

# 2024



CENTRI-  
FUGATION



CELL  
HEALTH



GENOMICS



LIQUID  
HANDLING



FLOW  
CYTOMETRY



PARTICLE  
ANALYSIS



**BECKMAN  
COULTER**  
*Life Sciences*



Type 45 Ti  
6 x 94 mL



SW 32 Ti  
6 x 38.5 mL



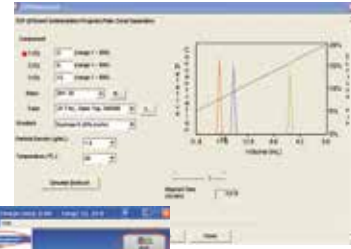
VTi 50.1  
12 x 39 mL



## Optima X-Series - Preparative Floor-Standing Ultracentrifuges

Our Optima XPN/XE Series ultracentrifuges provide speeds to 100,000 rpm (802,000 x g) and offer intuitive operation coupled with powerful onboard features such as eXPert software for method development. These are network compatible and offer a connection to mobile handheld devices with the MobileFuge app (Only Optima XPN).

- Exclusive safety concept with Rotor-Safety-System, Dynamic Rotor Inertia Check (DRIC)
- Innovative concept for the management of voltage fluctuations and power failures
- BioSafe\*-Concept for laboratory ware, rotor and centrifuge
- Rotor volumes up to 1675 ml
- Offers the capability to support 21 CFR Part 11 (Only Optima XPN)
- Variety of swing-out, fixed-angle, vertical, and near-vertical, zonal and flow rotors



## Optima MAX-Series - Tabletop Ultracentrifuges

The Optima Max-Series generates speeds of up to 150,000 rpm with rcf of over 1 million x g. With an extended volume range, these space-saving tabletop ultracentrifuges are a perfect alternative to preparative ultracentrifuges.

- Sample volumes from 175 µl - 194 ml
- BioSafe\* concept for centrifuge, rotor and labware
- MAX-XP software enables extended safety concept (user login, password)



MLA-55  
8 x 13.5 mL



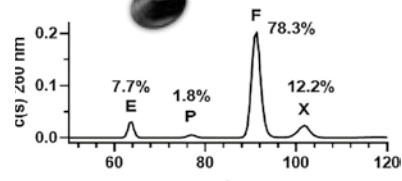
MLA-150  
8 x 2 mL



## Optima AUC - Analytical Ultracentrifuges

Optima AUC can be used to precisely characterize viral vectors (e.g. AAV), macromolecules and nanoparticles. Mass of complexes, stoichiometries, shape parameters and thermodynamic properties can be measured directly in a buffer environment that best suits their application without the need for standards.

- Separation and optical measurement in one step
- Max. speed of 60,000 rpm
- Freely selectable buffer or solvents
- Characterization of heterogeneous samples
- AUC reliably detects low sub-populations, e.g. aggregation proportions of <1%



Analysis of empty (E), full (F), and partially-full (P) AAV particles with aggregates (X). Reproduced with permission from Wang et al.



## Intellifuge

More than just a calculator for your rotors

- Conversion for rotors and tubes
- Direct overview of all available rotor and tube combinations
- Comparison of different rotors/tubes



## Mobilefuge

The app that connects you to your centrifuge

- Monitor and control up to 16 centrifuges
- Warnings and status messages sent directly to your smartphone or tablet
- Usable for Optima XPN- and Avanti-JXN series

## Avanti JXN-Series - High Performance Centrifuge

The Avanti JXN-Series high performance centrifuges have impressive versatility paired with many innovative features. Speeds are available to 30,000 rpm (110,500 x g) and volumes to 6 liters, offering diverse solutions to separate cells, extracellular vesicles, proteins and nanoparticles.

- BioSafe\*-concept for centrifuge, rotor and labware
- Sample temperatures of +4°C at all rotor speeds (Avanti JXN-30)
- J-Lite rotor design for manageable handling of large volume rotors



JLA 8.1000  
6 x 1000 mL



JLA 12.500  
6 x 500 mL

JA 30.50  
8 x 50 mL

## Tabletop Centrifuges

Allegra and Avanti tabletop centrifuges fit a broad range of applications through sample volumes of just a few µl to 3 litres and speeds generating centrifugal forces to 64,000 x g.

- First-time use of Ultra Harmonic Technology (UHT) for the Avanti J-15 Series
- Tube (vial), adapter, bottles and microtiter plate usage possible



## Ultracentrifugation Labware

- A large choice of tubes (vials) and tube closure systems are available
- **NEW: now certified-free (DNAse, RNAse and Endotoxin free) and sterile ultracentrifugation tubes available**



### Selection of ultracentrifugation tubes

- Open-Top Round Bottom Ultra-clear
- Open-Top konical Polypropylene
- OptiSeal Round Bottom Polypropylene
- Quick-Seal Round Bottom Ultra-Clear
- Bottle and Cap Assembly Polycarbonate
- Quick-Seal Round Bottom Polypropylene



## Microfuge-Series - Microcentrifuges

Small, quick and versatile. Centrifuges from our Microfuge-Series are designed for 1.5 and 2 ml microcentrifuge tubes (vials) and also for PCR-tubes (vials).



\*BioSafe and BioSafety are terms intended to describe the enhanced biocontainment features of our products. For Research Use Only. Not for use in diagnostic procedures.

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## DxFLEX\*\* - Flow Cytometer

High resolution and intuitive software solutions simplify DxFLEX workflows both for beginners and experts alike.

Reliable results

- Detection of low-fluorescent populations due to APD Technology
- Up to 13 color CE-IVD marked fluorochroms to maximize sample analysis
- Tools for simplified data analysis
- Optimized resolution and linearity

Excellent efficiency

- Simple and easy-to-use compensation due to the linearity of the semiconductor
- Space-saving small footprint

## CellMek SPS - Sample Preparation System

An automated sample preparation workstation that can be programmed to perform a wide variety of liquid handling operations.

- Designed to automate staining, lysing, and cell washing for a variety of specimen types and applications in the clinical laboratory including flow cytometry

## Navios EX\* - 10-color Flow Cytometer

Intended for in-vitro diagnostic use

- Up to 3 lasers, 12 parameters
- 25,000 events per second
- Integrated vortex
- 32 sample carousel with integrated barcode reader
- LIS connectivity

## AQUIOS CL - Load & Go Cytometer

Fully automated flow cytometer with integrated sample preparation for immunophenotyping and for the identification of human hematopoietic stem and progenitor cells (HPC).

- SIRO "sample in - result out" technology
- Insert primary tube (vial) and go!
- Cap piercing, pipetting, incubation, lyse and acquisition is fully automatic
- LIS Connectivity with Host Query Mode
- With the AQUIOS Designer Software, user-defined protocols, acquisition templates and panels can be created flexibly

# FLOW CYTOMETRY IN RESEARCH

## CytoFLEX\*\* - Platform

... optimally combines excitation and emission, thereby achieving maximum sensitivity. Detection of extracellular vesicles; Measurement of bacteria, bacteriophages, yeasts, cells or similar can be easily realized. With up to 6 lasers and up to 21 fluorescence avalanche photo-diodes (plus 2 scatters) this system leaves nothing to be desired.

- Compact benchtop flow cytometer
- Easy-to-use, intuitive software and compensation
- Single sample feed and Multi Plate Loader Module options
- Absolute cell count without reference beads
- 30,000 events occurrences per second, 24 bit, 7 decades

## CytoFLEX\*\* SRT - Benchtop Cell Sorter

Sort up to four cell populations at the same time with simple compensation workflow and the ability to upgrade your cell sorter to meet new requirements at any time.

- 4-way mixed-mode sorting with the ability to capture soft aborts
- Up to 4 lasers and 15 fluorescence detectors - easy to upgrade
- Simple compensation workflow thanks to APD Technology
- Cell sorting in 96- or 384-well plates with index sorting capability

\*\* For Research Use Only. Not for use in diagnostic procedures.

† polystyrene when triggering on violet side scatter

\*\* In development. Performance characteristics have not been validated.

\* CE/IVD marked for 6, 8 or 10-color in-vitro diagnostic use. Navios EX is cleared for 10 colour immunophenotyping with ClearLab 10C reagent system

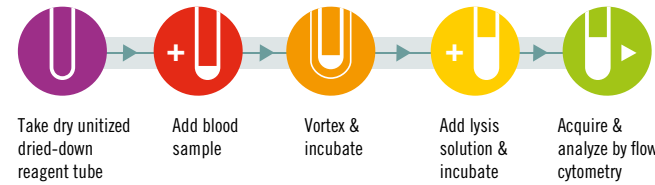
\*\* „In the US, DxFLEX flow cytometer is cleared for 10-color in vitro diagnostic use with ClearLab 10C Reagent System. Fluorescence channels FL11-FL13 and all other applications are for Research Use Only.



## DURAClone\*\*

DURAClone\* kits are dry antibody panels formulated ready-to-use as single tests in FACS tubes, delivering uncompromised performances as compared to liquid reagents. The elimination of antibody pipetting fosters standardization, productivity and method transferability, covering a broad range of immune phenotyping and functional assays.

- Reduction of human sources of error and variability
- Streamlined workflows with reduced hands-on time
- Storage and shipping at room temperature
- Simplified inventory management
- Ideal for longitudinal and multicentric studies



# REAGENTS AND SOFTWARE

## LUCID\*\* - Custom Design Service

With this service, almost all products of our catalogue, but also one's own antibodies or those acquired from other manufacturers, can be manufactured to customer specifications, including configuration, conjugation, and quantities.

- Production of large quantities
- Conjugation of customer's own antibodies and multicolored cocktails
- All products also available as DURAClone
- Long shelf-life at RT, ideal for clinical research trials and multicenter studies



## RESOURCE\* - Contract Manufacturing Services

Beckman Coulter manufactures the components for your specific test reagents under GMP conditions, according to your specifications.



## Integrated L&L# solution for Immunophenotyping and analysis for lymphoid and myeloid neoplasms

ClearLLab 10C are in-vitro diagnostic tests for qualitative identification of cell populations with multiparameter Immunophenotyping using Navios and Navios EX flow cytometers.

- Ready-to-use ClearLLab CE-IVD 10-color panel
- Process control (normal/abnormal)
- 500-page case study book
- Simple analysis with Kaluza C analysis software

## Software Solutions

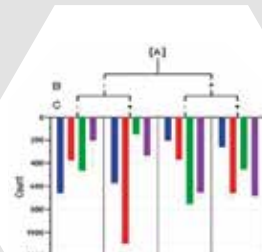
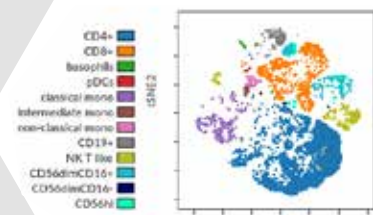
If you are looking for clinical analysis software to cover your routine data analysis, or for a more advanced solution for your cytometry research, we have the right solution for you.



Cloud-based-Cytobank\*\* software for data analysis enables comprehensive visualization and analysis of single-cell data with no need for coding knowledge:

- Integrated algorithms for dimensionality reduction, unsupervised clustering and biomarker discovery
- Built-in statistical tools
- Automated gating option

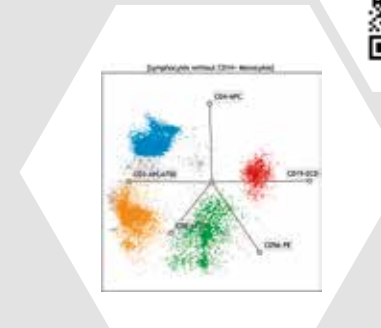
VISNE



## Kaluza C - Clinical Analysis Software

IVD-certified analytical software that is geared towards the unique needs and challenges of the clinical flow cytometry laboratory. Kaluza C provides features that streamline the clinical QC reporting requirements and address standardization issues in flow cytometry. At the same time it provides the power to process multicolor files of up to 20 million events in real time.

- Integration with Laboratory Information Systems (LIS)
- Traceability through user management
- Specialized QC Report generation functions
- It is vendor independent and standard based (as can be proven by the support of the FCS standard, up through version 3.1)



\* For CMS/RESOURCE reagents, the customer is the legal manufacturer of the product. The customer provides the formulation of the reagent combination and bears responsibility for any legal or regulatory requirements for the finished product including validation, product label content, intended use claims and regulatory approvals or clearances based on the product's final use.

\*\* For Research Use Only. Not for use in diagnostic procedures. \*\* For lymphoma this refers to Non-Hodgkin's lymphoma only.

## Vi-CELL BLU Cell Viability Analyzer

The Vi-CELL BLU is a fully automated and fast solution for your sample processing, cell viability analysis and cell counting by automating trypan blue method. The instrument offers enhanced benefits and supports you with reliable data when making decisions for your important projects.

- Increase throughput via fast processing time: 130 s
- Strong instrument-to-instrument correlation for optimal data comparison across labs and sites
- Flexible sample loading with 24-position carousel or 96-well plate
- Space savings
- Easy-to-use reagent kit
- Advanced automation option to introduce samples without human intervention



## Valita Titer Assay

High-throughput quantification of antibody titer. The Valita Titer assay is a rapid and easy method to determine IgG and can be integrated into a Biomek i-Series workstation for automation.

- Takes less than 15 minutes
- Available in 96- and 384-well plates
- Automation friendly
- Straight from culture to plates and results
- Simple assay, just add, mix and measure in a microplate reader compatible with fluorescence polarization
- Two detection ranges available: 2.5 - 100 mg/L or 100-2000 mg/L



## Vi-CELL MetaFLEX Bioanalyte Analyzer

Fast and reliable analysis of bioanalytes in cell culture media with low sample volumes. The Vi-CELL MetaFLEX is the optimal solution for monitoring metabolic activities in a matter of seconds.

- Only 65 µl sample volume required
- Quick results in only 35 seconds
- Parameters: pH, glucose, pO<sub>2</sub> and pCO<sub>2</sub>, lactate, potassium, calcium, sodium
- Can interface with data management system



## FERMENTATION

### BioLector XT Microbioreactor

Accelerate your bioprocess development with microbioreactors for high-throughput cultivations.

- Up to 48 simultaneous cultivations in a single microtiter plate
- Suitable for aerobic and anaerobic fed-batch processes thanks to continuous, well-individual pH and feeding control
- Customizable cultivation protocols, flexible combination of feeding and pH control strategies
- Cultivation of highly oxygen-demanding strains with gassing of up to 100 % oxygen
- Can be automated for complex experiment design (DoE), sampling and more



## Biomek i-Series Automated Workstation

Engineered to optimize walk-away time in mid- to high-throughput labs.

- Onboard cameras provide live broadcast and on-error video capture enabling remote diagnostics and expediting service response
- Rotating gripper with unique offset finger design optimizes access to high-density decks for more efficient workflows
- Large-volume, 1mL multichannel head with selective tip pipetting
- Multiple color- and pattern-coded status light bar instantly alerts you to the instrument's current mode



## Biomek i7 Automated Workstation

- Large deck capacity with 45 positions allows full walk-away capability for complex protocols
- Ultimate flexibility through combinations of multichannel head (96/384) and Span-8 with gripper
- Modular deck allows Third-party adaptation for changing workflows

## TIP-BASED LIQUID HANDLING

## Biomek i5 Automated Workstation

- 25 deck positions
- Compact instrument with large deck capacity allows full automation in small lab spaces
- On-deck device integrations for changing workflow needs
- Available configurations:
  - Multichannel head (96/384) with gripper
  - Span-8 with gripper

## Integrated Workstations

Integration capabilities of the Biomek i-Series go beyond on-deck integrations. The Biomek i-Series is designed to enable integration through the sides, rear and also beneath the instrument. We can transform Biomek liquid handlers into complete workflow solutions for your specific needs. From simple on-deck devices to complete robotic systems, we can develop custom, Biomek-based solutions that integrate third party tools such as barcode readers, microplate centrifuges, plate readers and imagers, plate transportation devices, plate washers, safety and biocontainment enclosures, temperature controlled storage, tube handling/capping/decapping devices and many other related devices.



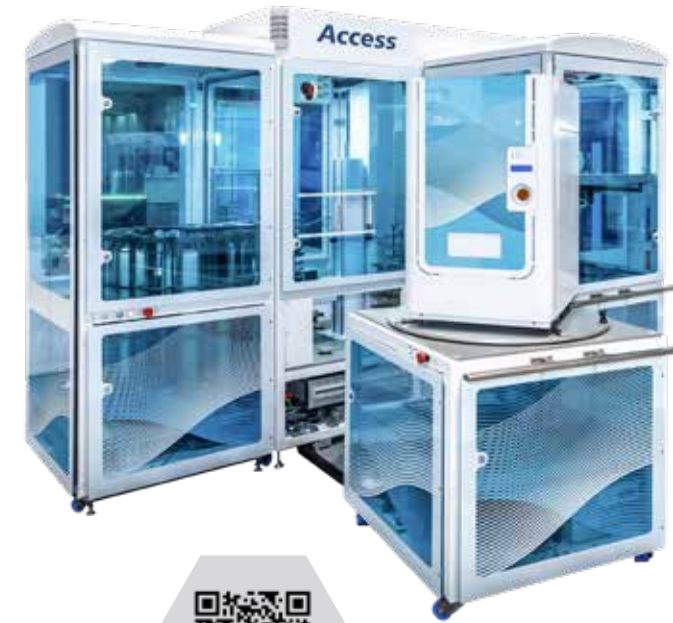
## ACOUSTIC DISPENSING

## LIQUID HANDLING

## Access - Robotic Systems

Ready-to-Go Robotic Systems for Echo Liquid Handlers

- Modular Design
- Flexible solutions for integration of 1-12 devices
- Environmental control options available



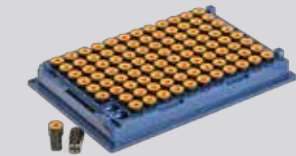
## Echo-Series - Acoustic Liquid Handler

Non-contact, ultra-low-volume liquid transfers through sound energy.

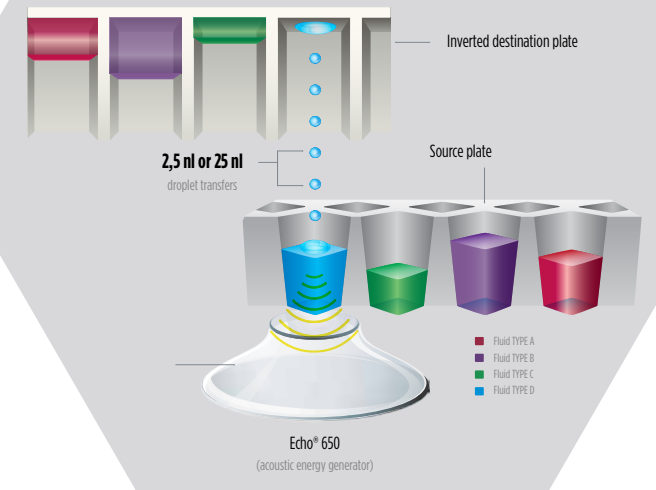
- Highly precise & fast - no risk of tip based cross contamination
- 2,5 nL - 2,5 µL dispensing volume
- Fast „any-well-to-any-well“-transfers for performing highly complex, multi-component assays and experiments
- Liquid transfer from acoustically compatible test tubes and microtiter plates in high throughput
- Integrates with Biomek i-Series or Access - Robotic Systems



**FluidX™ Acoustic Sample Tubes -**  
by Azena Life Sciences, transform workflows by enabling acoustic dispensing directly from tubes. The AcoustiX™ Tube preserves sample integrity by allowing samples to be accessed individually - ideal for applications that require subsets of large libraries to be accessed frequently.



**Acoustic Droplet Ejection -**  
The transducer is positioned below the source microplate well and emits focused sound energy repeatedly to the meniscus of the fluid to be transferred. A stream of 2.5 nL or 25 nL droplets (model dependent) is reliably ejected into a well of an inverted destination microplate.





## Biomek - Automation Control Software\*

Biomek software ensures that your samples are treated identically within every liquid transfer and in every run providing absolute confidence in your data. Embedded tools enable compliance with 21 CFR Part 11.

Biomek Deck Inspection (DeckOptix™)



# LIQUID HANDLING SOFTWARE

### Biomek Software

Method authoring with point-and-click interface:

- No advanced software expertise required
- Full control over liquid handling parameters
- Manage user accounts and permissions

### Biomek Method Launcher

Simplified, intuitive user-interface for operators:

- Execute only validated methods
- Avoid set-up errors by automated deck verification (DeckOptix™)
- Remote monitoring of real-time progress via Google Chrome Browser from any device

### DART 2.0 Software

DART 2.0 Software enables efficient management of data generated by your Biomek Workstation:

- Simplifies workflow data capture
- Gathers meta data and runtime information and makes that data available between methods and across multiple Biomeks
- Helps to transform data into information which drives research decisions
- Helps transform data into powerful information to ease research decisions

### SAMI Workstation EX Software

This flexible software package is designed to provide complete automation and process control supporting a wide variety of applications:

- Plans/schedules activities in a data-driven manner
- Optimizes sequence of workflow actions to ensure consistent timing
- Visually identifies bottlenecks and confirms workflow execution

### SAMI Process Management Software

This calendar-format tool enables the addition, monitoring and planning of SAMI EX methods and other events as part of user-defined processes:

- Controls long processes such as cell culture within a single, visual workflow management tool
- Lets you run multiple processes simultaneously
- Stores and reports on all labware locations, data and process information



SAMI Workstation EX Software

SAMI Process Management Software



## Biomek NGeniusS Next Gen Library Prep System

The Biomek NGeniusS System represents an evolutionary leap in NGS liquid-handling with its best-in-class performance, error-reduction technology, ease-of-use, reduced hands-on time, and flexibility.

- Batch sizes of 4 to 24 samples
- Dynamic DeckOptix system provides software-guided labware placement and confirmation
- Reagent Carousel reduces the need to manually transfer reagents and automates most reagent kits designed for manual use
- Complimentary Application Library is designed to evolve with your changing chemistry needs



# GENOMIC SOLUTIONS

## Biomek i5 Nucleic Acid Solutions

We've combined our expertise in reagent chemistry and automation, providing you three configurations to suit increasing workflow complexity. This offers the benefits of a plug-and-play system with the ability to add components later for enhanced functionality.

- Biomek i5 Cleanup Solution
- Biomek i5 Extraction Solution
- Biomek i5 Advanced Extraction Solution

Our reagent portfolio is powered by Solid Phase Reversible Immobilization (SPRI) technology, widely known for use in our AMPure XP reagent, which uses paramagnetic beads to selectively bind nucleic acids by type and size. SPRI enables our chemistries to deliver high-performance isolation, purification and clean-up protocols supporting applications such as qPCR, ddPCR, Sanger sequencing, next-generation sequencing (NGS) and microarrays.



# KITS

## DNA Isolation Kits

- Apostle MiniMax - cfDNA from plasma, serum, saliva & more
- DNAdvance gDNA from mammalian tissue and cells, saliva, Genotek Oragene and mouse tail
- GenFind v3 - gDNA from whole blood, serum, mammalian tissue, cell culture, saliva, buccal swab, FTA cards, bacteria and fresh or frozen tissue
- FormaPure XL Total - DNA and Total nucleic acid isolation from FFPE tissue
- CosMC Prep - Plasmid DNA from E. coli

## RNA Isolation Kits

- RNAdvance Viral / RNAdvance Viral XP
- RNA from saliva or swab transport media samples
- RNAdvance Blood - RNA from blood (PAXgene tubes), cells and tissue
- RNAdvance Cell v2 - RNA from mammalian cell cultures (<50K cells)
- RNAdvance Tissue - RNA from tissue and cells (50K to 1M cells)
- FormaPure XL RNA- RNA from FFPE tissues

## Purification & Clean-up Kits

- AMPure XP - Removal of primers, unincorporated dNTPs, primer dimers, salts and other contaminants
- CleanSEQ - Removal of Big Dye terminator and sequencing reaction contaminants
- RNAClean XP - Post-reaction cDNA and cRNA clean-up
- SPRIselect - Fragment size selection for NGS library construction



## LS 13 320 XR Particle Size Analyzer

Laser diffraction at the highest level for precise particle size measurement in suspensions, emulsions and powders. The PIDS-Technology and the extended measuring range provide a higher resolution and more accurate, reproducible results.

- Measuring range: 10 nm - 3,500 µm
- Detects down to 10 nm due to enhanced PIDS-Technology
- High-resolution analysis through 132 detectors
- Flexible dispersion modules for suspensions (e.g. UL module) or powders (Tornado)
- Simple software for data evaluation within a few clicks
- Features support 21 CFR 11 Compliance
- Sub-visible particle counting



## PARTICLE SIZE ANALYSIS

## Multisizer 4e Coulter Counter

The Coulter Principle enables particle sizing and counting with the highest resolution. Thanks to the latest Digital Pulse Processor Technology the Multisizer 4e provides a detailed insight into possible subpopulations of the particle distribution.

- Measuring range: 0.2 µm - 1,600 µm (diameter)
- Presentation of number, surface, and volume distribution (absolute, /ml, %)
- Dynamic range: 2 - 80 % of the capillary opening (Standard: 2 - 60 %)
- Features support 21 CFR 11 Compliance
- Independent of form, color, density, and optical properties



# PARTICLE ANALYSIS

## MET ONE 3400+ Portable Counter for Routine Environmental Monitoring

Designed for GMP Cleanroom routine environmental monitoring, the MET ONE 3400+ portable air particle counter allows users to upload their SOP maps onto the counter screen to create an interactive map for the technicians.

- Audit Trail
- Active Directory User Name and Password control
- Export secure electronic records straight from the counter via Wi-Fi or Ethernet



## CLEANROOM ENVIRONMENTAL MONITORING

## MET ONE Cleanroom monitoring system

Wall-mount air particle counters for cleanroom continuous monitoring systems.

- 0.5- and 5-micron counter
- Option for integral sampling pump
- 24V DC or 100-230V AC power options
- Ethernet, Wi-Fi, RS485 and 4-20mA options
- Built-in flow-rate monitor



## MET ONE HHPC+ -Series

Handheld particle counter for cleanrooms and cleanroom applications.

- Measuring range: 0.3 µm - 10 µm
- Throughput should be Sample volume of 2.83 l/min
- Available with 2, 3 or 6 channels



## HIAC 9703+ Light Obscuration Testing to USP<787>, <788>, <789> and EP2.9.19

Designed specifically for GMP injectable and infusion testing, the HIAC 9703+ PharmSpec software provides automatic pass/fail reporting to USP, EP, JP and KP.

- Audit Trail
- Active Directory User Name and Password control
- Database back-up and restore
- Secure electronic record export via Ethernet
- Test to USP<787> with just 0.2 mL of product

## LIQUID PARTICLE COUNTING

## WFI & PW WATER QUALITY



## PAT 700 Total Organic Carbon and Conductivity Analyzer

Designed specifically for Total Organic Carbon analysis (TOC) in Purified Water and Water for Injection. The PAT 700 reports TOC, Conductivity (uncompensated) and Temperature for on-line monitoring to USP<643>, <645> and EP 2.2.38 and 2.2.44.

- Reagent-free TOC analysis
- 12 month service interval
- Main and Standby, auto-switching UV lamps
- No negative TOC results
- Active Directory User Name and Password control
- Automatic secure electronic record and audit trail daily export via Ethernet
- System Suitability Test SOP routine built-in, with automated data entry and pass/fail calculation



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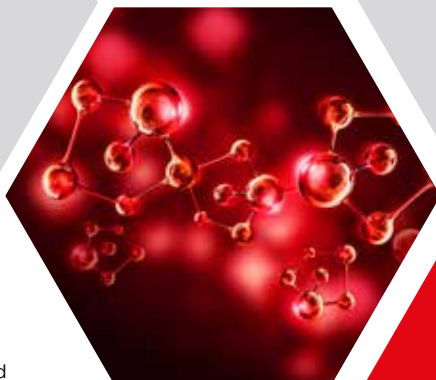
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