



Cytek Biosciences DxP Athena™ Flow Cytometry System

Built by Cytek from the ground up, the DxP Athena™ flow cytometry system incorporates Cytek's proven DxP technology enabling the capability to resolve dim populations in a multicolor format. Choose from configurations with up to 3 lasers and 13 fluorescent detectors. Each configuration offers consistent powerful performance to meet your application requirements at an affordable price.

DxP Athena benefits include:

- Intuitive software
- A small footprint
- High sensitivity and resolution for resolving dim populations
- Built-in maintenance capability
- Upgradeability
- Optional Cytek 96-Well Automated Micro-Sampler (AMS) and FlowKart™ Fluid Management System
- World-class Cytek Service

For more information, visit Cytek at www.cytekbio.com.

Optics

Excitation Optics

Optical platform

Allows up to 3 lasers. Fixed optical assembly with three spatially separated laser beams.

Lasers

407nm: 50mW

488nm: 45mW

637nm: 80mW

Beam geometry

Prismatic expander and achromatic spherical lens.

Optical Efficiency

Power loss at flow cell: <20% of specified laser power

Emission Optics

Optical coupling

Fused silica cuvette coupled to emission lens by refractive index matching optical gel for optimum collection efficiency.

Background rejection

Obscuration blade and slit for minimizing unwanted laser radiation at the detector.

Forward scatter detector and filter

High-performance solid-state silicon detector with 488nm bandpass filter.

Side scatter detector

Photomultiplier and 488nm bandpass filter.

Photomultiplier Tubes

High efficiency Tri-alkali Photomultipliers

Fluorescence detectors and filters

DxP Athena 13-color Configuration shown. Other configurations available.

BluFL1: 530/30 (FITC, Alexa Fluor® 488)

BluFL2: 575/30 (PE)

BluFL3: 615/25 (PE-Texas Red®)

BluFL4: 695/40 (PerCP-Cy5.5)

BluFL5: 780/60 (PE-Cy7)

RedFL1: 661/16 (APC)

RedFL2: 710/50 (Alexa Fluor® 700)

RedFL3: 780/60 (APC-Cy7)

VioFL1: 450/50 (Brilliant Violet™ 421)

VioFL2: 525/50 (Brilliant Violet™ 510)

VioFL3: 615/25 (Brilliant Violet™ 605)

VioFL4: 710/50 (Brilliant Violet™ 711)

VioFL5: 780/60 (Brilliant Violet™ 785)

Fluidics

Sample Flow Rates

Front panel keypad provides four modes:

Run, Standby, Prime, and Clean.

Three preset flow rates:

LO: 12 µL/min

MED: 35 µL/min

HI: 60 µL/min

Maintenance

Onboard CLEAN mode for monthly maintenance.

Standard Fluidic Reservoirs

One 4-L sheath container and one 4-L waste container provided.

DxP Technology Performance

Fluorescence Sensitivity

Molecules of Equivalent Fluorescence (MEFL), using Q&b Method*

Fluor	Min. Q	Max. b	**Typical R Value
FITC	0.007	1200	382
PE	0.05	1000	300
PerCP -Cy5.5	0.003	600	336
PE-CY7	0.001	2000	758
APC	0.015	500	161
APC-CY7	0.005	7500	1161
BV421	0.01	3750	818
BV510	0.01	1500	1261

*Q measures optical efficiency, b measures background, and R (resolution limit) measures the number of dye molecules required to resolve a dim population from noise

**Average R value across 4 systems. MEFL required to be 2 standard deviations above noise. Assumes no compensation applied.

Fluorescence Sensitivity Threshold

FITC: 50 molecules of equivalent soluble fluorochrome (MEFL-FITC)

PE: 30 molecules of equivalent soluble fluorochrome (MEFL-PE)

*FITC and PE measurements performed using SPHERO Rainbow Calibration Particle (RCP-30-5A)

Fluorescence Linearity

Delivers doublet/singlet ratio of 1.95–2.05 for CEN stained with PI and excited with the 488nm blue laser.

Forward and Side Scatter Sensitivity

Enables separation of fixed platelets from noise.

Forward and Side Scatter Resolution

Performance is optimized for resolving lymphocytes, monocytes, and granulocytes.

Side Scatter Resolution

Capable to resolve 0.5µm beads from noise

Fluorescence Resolution

18 bit 5 log decades

Data Acquisition Rate

7,500 events/s with beads.

Data Management

FlowJo™ Collector's Edition
7.5.110 or later

Our acquisition interface can be adapted to any application.

Real time spillover matrix for viewing live compensated data.

Acquisition templates include hardware, gate, spillover, layout and statistical settings.

Save workspaces and use during multiple acquisition sessions.

Cytek AMS software
version 1.0.4

Fast and Easy Setup

Experiment plate mapping, including stain names can be setup on stand alone computer and saved as a template for future use.

Block Inspector

Change the FlowJo Collector's Edition acquisition settings on a per block basis.

Well ID Stamping

Well ID in the file name confirms data file to Well ID relationship.

Workstation

Operating System
Windows® 7 32-Bit Professional

Processor
Intel Quad Core processor, 3.0 GHz

RAM
4GB (1 x 4GB), 16000 MHz DDR3

Hard Drive
500GB SATA 3.0Gb/s

DVD Drive
16x DVD+/- RW, SATA

Video Processor
HD Graphics GMA 4600

Monitor
24" LCD

Options

96-Well Auto-sampling

Cytek's automatic micro-sampler (AMS) can be mounted directly under the sample injection tube reducing dead volume and increasing throughput.

Auto-mode

Full 96-well plate in 40 minutes (15 sec. acquisition/well and 10 sec. wash/well) less than 1% carryover.

High throughput mode

Full 96-well plate in 15 minutes. (9 sec. acquisition/well) less than 3% carryover.

Installation Requirements

Dimensions (W x D x H)

Sensor module (without AMS)
55 x 52.4 x 57.8 cm
(21.7 x 20.6 x 22.8 in)

Weight
45.4 kg (100lbs)

Computer
48 x 41 x 58 cm (19 x 16 x 23 in)

Recommended workspace
(W x D x H)
180 x 91 x 132 cm
(71 x 36 x 52 in)

Room Requirements

Power
100-240V, 50/60 Hz, 2A max

Heat dissipation
450 watts with all solid-state lasers

Temperature
16–29°C (60–85°F)

Humidity
10% to 90% relative non-condensing

Air filtering
No excessive dust and smoke

Lighting
Optics and detectors shielded from room

Regulatory Status

For Research Use Only. Not for use in diagnostic or therapeutic procedures.