thus ensuring contamination-free sample preparation.

Features:

- Two grinding stations for high sample throughput



- Grinding jars available in 6 different materials
 - Feed size: < 8 mm
 - Grind size: < 5 µm (depending on material)
 - Memory keys for 3 parameter combinations
 - Reproducible results thanks to digital setting of grinding time and vibration intensity (3 to 30 vibrations/sec.)
- Fax: +49 2129 8702
E-mail: mk@retsch.com

Fast and Reproducible Grinding for Spectral Analysis

For the rapid size reduction to analytical fineness of hard, brittle and tough materials, the new Retsch Vibratory Disc Mill RS 200 is the product of choice. The new model grinds samples such as minerals, cement, concrete, soils and also electronic scrap not only extremely fast but also with excellent reproducibility.

Features at a glance:

- Analytical fineness in seconds: The optimised drive kinematics allow for extremely rapid formation of the movement pattern inside the grinding jar which results in a high final



- fineness after a very short grinding time
- Excellent reproducibility: The RS 200 achieves grinding results with the lowest possible standard deviation. The grinding parameters can be stored and called up again for routine processes.
- Convenient operation: All parameters can be set via one single button, the current settings can be read off a graphics display. For the RS 200 up to 10 parameter combinations can be stored.

• Improved grinding sets: The grinding set geometry was further optimised to increase the energy input and thus make fine grinding in the RS 200 even more effective. At the same time, the largest grinding set made of tungsten carbide weighs several kilograms less than those of other models which makes handling it much easier. The grinding sets are available in 5 different materials and various sizes.

As vibratory disc mills are frequently used to prepare samples for XRF analysis, Retsch now also offers the automatic Pellet Press PP 40 which presses pellets with a pressure force of 40 t in various diameters. The combined use of mill and press helps to increase the sample throughput for spectral analyses.

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Vacuum Technology for the Laboratory

Hybrid Vacuum Pump for condensable and corrosive vapours

Rotary vane vacuum pumps are frequently used to generate a vacuum in the range of 1 mbar to 10^{-3} mbar, such as in freeze drying or vacuum distillation. However, the condensable and corrosive vapours generated in such processes may lead to serious malfunctions of these oil-sealed pumps: The oil is irreversibly contaminated, and vital components suffer from corrosion attack. The new Vacuubrand Chemistry Hybrid Pump RC 6 is a combination of a two-stage rotary vane pump and a chemistry diaphragm pump built of corrosion-resistant materials.

The diaphragm pump evacuates the oil case of the rotary-vane pump, reducing the partial pressures of solvent vapours, oxygen and corrosive gases. When used as intended, no condensation takes place inside the oil-sealed part of the pump. This means less corrosion and cleaner oil for longer periods, and a significantly reduced amount of waste oil.

The Chemistry Hybrid Pump RC 6 is whisper-quiet in operation and easy to maintain, and provides highest mechanical and



chemical stability. A vacuum indicator for the oil case also serves as maintenance alert for the diaphragm pump. The new motor with electronic startup is designed for minimal current draw.

Rotary-Vane Vacuum Pumps XS

For about 100 years, rotary-vane pumps have remained a central part of vacuum technology. Nevertheless, there is always something to improve for VACUUBRAND. The one and two stage XS rotary-vane vacuum pumps have many extra advantages:

- Extra light-weight – up to 40% less weight than many common pumps, combined with unmatched compact design. These vacuum pumps are genuinely “portable”!
- Extra low-noise – the RZ 2.5 runs at approx. 42 dBA, determined in the new VACUUBRAND sound lab. We call it “whisper-quiet”!
- Extra energy-saving – up to 25% at ultimate vacuum.
- Extra user-friendly – up to 20% less parts for regular maintenance.

A new lubrication circuit offers enhanced life of wear parts and



oil. The new pump module design meets important criteria for daily laboratory work: long service intervals, ease of maintenance and low noise level. A new motor layout provides an outstandingly reduced current draw. High vapour tolerance for water and solvents is provided by gas ballast of about 10% of pumping capacity. A good ultimate vacuum can be obtained even under gas ballast operation. The new VACUUBRAND rotary-vane pumps XS are designed for a process vacuum from several mbar down to the 10^{-3} mbar range.

Fax: +49 9342 808 450
E-Mail: info@vacuubrand.de

Fast and Controlled Evaporation at the Touch of a Button

Laboratory-sized vacuum processes such as drying, distillation and sample preparation each require their own respective performance characteristics regarding pumping speed, ultimate vacuum and continuous parameter adaptation.

VACUUBRAND's new chemistry pumping unit PC 3001



VARIO meets all these demands in an 'all in one' solution. It

builds on proven reliability of its predecessor PC 2001 due to the strong heart, the chemistry diaphragm pump MD 1C, combined with innovative user friendly control technology – the new vacuum controller CVC 3000. It has a more intuitive user control interface due to a new simple to use jog wheel and large clear text display. Bidirectional data communication via serial interface RS 232C comes as standard. The PC 3001 VARIO provides fully automatic process control without any user programming, resulting in very fine and very precise vacuum control in both automatic and manual operation. A new fea-

ture is an built-in aeration valve. A further outstanding characteristic of the PC 3001 VARIO is the ultimate vacuum of 2 mbar for working with high boiling point solvents. Even with gas ballast for cleaning the pump from moisture it still achieves 4 mbar. Optimal solvent recovery next to 100% is also standard. The unique ability to operate totally independently and optimally with any make of rotary evaporator firmly establishes the PC 3001 as the number one product of vacuum generating systems for laboratory applications.

Fax: +49 9342 808 450
E-Mail: info@vacuubrand.de

New Touchclave-R Autoclaves

LTE Scientific has launched its eagerly awaited all-new Touchclave-R range of autoclaves.

Designed to increase productivity, performance, versatility and reliability.

Many of the features have never been included on this type of autoclave.

* Air ballast allows sealed and



unsealed fluids to be cooled quickly and reduces the risk of container rupture.

* Dynamic in-chamber cooling - Providing direct cooling to the load is more efficient than using external fans. It also dissipates some of the moisture from the load.

* 'Push-n-Seal' requires no effort from the operator. No bolts, no levers. Simply close the door and start the cycle. The door locks, seals and releases automatically.

* LTE's proven Touchscreen



**Better Base Numbers in Oil Industry-
Provided by Fast
Conductometric Titration**

The measurement of lubricant acid or base number by titration is, although in theory straightforward, a challenging task. An improvement in speed as well as in consistency and

the results strongly depend on the correct system preparation (titer, blank and buffer values).

Advantages of conductometric titrations

A true alternative is the conductometric titration according to the IP 400 standard. The combination of the InLab® 718 conductivity probe and the conductivity option of the Mettler Toledo Titration Excellence T70 titrator provides a unique solution for full compliance with this standard.

Conductometric titration allows to achieve precise and accurate results in

repeatability of the results can be achieved if the determination is carried out by conductometric titration according to the IP400 standard. Experience how to benefit from the advantages of this standard determination with the new Mettler Toledo T70 Titration Excellence titrator.

Challenges in potentiometric titrations

Monitoring of the titrant and electrode condition and verification prior to analysis start, dedicated methods with optimized parameters and last but not least the easy operation are some of the striking features of the new Mettler Toledo Titration Excellence titrator T70 which help you to achieve reliable results in acid or base number determinations according to the IP177/276 (ASTM D-664/D-2896) standards. However these analyses are time-consuming due to the essential extended conditioning of the potentiometric electrodes and the quality of

base and also in acid number determinations with fast signal equilibration and without time-consuming conditioning steps of the electrode during the individual analyses. Furthermore, the lifetime of the conductometric sensor is considerably higher than of the potentiometric sensor.

Powerful system solution

The base number titration according to IP400 with the Mettler Toledo T70 Titration Excellence titrator/InLab® 718 system provides a simple and cost-effective alternative to the IP177/276 (ASTM D-664/D-2896) standards. Titrations are faster, maintenance is simpler and results are equally as accurate. The Mettler Toledo Titration Excellence T70 titrator and the complete automation with the aid of the Rondo 60 sample changer is a powerful combination which greatly improves your efficiency in daily work. E-mail: jesus.gomez@mt.com Fax: +41 44 944 27 88

offers proven flexibility and is extremely user-friendly. There are seven models in the range with capacities from 40 to 160 litres. Options and accessories include:

- * Vacuum system which when added will improve the initial air removal and assist the cooling process.
- * Data archiving system will store 5000 cycles on a single

**Mettler Toledo launches SevenMulti™
Version 2.0- The New Generation of the
Modular Laboratory
pH-/ Conductivity-/ ISE-meter**

Mettler Toledo is delighted to announce the introduction of SevenMulti™ V.2.0 – the enhanced multifunctional meter for even more efficient measurements.

SevenMulti™ is a modular instrument for pH, conductivity,

Further time saving is achieved through improved data management and optimized intuitive instrument operation. The maximization of user friendliness together with the large range of functionality and the new PC software LabX, direct pH make



ion concentration and ISFET with graphical backlit display, clear text menus, excellent data management and unbeaten flexibility for professional measurements and calibrations.

The productivity is increased with the new generation of SevenMulti™ through improved automation possibilities. GLP (good laboratory practice) measurements in two-channel mode and GLP calibrations can be automated using the Mettler Toledo Rondolino sample changer. The electrode can be automatically conditioned after each sample and cleaned using the very efficient PowerShower® system. The connection of a barcode reader allows entering a sample ID without any further keystroke which saves valuable time.

Additionally, security is guaranteed by a PIN code protected expert mode and an integrated pH electrode test. User-definable alarm limits are documented clearly on the GLP printout.

SevenMulti™ the ideal instrument for users that require reliable pH-/ conductivity-/ ISE results in a most efficient manner.

Mettler Toledo is a leading global manufacturer of precision instruments. The Company is the world's largest manufacturer and marketer of weighing instruments for use in laboratory, industrial and food retailing applications. The Company also holds top-three market positions in several related analytical instruments markets and is a leading provider of automated chemistry systems used in drug and chemical compound discovery and development. In addition, the Company is the world's largest manufacturer and marketer of metal detection systems used in production and packaging. Additional information about Mettler Toledo can be found on the World Wide Web at www.mt.com.

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removable flash card. Assisting long term storage of thermometric records.

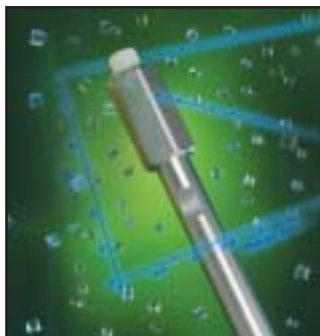
* Effluent retention making the unit suitable for processing cat.3 loads.

* The heating power can be boosted to speed up the sterilisation cycle.

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Authoritative Analysis of Polyolefins by GPC

PLgel Olexis is the optimum column choice for the analysis of very high molecular weight polymers such as polyolefins by GPC. Designed and manufactured specifically for these compounds by Polymer



Laboratories, now part of Varian, Inc., the new column resolves up to 100,000,000 g/mol (polystyrene in THF).

Packed with 13 μm particles for maximum resolution with minimal polymer shear, the columns also operate up to 220 °C for the analysis of highly crystalline materials. The column packing exhibits the excellent mechanical stability and robustness expected from the PLgel product range, with a quality blend of many components so that samples of very disparate polydispersity can be analyzed on the same column set with confidence. Linearity was included as a control criterion in the manu-

facture of the column to ensure resolution free of artefacts across the operating range for straightforward extrapolation. Key benefits of PLgel Olexis include a consistent particle size that maximizes resolution while avoiding shear degradation and a high resolving range that covers all polyolefin applications. PLgel Olexis provides smooth distributions that truly reflect the sample composition
E-mail: PLInfo@polymerlabs.com
Fax: +44 (0) 1694 722171

New Polar Columns Avoid Artefacts

Columns for gel permeation and size exclusion chromatography from Polymer Laboratories, now a part of Varian, Inc., are among the best performers in the marketplace in terms of speed, ruggedness and longevity. The new PolarGel--M

is no exception, providing balanced hydrophobic and hydrophilic surfaces for polar compound selectivity and no interaction between sample and stationary phase, ensuring accurate measurement of molecular weights. Because PolarGel--M columns feature polarities intermediate between PLgel (for organic GPC) and PL aquagel--OH (for aqueous SEC), they are ideal for use with polar solvents and in applications that fall between these two products.



Low swell and high mechanical stability result in longer column lifetimes and optimised pore size distribution and particle

size offer superior resolution and chromatographic performance. Mixed-bed technology provides a wide operating range and simplifies column selection. PolarGel-M is compatible with a broad spectrum of polar solvents and combination of solvents with high water content, allowing flexibility for use in many application areas.
E-mail: PLInfo@polymerlabs.com
Fax: +44 (0) 1694 722171

Polymer Standards Calibration Kits for GPC/SEC

Polymer Laboratories, now part of Varian, Inc., manufactures the highest quality polymer standards kits for GPC/SEC. With extremely narrow molecular weight distributions and extensive characteriza-



tion data, a comprehensive range of polymer standards is available. They cover the widest range of molecular weights, and can be purchased as kits or individual molecular weights for

maximum choice. The EasiCal™ system consists of two different PTFE combs, both with ten detachable spatulas supporting a mixture of five polymer standards. The thin film of polymer (approx 5 mg) on the tip of the spatulas rapidly dissolves when immersed in eluent to provide two GPC/SEC calibration solutions. EasiVial™ consists of three vials, all containing a mixture of four accurately pre-weighed polymer standards, providing a 12-point

GPC calibration in just three injections. The mass of every polymer in the vial is known, so that upon addition of a fixed volume of eluent a solution is prepared at a precise concentration, making EasiVial ideal for both conventional and multi detector GPC calibration. All polymer standards are supplied with a comprehensive Certificate of Analysis.
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Tips Provide Optimum Sterility and Flexibility

A new range of high quality tips which are DNase, RNase, Pyrogen, Human DNA and PCR inhibitor free and suitable for most mainstream pipette models for molecular use and PCR applications, has been introduced by Scientific laboratory Supplies (SLS). These tips are racked in 96's (in 100's for the 1000 μl tip) with each tip housed in its own indi-



vidual well which reduces tip to tip friction and results in improved multi-channel pipette use. This also ensures that if a tip is used the inner casing is not

exposed, so the sterility of the rest of the internal casing is not compromised. The racks are manufactured with recycled plastic and can be autoclaved up to 10 times.

The 10 μl and 1000 μl tips are supplied in a 'long-reach' format which provides the benefit of allowing the tip to reach the bottom of a 1.5ml or 15ml tube respectively, without the nose cone of the pipette entering the neck of the tube. This eliminates the risk of cross-contamination of the pipette from the tube contents and contaminating the tube with the pipette itself. The hydrophobic surface within the tip ensures low sample reten-

tion (excluding 1000 μl) and so minimises the loss of a precious sample by adherence to the wall of the tip itself, meaning maximum sample recovery. The barrier tips, which have no additives which may cause PCR inhibition, have a patented super micron barrier system which allows unrestrained pipetting airflow and so increases pipetting accuracy and precision. The filter will also allow liquid to aspirate through without sealing ensuring that the sample is not lost should over-pipetting errors occur.
Fax: +44 (0) 1159 825 275.
Email: ecipko@scientific-labs.com.

**Mettler Toledo
Presents Two
New High-
performance
Comparators
The World's
Leading
Comparators**

The new XP56 Comparator from Mettler Toledo is the world's new benchmark regarding measurement performance: with a resolution of 52 millions points, it clearly outperforms all Comparator Balances available today. And thanks to groundbreaking innovations in ergonomics and built-in QM tools, it also sets new standards in terms of user convenience and data security.

In the field of Metrology, comparators are used to determine the mass of weights or samples to the highest degree of accuracy. The new XP56 Comparator from Mettler Toledo ideally meets this challenge. With a continuous weighing range of 52 g and a readability of 1µg (1/1000000g) it sets a new world record, and in combination with its dedicated hanging weighing pan that eliminates corner load errors, the XP56 guarantees the world's most accurate and repeatable results.

The WeighCom application guides the user step by step through the mass determination process, and SmartScreen, the user-friendly colour touchscreen display, enables convenient and error-free operation. Thanks to the motorised draft shield doors, user convenience is top, and the possibility to download future software versions from the internet helps safeguard your investment.

Last, but not least, all results are seamlessly documented and a set of built-in QM functions effectively enforces quality guidelines and ensures that your values are always within defined limits – for full data security and regulatory compliance.

The new XP56/26 Comparators: the first choice of mass determination laboratories and calibration service providers worldwide.



Mettler Toledo is a leading manufacturer of precision instruments. The Company is the world's largest manufacturer and marketer of weighing instruments for use in laboratory, industrial and food retailing applications. The Company also holds top-three market positions in several related analytical instruments and is a leading provider of automated chemistry systems used in drug and chemical compound discovery and development. In addition, the Company is the world's largest manufacturer and marketer of metal detection systems used in production and packaging. Additional information can be found under www.mt.com.

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**Outstanding
Vacuum
Weighing
Technology in
Mass
Comparison**

Weighing in a vacuum is the highest challenge for a weighing equipment manufacturer.

Mettler Toledo vacuum mass comparators are the standard used in over 15 national metrology institutes. Thanks to its outstanding know-how and competence, Mettler Toledo can offer two cutting-edge instruments in vacuum weighing technology on the global market, the M_one with its nanogram resolution up to 1 kg and the unique M_10 with its microgram resolution up to 10 kg.

National metrology institutes improve their measurement accuracy in vacuum mass determination using the Mettler Toledo M_one and M_10. These two instruments evaluate various artefacts and provide results with an accuracy of up to 10 nanograms and offer unique flexibility. Determine the mass of weights, artefacts and silicon spheres up to 1 kilogram, respectively 10 kilograms from controlled ambient pressure down to vacuum of 10⁻⁶ mbar. Load the artefacts directly through the quick loading door or through the Load-Lock system. The Windows® -based M_Control software supports the user during the entire process.



M_one and M_10 offer

- Outstanding mass determination up to 1kg or 10kg, respectively
- Advanced round air tight enclosure to ensure a constant environment from atmospheric pressure to vacuum conditions
- High flexibility for different shapes of artefacts
- Innovative Automated Gravimetric Centering (AGC) of weights

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Fax: +41 44 944 27 88

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Pipettor
Swing
TwinSampler**

A compact pipetting automate for combinations of ID-Cards and microplates.

Loading capacity for up to 19 samples, 24 ID-Cards, one microplate and 12 reagents.

The compact dimensions and the flexibility of Swing make it the ideal pipetting automate for small laboratories or as a back-up for large installation.



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Through the operation with DiaMed Maestro Master-Software Swing can be connected to all DiaMed Readers for ID-Cards and Microplates and provides the user with the same features known for all DiaMed automates such as, bi-directionality, complete traceability of tests, samples and operators.

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Care**

The Metrosensor Maintenance Guide on DVD answers all questions concerning the care and maintenance of Metrosensors. Short and clear video sequences are used for a step-by-step demonstration of how to handle and maintain your electrodes.



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 3. Electrodes for surfactant titrations
 4. Ion-selective electrodes
 5. Reference electrodes
 6. Conductivity measuring cells
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Ion
Chromatography**

Metrohm IC is ion chromatography from the technology leader. The 850 Professional IC is the first professional ion chromatography system with intelligent system components:

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- Intelligence in the MagIC Net™ software,
- Intelligence in the Metrosep iColumns.

Professional IC guarantees excellent results, gapless system monitoring, guaranteed traceability of all actions and the simple operation of even complex procedures.

The 850 Professional IC is an extremely compact system with all the flexibility of modular



design. It adapts itself to the particular application and is equipped for all future tasks. The 850 Professional IC also stands for a robust system setup using high-end components. A

long working life with low running costs is guaranteed.

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**An Easy-to-use,
Precise and
Reliable Karl
Fischer Titrator**

An easy-to-use, precise and reliable Karl Fischer titrator

The favourably priced 870 Titrino plus is Metrohm's new Karl Fischer titrator for volumetric water determinations. It can be used to determine water contents from a few ppm up to 100% reliably and accurately in solid, liquid and gaseous samples. With its operating interface designed for routine users, the 870 KF Titrino plus is so easy to use that it only requires a short familiarisation period. Because of its robustness, it is also the ideal titrator for routine determinations.

The advantages of the new 870 Titrino plus at a glance:

- Straightforward installation
- Easy operation thanks to pre-defined methods
- Excellent precision thanks to the high-resolution measuring input
- Live curve for recognising side-reactions

- Overflow protection for increased operating safety

- Compact USB printer as an option

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Metrohm
Serving The Analytical Instruments Market

Metrohm has established itself in the competitive analytical instruments sector and has continually extended its position. We are the global market leader in the fields of titration and voltammetry, and one of the leading innovators in the ion chromatography sector with a high yearly growth rate. In the early 80's the owners donated the Metrohm company without compensation to the Metrohm foundation, whose purpose is to keep the company independent, to provide meaningful employment to local people and to support causes of public interest in our area.

Major products and services

Metrohm Ltd. is the only company providing practically all the relevant ion analysis technologies under one roof: potentiometric and Karl Fischer titration, voltammetry and ion chromatography. These do not primarily compete with each other but are complementary techniques. In addition, Metrohm produces pH,



ion and conductivity meters, stability measuring instruments, instrument software and method-specific software packages, peripheral units as well as a full range of dosing and liquid handling products plus sensors for all kinds of applications. These products form a powerful range of tools that facilitate work in today's analytical laboratories.

Markets served

The Metrohm Group includes more than 30 subsidiaries or joint

venture companies covering 42 countries which account for more than two thirds of total sales and employ well over 1600 people. Metrohm maintains a world-wide distributor network which ensures that you have a competent partner to talk to in ion analysis wherever you may work in this world.

Facilities

The headquarters of Metrohm AG are in Herisau, north-eastern Switzerland – ideally located in the heart of

Europe. Metrohm is a modern company that has grown organically, is fully independent and will remain so.



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