BD FACSDiva™ Flow Cytometry Software

Streamlines workflows from instrument setup through data analysis

Features

- Streamlines laboratory workflows in a multi-system environment by enabling users of BD platforms to use a single software application for acquisition and analysis

- Provides easy-to-use instrument setup and quality control (QC) when used with BD FACSDiva™ CS&T research beads

- Enables standardization across BD platforms for both inter and intrasite experiments with use of application settings

- Provides common feature sets that allow users to transition easily across BD platforms and from analysis to sorting applications

- Provides flexible data management tools for users to export data for use with FlowJo analysis software

BD FACSDiva™ software, one of the most widely used flow cytometry acquisition and analysis software applications, helps to expand flexibility and improve efficiency in today's integrated laboratory.

The software provides convenient and easy-to-use tools to simplify creation and management of samples and experiments. A wide array of analysis features provide laboratories that need a single software platform with efficient data management tools to simplify data storage and improve data organization. In addition, automated, flexible tools enable users to export data for downstream applications.

When used with BD FACSDiva™ CS&T research beads, the software provides a set of robust features that can be used to characterize, optimize, and set up BD Biosciences cell analyzers and sorters. System optimization can reduce QC time from an hour to minutes, and enable you to track instrument performance with Levey-Jennings plots. The software can also automatically adjust user-defined application settings to account for changes in the cytometer. Standardizing experiments by using application settings can ensure consistency of results over time and across multiple platforms.

Specifications	
Cytometers supported	BD FACSCanto™ platform, BD FACSAria™ platform, BD® LSR II, BD LSRFortessa™, BD LSRFortessa™ X-20, and BD FACSCelesta™ flow cytometers
Options supported	BD FACS™ Loader for the BD FACSCanto platform, BD® High Throughput Sampler for the BD FACSCanto platform, BD FACSCelesta, and BD LSR platforms, and BD FACS™ Accudrop for the BD FACSAria platform
Plates supported when using the High Throughput Sampler option	U, V, and flat-bottom 96-well plates, flat-bottom 384-well plates, Terasaki plates (BD FACSAria platform only)
Plot types	Histogram, 2D dot plot, 2D contour plot, 2D density plot
Scaling	Linear, log, biexponential
Auto gating	Autopolygon, autointerval, snap-to polygon, snap-to interval
Standard statistics	Minimum, maximum, geometric mean, mean, median, standard deviation, percent coefficient of variation, mode
Robust statistics	Robust standard deviation (rSD), robust percent coefficient of variation (rCV)
Export formats	JPG, TIFF, PNG, BMP, XML, CSV, PDF
Operating system	BD FACSDiva™ v9.0 or later: Microsoft® Windows® 10, 64-bit

Software features across platforms

In a single application, BD FACSDiva software provides common and easy-to-use features that simplify instrument use, experiment and sample management, and ease transition across BD instrument platforms, from cell analysis to sorting.
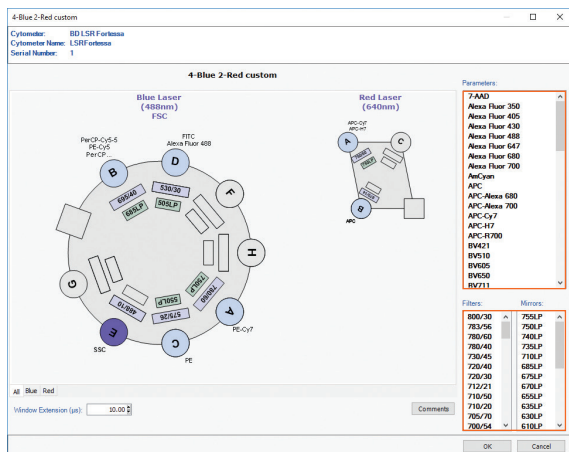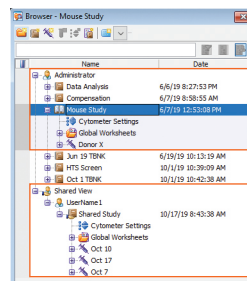

Click and drag a parameter name to a detector.

Click and drag a filter or mirror to the appropriate slot.

Graphical interface for changing cytometer configurations
Create configurations for multiple filter, mirror, and fluorophore combinations used in the laboratory. Only users with administrative access can create, modify, or delete configurations.


Experiments are listed by login name in hierarchical view.

Experiments can be shared

Hierarchical browser interface for creating and managing samples and experiments
Create new experiments based on an existing template, add new specimens and tubes to an experiment, and select a plate type for the experiment (with loader option). Share experiments as needed to support efficient research collaboration and data sharing.


Main workspace to create plots, statistics, and enter custom texts with global or normal worksheets.
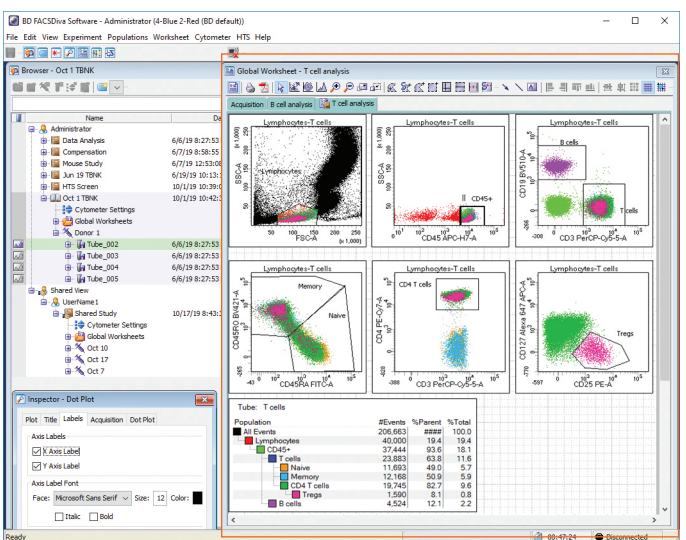
Common workspace for plots and statistics Organize your workspace with use of global and normal worksheets. Use global worksheets when creating plots and statistics for acquiring and recording data from a set of tubes. Use normal worksheets when displaying plots and statistics for multiple tubes on a single worksheet.

Standard experiment layout for single-point experiment design Use the Experiment Layout window to quickly add labels, keywords, and acquisition attributes to a single tube, multiple tubes, specimens, or the entire experiment.

Specify reagent labels, keywords, and acquisition criteria as needed.
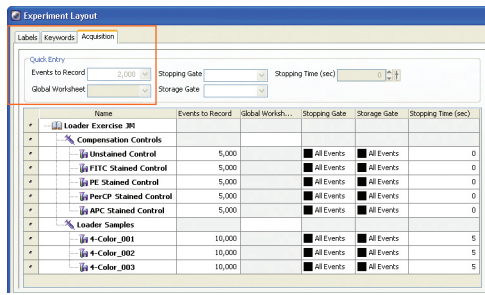
Object Inspector to quickly view and edit attributes For a single object or set of objects on the worksheet or browser
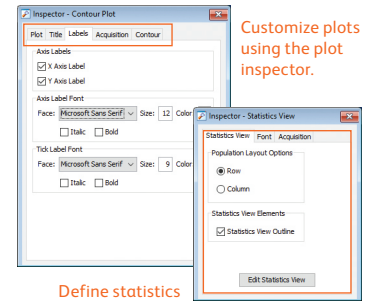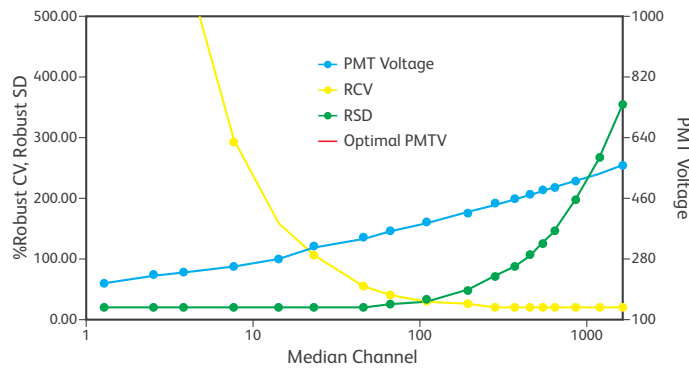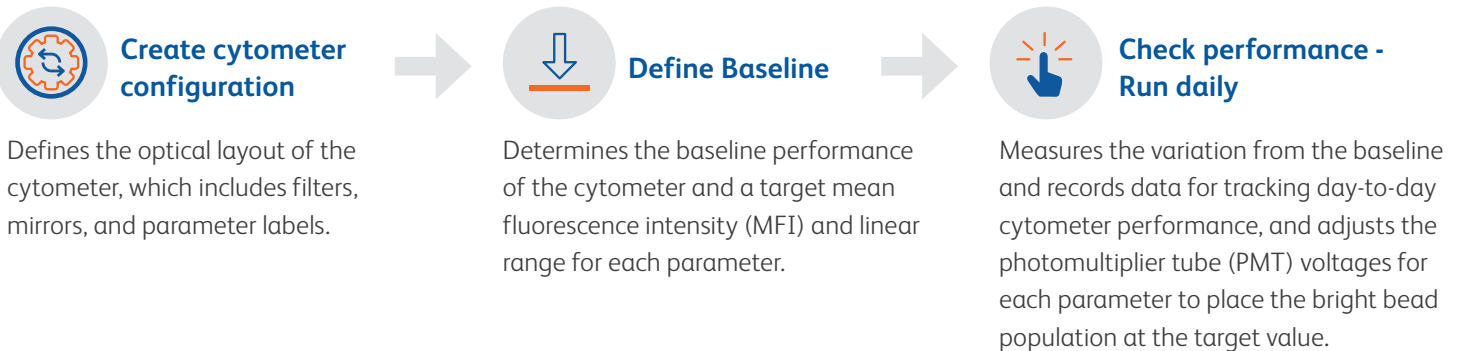
Customize plots using the plot inspector.

Define statistics views with the statistics inspector

CS&T

When used with BD FACSDiva CS&T research beads, the BD Cytometer Setup and Tracking (CS&T) feature provides baseline performance characterization of the cytometer, then adjusts and tracks daily cytometer performance to ensure consistent cytometer performance. This reduces QC time from an hour to minutes, and ensures reproducible and accurate acquisition data every day.

Cytometer setup and performance tracking workflow

Automates the characterization of fluorescence detectors and the entire optical configuration for each supported cytometer, as well as tracks day-to-day cytometer performance.

Create cytometer configuration

Defines the optical layout of the cytometer, which includes filters, mirrors, and parameter labels.

Define Baseline

Determines the baseline performance of the cytometer and a target mean fluorescence intensity (MFI) and linear range for each parameter.

Check performance - Run daily

Measures the variation from the baseline and records data for tracking day-to-day cytometer performance, and adjusts the photomultiplier tube (PMT) voltages for each parameter to place the bright bead population at the target value.

For each parameter, CS&T determines a baseline PMT voltage that places the dim bead at an MFI equal to 10 x standard deviation (SD).
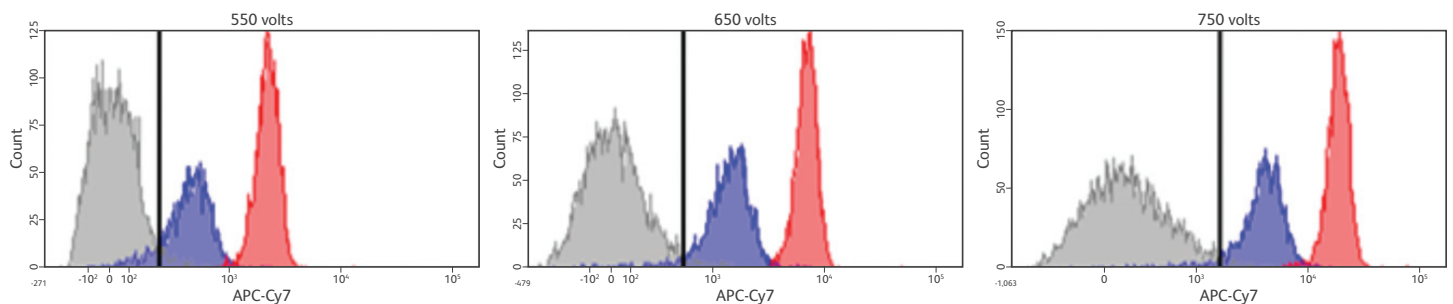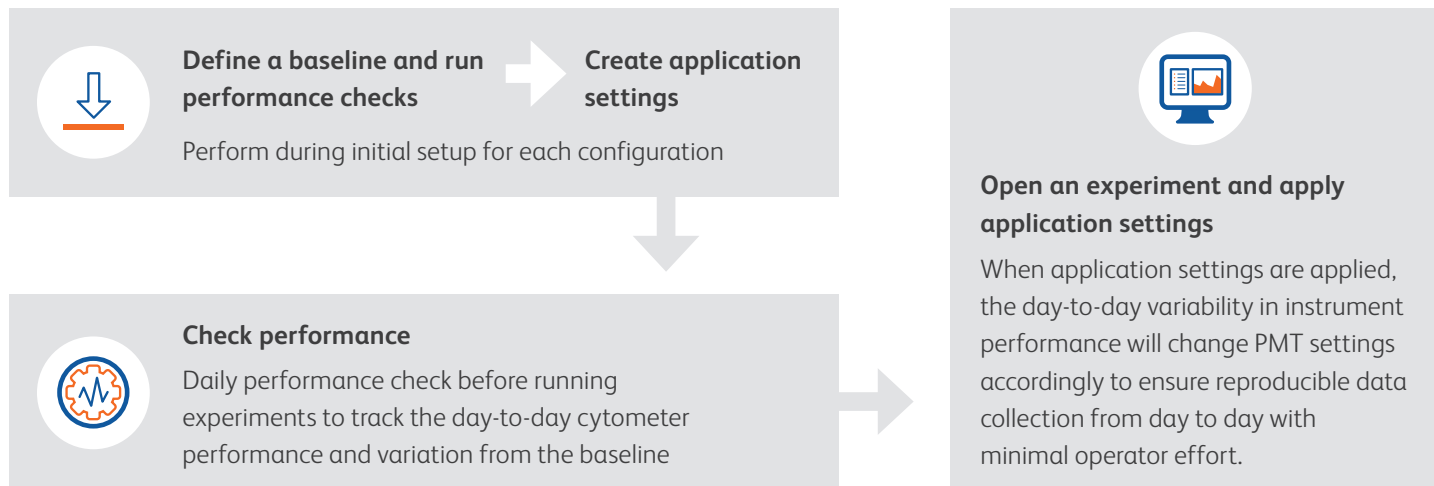
Correctly setting PMT voltage gain improves resolution, and reduces re-classification errors, yielding reliable results.

Application settings

BD FACSDiva software enables users to create and re-use their own unique settings for any application. These settings, called application settings, ensure that the data and analysis results are as reproducible as possible. Standardizing experiments by using application settings can ensure consistency of results over time and across multiple platforms. This helps take the guess work out of setting up the cytometer for specific application types for a range of users and results in reproducible data from day to day.

CS&T workflow with application settings

Define a baseline and run performance checks

Create application settings

Perform during initial setup for each configuration

Check performance

Daily performance check before running experiments to track the day-to-day cytometer performance and variation from the baseline

Open an experiment and apply application settings

When application settings are applied, the day-to-day variability in instrument performance will change PMT settings accordingly to ensure reproducible data collection from day to day with minimal operator effort.

Analysis and Data Management

BD FACSDiva software provides an extensive list of easy-to-use analysis features for laboratories that want a single software platform for acquisition and analysis. This includes:

- One-click snap-to gating tools
- Hierarchical gating
- The ability to copy and paste gates
- Histogram overlay
- Bi-exponential display
- User selectable plot configurations
- Batch analysis

Additional features include automated compensation, user log for user tracking, and data management tools to simplify data storage and improve organization of flow cytometer data. For laboratories that want to integrate BD FASDiva software for use with other third-party analysis software, BD FACSDiva software provides automated, flexible tools to export FCS data (FCS 2.0, 3.0. 3.1), experiments (XML format), and results (CSV, PDF) for external use.

For more information, visit
bdbiosciences.com/instruments/software/facsdiva.

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