

# BD FACSDiscover™ A7 Cell Analyzer with BD SpectralFX™ Technology

Coming soon

## Pre-launch product information

### BD SpectralFX™ Technology

This technology combines full spectrum optics, next-gen QC, and system-aware spectral unmixing that manages spread by adapting to instrument performance and sample conditions in real-time.



## Technical Specifications

### Optics

#### Excitation optics

349 nm – nominal 30 mW  
405 nm – nominal 100 mW  
488 nm – nominal 100 mW  
561 nm – nominal 100 mW  
637 nm – nominal 100 mW

#### Optical platform

Fixed optical assembly configured up to 5 lasers.  
No operator alignment required.

#### Flow cell

The quartz cuvette flow cell is coupled to the fluorescence objective lens by a refractive index-matching gel for optimal light collection.

#### Beam geometry

Flat top laser beam profile.

#### 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. Cuvette coupled to lens with high numerical aperture (NA).

##### Scatter detectors

Blue laser: Forward scatter (FSC) / Side scatter (SSC-blue)  
Violet laser: Side scatter (SSC-violet)

#### Fluorescence detectors for spectral flow cytometry

Spectral arrays – 78 APD detectors paired with algorithmically optimized filter bandwidths covering full spectrum:

UV 349nm laser – 22 UV detectors, covering 365nm – 860nm  
Violet 405nm laser – 20 Violet detectors, covering 410nm – 860nm  
Blue 488nm laser – 16 Blue detectors, covering 495nm – 860nm  
Y/G 561nm laser – 12 Yellow-green detectors, covering 570nm – 860nm  
Red 637nm laser – 8 Red detectors, covering 645nm – 860nm

### Common QC

Automated daily single tube QC with BD FACSDiscover™ Setup Beads

### Installation Requirements

#### Dimensions (H x W x D)

91.4 x 63.5 x 66 cm  
36 in W x 25 in D x 26 in H

#### Weight

<90 kg

#### Power

Total power: 1000 W  
VAC-Hz: 100 – 240 VAC (50/60 Hz)  
Circuit breaker: 10 A

#### Operating temperature range

Between 17.5°C (63.5°F) and 27.5°C (81.5°F) +/-2.5°C variation in the same day.

#### Operating humidity

40–60% relative humidity (non-condensing)



## Audible Noise

<65dB

## System

### Operating System

Microsoft® Windows® 10 IoT Enterprise LTSC (Long-term Servicing Channel) Version 21H2

### Monitor

32-in with 3840 x 2160 resolution (4K UHD)

### Memory

64 GB RAM

### Storage

OS SSD Drive: 1 TB - 2nd Drive: 1 TB

## Fluidics

### Flow cell

Quartz cuvette

### Sample acquisition rate\*

Up to 35K events/sec.

### Sample injection tube (SIT) flush

Each SIT flush cleans both the inside and outside of the sample line tip and sends flushed fluids to waste. This process occurs by default after a tube is removed from the manual port and following each sample acquisition via the integrated autoloader.

### Customization:

Manual port: additional SIT flushes through the FACSCorus™ Software UI.

Loader: option to choose between 0–6 SIT flushes to be performed automatically.

### Sample input

Manual port or auto-loader.

### Carryover\*

<0.1%

### Dead volume\*

Less than 1 µL for 96-well, round-bottom, standard and deep well plates and 12x75mm Falcon® Tubes.

Less than 5 µL for 2 mL polypropylene, 96-well, roundbottom, deep well plates.

*\*Based on characterization testing data, pending formal verification testing.*

Class 1 Laser Product.

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

BD FACSDiscover™ A7 Cell Analyzer has not yet been CE marked and cannot be made available until CE marking has been completed.

BD Life Sciences, Milpitas, CA 95035, U.S.

**bdbiosciences.com**

### Flow sensor

In sample line path; detects sample flow rate up to 120 µL/min.

### Flow rate

Low sample flow rate: 12 +/- 4 µL/min

Medium sample flow rate: 50µl/min ± 10ul/min

High sample flow rate: 100 +/- 10 µL/min

### Aerosol containment

No aerosols or hazardous material exits the system during normal operation, as tested using established protocols.

### Fluidic reservoirs

One sheath tank (10L) that contains sheath fluid (distilled water).

One waste tank (10L) that collects waste from the cytometer.

## Auto-Loader

Sample carrier: Standard 96-well plates, deep well 96-well plates, standard

384-well plate, 40-tube rack (12x75mm Falcon® Tubes). Thermally conductive custom 40-tube rack.

Sample agitation: Orbital mixing (up to 3000 rpm).

Sample temperature control: 4°C, 20°C, 37°C, room temperature.

## Software/Support

### Software

BD FACSCorus™ software.

Software guides researchers throughout the entire cell analysis process.

Software tools that support 21 CFR Part 11 compliance.

### Exported file types

FCS 3.2; CSV, CVW

### Offline data analysis

Supported by FlowJo™ Software, with seamless data integration from FACSCorus™ Software.

