BD Accuri® C6

Flow cytometry within reach.®
Flow Cytometry Within Reach

The BD Accuri® C6 is a personal flow cytometer that brings flow cytometry within reach by being easy to use, simple to maintain, and affordable.

The analytical power and versatility of today’s laser-based flow cytometry systems have unlocked the mysteries of cell biology and empowered entirely new fields of research. As a result, flow cytometry has become a staple of modern laboratories around the world. Innovations in ease of use reflected in the BD Accuri® C6 make these powerful capabilities more accessible to a new generation of flow cytometry users.

Many BD Accuri C6 customers can begin collecting and analyzing data with the help of a quick start guide. The intuitive interface of the software guides the user through workflows. The system takes in data digitally over a 7-decade dynamic range allowing researchers to easily re-analyze data after it is collected. This helps ensure that should data need to be re-examined to accommodate new research, the data is always available.

The compact footprint and portable weight of the BD Accuri C6 also make it a valuable personal use tool for experienced researchers who want a cytometer to be easily available when and where they need it.

The BD Accuri C6 flow cytometer is small enough to easily fit on a benchtop and can be placed in a laminar flow hood. It measures 11 x 14.75 x 16.5 inches (H x W x D) (27.9 x 37.5 x 41.9 cm) and weighs just 30 pounds (13.6 kg).
The system is equipped with a blue and a red laser, two light scatter detectors, and four fluorescence detectors with optical filters optimized for the detection of fluorochromes such as FITC, PE, PerCP, and APC. A compact optical design, fixed alignment, and pre-optimized detector settings make the system easier to use.

Optional filters and the Selectable Lasers Module expand the available fluorochrome combinations. During manufacture, laser and optical alignments are set and locked down. The result is that each BD Accuri C6 flow cytometer is manufactured with standardized fluorescence performance so that users do not need to adjust detector voltages.

Data is digitally collected over a 7-decade dynamic range (16 million channels of digital data), making all data available to users as needed. Gating strategies and fluorescence compensation values can be set before, during, or after data collection. After data is collected, the BD Accuri CFlow® software Zoom function allows visualization of data at any scale, so that users can precisely set gates and regions.

Should updates in the values be required later, or if optimization is needed, simply change the settings and re-analyze the data. This flexibility also allows data to be re-examined to accommodate new research findings.

The system has been put through intense testing to ensure the design can withstand rugged conditions. Provided the system is anchored, it can run samples even if the benchtop is in motion, for example, onboard a ship.

Pre-Optimized Detectors, No Voltage Adjustments

T-Cell Phenotyping, 4-Color Analysis
Thawed human peripheral blood mononuclear cells (PMBCs) were stained with PBS + 1 mg/mL BSA, and stained with appropriate antibody cocktails for 30 minutes, covered on ice. Direct monoclonal antibodies used were CD45RA FITC, CD4 PE, CD8 PE-Cy7, and CD3 APC. Analysis was performed on the BD Accuri C6.
A06 CD4, CD8, CD3
Gate: (CD3+ CD8+ in (P1 in all))

V1-L 99.8%
V1-R 0.2%

A06 CD4, CD8, CD3
Gate: (CD3+ CD4+ in (P1 in all))

V1-L 99.7%
V1-R 0.3%

A07 CD45, CD4, CD8, CD3
Gate: (CD3+ CD8+ in (P1 in all))

V1-L 15.5%
V1-R 84.5%
Sample Flexibility with Optional Walkaway Sample Loading

A unique low-pressure pumping system drives the fluidics. A sheath-focused core enables event rates of up to 10,000 events per second and a sample concentration of over $5 \times 10^4$ cells per mL. In addition, the system derives sample volume and can calculate absolute counts or sample concentration per microliter.

The non-pressurized system supports any brand of 12 x 75-mm (or smaller) sample tubes, including microcentrifuge tubes and tubes made of polypropylene or polystyrene. The BD Accuri C6 flow cytometer simplifies system maintenance with automatic cleaning cycles on instrument shutdown. The system can employ laboratory-grade water for sheath fluid, reducing operating costs.

For walkaway convenience, the optional BD Accuri CSampler® accessory (CSampler) offers reliable and easy-to-use automation. The system supports 48- and 96-well plates and deep-well plates, and is also supplied with a 24-tube rack for standard 12 x 75-mm tubes. They are processed directly in the BD Accuri C6 flow cytometer, saving time. The CSampler adds minimal footprint to the BD Accuri C6 flow cytometer, about three feet square for the pair, keeping the benchtop free for other uses.

Sample figure creation using BD Accuri CFlow software
Embryonal carcinoma cell line 2102Ep was stained with antibodies corresponding the proteins indicated on the histograms. Data was collected on a BD Accuri C6 flow cytometer. Data show overlays of single-parameter plots after fluorescence compensation has been applied. Labeling on plots was added in presentation software after plots were dragged and dropped in from the BD Accuri CFlow file.
To streamline sample processing, the CSampler allows multiple collection settings to be applied to plate or tube runs. To process a sample immediately, a run can be paused using the Interrupt function. When the priority operation is complete, the original plate can be returned to the CSampler to resume the original run. Easy-to-read software messages keep users informed of system status.
BD Accuri CFlow software has an intuitive user interface that was developed based on hundreds of hours observing researchers using flow cytometers.

As a result, most flow cytometry users find it so easy to use, they are collecting and analyzing data in less than an hour. Software options and instrument controls are clearly visible from the software’s tabbed interface which enables access to the collection, analysis, and statistics functions.

Data is acquired from the Collect tab. You can create new plots, hide or delete plots, or copy and re-use plots from this tab. The software supports a full range of selection regions including rectangular, polygon, quadrant, horizontal, and vertical markers. Up to 96 samples can be collected in a single data grid.

**Intuitive Software—Master in Minutes**

**BD Accuri C6 detection of GFP expression in bacteria**

Two *E. coli* cultures, one wild type and the other transfected with a constitutive GFP-expressing plasmid, mixed in a 1:1 ratio.
The Analyze tab displays plots and samples in any combination. In the Analyze tab, users can create color histogram overlays, print multiple plots, and compare samples. Use the Zoom tool to magnify areas of data, instead of voltage adjustments to set the channel range viewed, to better visualize results.

Sample data can be customized in the Statistics tab. Data is displayed in a master table, and statistics can be easily copied and pasted into spreadsheets to facilitate reporting. To simplify creating presentations, plots can be imported into Microsoft® Office® applications using drag and drop. BD CFlow software supports live gating, event coloring, export of publication-quality, vector-scalable graphics, batch analysis, and the creation of PowerPoint® and Excel® files.

BD Accuri CFlow files can be exported in FCS 3.0 format for seamless importing of user data into flow cytometry analysis programs including FCS Express and FlowJo™.
Services and Support

BD Biosciences is fully committed to the success and satisfaction of its customers and offers a range of options for BD Accuri support.

Fast, Easy Installation
The BD Accuri C6 flow cytometer can be customer-installed within just an hour of taking it out of the box. A step-by-step quick start guide and online video simplify installation.

Preventative Maintenance
Preventative maintenance procedures should be performed every two months to change the sheath filter, pump tubing, and fluidic filters, and to clean the SIP.

Technical Application Support
In addition, our technical application support specialists are available to provide field- or phone-based assistance and advice. Expert in a diverse array of topics, technical application specialists are well equipped to address customer needs in both instrument and application support.

Training
If desired, optional hands-on training is available on the BD Accuri C6. The training combines flow cytometry theory and practical skills to operate the BD Accuri C6.