



ApogeeFlow 'Universal' Cytometer Technical Specifications

The *Universal* flow cytometer offers excellent performance in a wide range of applications.

Configuration options:

- Up to 4 lasers
- Up to 9 fluorescence colour detectors
- Microplate 'Autosampler'
- Particle sorting module
- GLP or GMP support ('GxP' option)



Sensitivity:	Light scatter sensitivity 200nm (polystyrene beads). Fluorescence sensitivity approximately 200 MESF. For any flow cytometer, the minimum measureable number of fluorescent molecules is dependent on the sample (e.g. unbound dye), choice of laser, choice of photomultiplier detector, optical filter choice and instrument settings.
Scatter Resolution:	40nm (polystyrene bead size resolution by light scatter)
Configurations:	Up to 9 fluorescence colour detectors 1 or 2 light scatter detectors Up to 4 lasers (3 spatially separate foci) Optional Autosampler (96 well plate format) Volumetric sample system gives absolute counts for every region of interest
Speed:	>100k events/sec Up to 50 samples per hour
Typical Applications:	All analytical flow cytometry applications. Cell sorting option is available.
Size:	W32 x H50 x D48cm (W50 x H50 x D48cm with AutoSampler option)
Weight:	20 to 35kg depending on configuration
Power consumption:	Less than 250 Watts Requires two standard wall sockets rated for at least 5 Amperes
Operating conditions:	10 to 30 degrees Centigrade operating environment No external cooling requirements.
Sample Fluidics:	Volumetric sample injection Adjustable sample aspiration volume, 50 to 400µl (+ option for up to 900ul) Software selectable sample flow rate from 0.75 to 150ul/min Sample concentrations up to 10 ⁹ per ml



Sheath Fluidics: Normal laboratory deionised water sheath fluid keeps running costs down.

Waste Fluidics: No special requirements.
Bleach may be used in waste tank if desired
Performance insensitive to waste tank height

Electronics & Data Management:

Fast electronics: >100,000 events/sec
Threshold software selectable on all channels with 'AND' or 'OR' logic
Pulse height & area measurements on all channels
Trigger width measurement
Event time stamp for each particle
22 bit data from a 26 bit data acquisition path
Internal PC with Windows 10, 64 bit operating system
Optional external desktop or laptop PC (LAN connection)

Optics:

Numerical Aperture 0.85
Up to 4 lasers may be installed (choose between 375nm, 405nm, 488nm, 532nm, 552nm, 635nm - contact ApogeeFlow for more options)
High sensitivity photomultiplier detectors (choice of sensitivities available)
Fluorescence filter blocks may be changed by operator without realignment
Custom fluorescence filter blocks are available on request.
Fluorescence optics capable of detecting from 400 to 800nm
Large (side) and small (forward) light scatter photomultiplier detectors

Optional medium angle light scatter detector
Optional deep red detector (#3491) to extend the fluorescence range up to 900nm
Optional extra-high sensitivity photomultipliers for the best possible fluorescence sensitivity

Software:

Apogee Histogram software with Work List sample management
FCS 3 file format
Histogram resolution software selectable from 32 to 65535 with zoom feature
Display modes: linear and/or logarithmic gain selection for each parameter
Unlimited number of histograms and cytograms
Amorphous regions of interest (gates)
Gating using AND, OR and NOT logic
RATIO parameter configurable for any 2 detectors
Autocycle module
Gain and subtraction settings adjustable during and after acquisition
Export of statistics from multiple files to Microsoft Excel
Export of histogram data in '.csv' format
Quick copy to clipboard feature for datagrams
Overlaying histograms for easy data comparison
Work List window for sample queuing and sample to sample data comparison
Automatic fluidic shutdown option
Automatic power off option
Optional mode of operation for GLP/GMP compliant laboratory use.

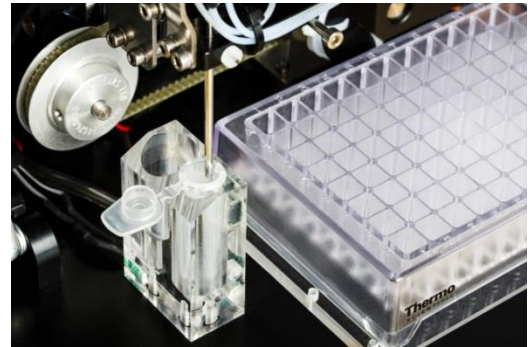
Not intended for human in vitro diagnostic (IVD) use.



Optional Microplate AutoSampler

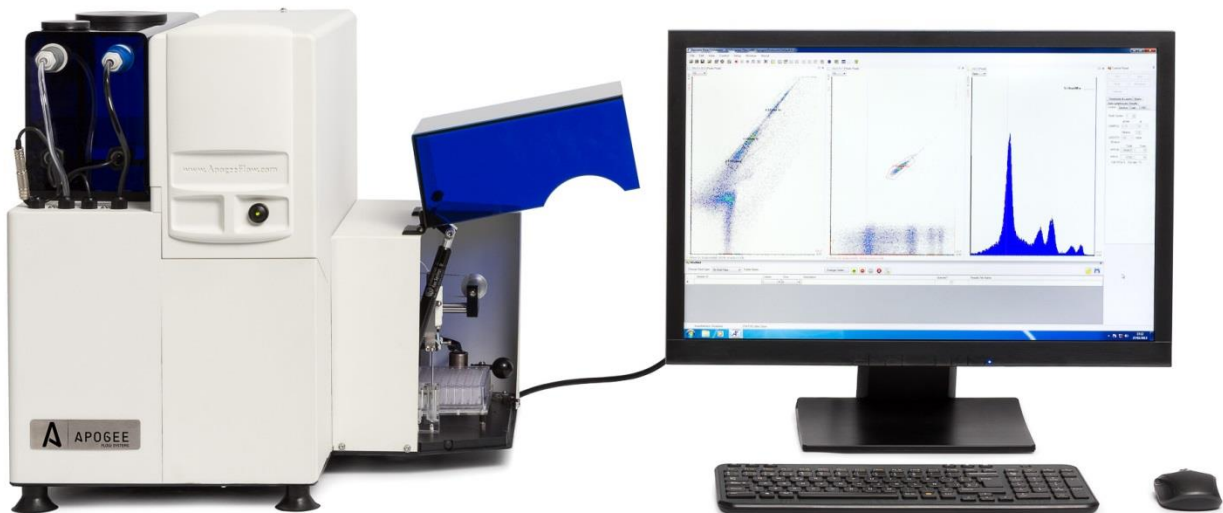
(Cat# 2259, not included unless explicitly stated)

ApogeeFlow cytometers can be fitted with an automatic sampling robot to acquire from 96 well microplates or racks of tubes. It is compatible with deep well or standard (250µl) plates. Autosampler operation is managed via the Histogram Software's Work List. A separate holder for individual microcentrifuge tubes allows the operator to run individual samples as well as plates/racks.



Features:

- 'Suck & spit' capability to re-suspend samples before aspiration from the well/tube
- Optional 'plate shake' agitator to re-suspend samples before aspiration from the well/tube
- Email notification when the Work List is finished or to notify the operator of a fault condition (e.g. empty sheath fluid tank).
- Automatic fluidic shut-down and power off option when the Work List finishes.
- Up to 50 samples per hour.



- The Histogram Software offers a 'Work List' to manage the samples. In addition to the sample location, sample identifier and description, statistics columns may be added so that a table of results can be easily compiled. Results are saved in csv format.

