



BD FACSymphony™ A3 Cell Analyzer

Special Order Research Product

The BD FACSymphony™ A3 Cell Analyzer is a novel high-parameter system that leverages the inherent benefits of flow cytometry and enables the simultaneous measurement of up to 30 different characteristics of a single cell. The cell analyzer is manufactured as a Special Order Research Product and is highly customizable with up to five different lasers of chosen

wavelengths and power ratings, up to ten photomultiplier tubes (PMTs) per laser arranged in decagon arrays and with numerous filter combinations. BD FACSymphony™ Systems are also field upgradeable to support the addition of any new advances in technology.



Technical specifications

Optics

Excitation optics

Optics layout accommodates up to five lasers simultaneously

Select from 26 different lasers of varying power levels, ranging from 20 mW to 1,000 mW

Most common laser wavelengths available are 355 nm, 405 nm, 488-nm, 561 nm and 637 nm

Flow cell

Rectangular quartz cuvette: Internal cross-section, 430 x 180 µm

External quartz cuvette surfaces are anti-reflective coated for optimal transmission of laser light. Fixed optical assembly with spatially separated laser beams.

Emission optics

Optical coupling

Emitted light from the gel-coupled cuvette is delivered by fiber optics to the detector arrays. The optical pathways use signal reflection to maximize signal detection. Each detector array is equipped with appropriately matched optical filters for light collection.

Forward scatter detector

Photodiode with a 488/10 bandpass (BP) filter for the 488-nm laser

Side scatter detector

PMT with a 488/10 BP filter for the 488-nm laser

Fluorescence detectors

Flexible detector array technology enables user-defined detection configurations. Filters and mirrors are interchangeable.

Fluidics

Sample flow rates

Front-button panel provides three modes: RUN, STANDBY and PRIME.

Continuously adjustable flow rate, plus three preset flow rates:

LO: 12 µL/min

MED: 35 µL/min

HI: 60 µL/min

Fluidic reservoirs

Autoclavable 10-L sheath and waste containers are provided

Performance

Fluorescence sensitivity

May vary dependent on the combination of laser and filter selections

Fluorescence resolution

Coefficient of variation (CV)

PI: Area, <3.0%, full G⁰ /G¹ peak for PI-stained chicken erythrocyte nuclei (CEN)

Fluorescence linearity

Doublet/singlet ratio: PI-stained CEN: 1.95–2.05 (488-nm laser)

Forward and side scatter sensitivity

Sensitivity enables separation of fixed platelets from noise

Forward and side scatter resolution

Scatter performance is optimized for resolving lymphocytes, monocytes and granulocytes

Side scatter resolution

Scatter performance enables separation of 0.5-µm beads from noise

Acquisition rate

40,000 events/second with beads

Data management

Software

BD FACSDiva™ Software v9.1 or later

Workstation†

HP® Z2 G4 Mini Workstation

- Intel® Core™ i7-8700 processor
- 1-TB NVMe SSD
- 16-GB RAM
- Microsoft® Windows® 10 Enterprise
- 2019 LTSC (64-bit) OS

†Minimum configuration listed. Workstation may include upgraded specifications.

Options

BD® High-Throughput Sampler (HTS) Option

Increase lab productivity by utilizing this option to acquire samples from a 96- or 384-well microtiter plate.

Acquisition throughput

High-throughput mode: Less than 15 minutes per microtiter plate using 2 second acquisition

Standard mode: Less than 44 minutes using 10 second acquisition

Carryover

High-throughput mode: <0.5%

Standard mode: <0.75%

BD FACSTFlow™ Supply System

Automated fluidics system that includes a rolling cart and two 20-L Cubitainer® packages

Installation requirements

Instrument dimensions (W x D x H)

83.8 x 76.2 x 80 cm (33 x 30 x 31.5 in)

Weight

167.9 kg (379 lb)

Power

Operation at 100/115/230 VAC and 50 or 60 Hz

Temperature operating range

Between 19 and 26°C (66 and 79°F)

Operating humidity

10%–90% relative humidity (noncondensing)

Heat dissipation

2,701 BTU/hour

Electrical requirements

BD requires one dedicated circuit for the cytometer and the computer system (including printer), with a dedicated AC source not shared with any other equipment. The instrument will be powered from the line conditioner supplied by BD Biosciences.



Class 1 Laser Product.
For Research Use Only. Not for use in diagnostic or therapeutic procedures.

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