

Extracellular vesicles & Microbiology

Micro flow cytometer is in a **class of its own** for sub-micron biological particles, and leading the field in microparticles and exosomes research.

60nm sensitivity / 10nm resolution

Extreme Small Particle Applications

Sensitivity 100nm (latex beads)
 10nm resolution (latex beads)
 Up to 9 fluorescence detectors
 Up to 3 light scatter detectors
 Up to 4 lasers
 High speed (>100k events/sec)
Option: The sorting process in fluid

Size: W32 x H48 x D48cm

Weight: Approx. 30kg

Fluidics

Volumetric sample injection
 Adjustable sample aspiration volume, 100-400µl
 Selectable, precise sample flow rate from 1 to 150µl/min
 Sample concentrations up to 10^9 /ml
 Closed loop ultra-pure sheath fluid system or refillable sheath tank
 Fully automated cleaning cycles

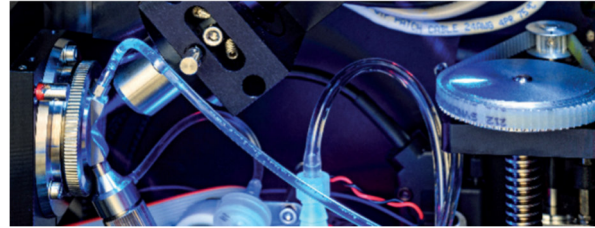
Electronics & Data Management

Novel noise reduction algorithm implemented in an Altera™ FPGA
 Fast electronics: >100,000 events/sec
 Threshold software selectable on all channels with 'AND' or 'OR' logic
 Pulse height and pulse area measurements on all channels
 Trigger width parameter
 RATIO parameter configurable for any 2 parameters
 Event time stamp for each particle
 26 bit data path
 Internal PC with Windows operating system

Optional external desktop or laptop PC (LAN connection)
 FCS 3.1 file format
 Software gating with AND, OR and NOT logic
 Work List option (csv format) for efficient comparison of data between samples
 Optional 'Autosampler' (96 well plate format)
 Optional refractive index compensated light scatter calibration module

Typical Applications

Microbiology
Cell microparticles
Virus
Nanoparticles
Suitable for a wide range of applications
(maximum particle size 100µm)



Extracellular Vesicles (Microparticles & Exosomes)

- ✓ Unprecedented sensitivity from two or three light scatter angle ranges
- ✓ Microvesicles are set to provide the next generation of diagnostic assays
 - Blood-based diagnostic tests for cancers
 - Vascular biology & thrombosis research
 - Therapeutic drug delivery
- ✓ Conventional flow cytometers rely on fluorescent probes to measure biological particles smaller than 400nm diameter, so data is poor when the fluorescence is dim and data inconsistent when the brightness of the fluorescent labels varies
- ✓ The Micro Flow Cytometer's extreme light scatter performance allows particles' light scatter characteristics to be used to discriminate particles of interest

Microbiology

- ✓ Rapid detection of bacteria in wide variety of samples
- ✓ Cell cycle analysis & genetics
- ✓ Cell viability
- ✓ Fluorescent proteins
- ✓ Virology

Kairos - cLDEP Particle Sorter Microfluidic particle sorting module

The first ever application of centripetal liquid dielectrophoretic (cLDEP) force to particle sorting: An electric field plucks chosen particles from the stream with Kairos. The method, invented by ApogeeFlow, requires no moving parts and yields far higher speed and precision than piezoelectric methods.

Flow Virometry

ApogeeFlow "Micro-PLUS" cytometers are used for **the development of vaccines and viral vector immunotherapies**. Optimised for small particle applications, it has the performance to measure individual virions like influenza, human immunodeficiency virus (HIV), murine leukemia virus, vesiculovirus (e.g. VSIV), rabies virus, herpes simplex virus (HSV), cytomegalovirus (CMV), vaccinia virus.

Platelets & Other Applications

Platelets

The Micro Flow Cytometer's high sensitivity is well suited to platelet applications, including:

platelet reactivity
platelet aggregates
circulating activated platelets
platelet-derived microparticles
calcium flux
bacterial contamination

Other Applications

The Micro Flow Cytometer is suitable for any analytical flow cytometry application where the particles of interest are less than 100µm, including:

Rapid detection of bacteria in wide variety of samples
Cell cycle analysis & genetics
Cell viability
Fluorescent proteins
Virology

Apogee Flow Systems

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