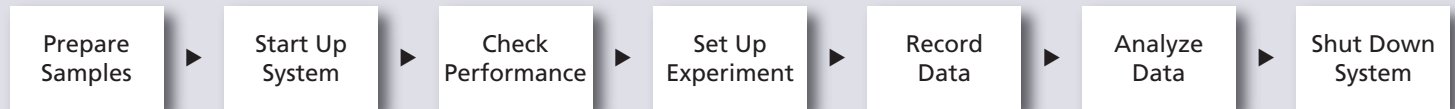


# BD FACSDiva Software Quick Reference Guide for BD FACSCanto Systems with Loader Option

This guide contains instructions for using BD FACSDiva™ software version 6 with BD FACSCanto™ and BD FACSCanto II systems equipped with the BD FACSTM Loader option. The workflow shown uses the BD FACSTM Sample Prep Assistant II (SPA II) and BD FACSTM Lyse Wash Assistant (LWA) to prepare lyse/wash samples. The workflow shown also uses application settings in BD FACSDiva software. Before starting your daily workflow, ensure that your lab's software administrator has performed all the necessary tasks to set up the BD FACS SPA II, LWA, and BD FACSDiva software for your use.

## Workflow Overview

The following figure shows the steps for the daily workflow using BD FACSDiva software.

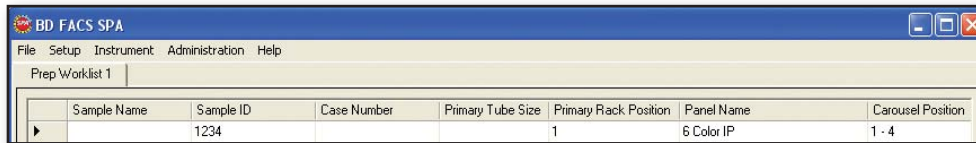


**BD**

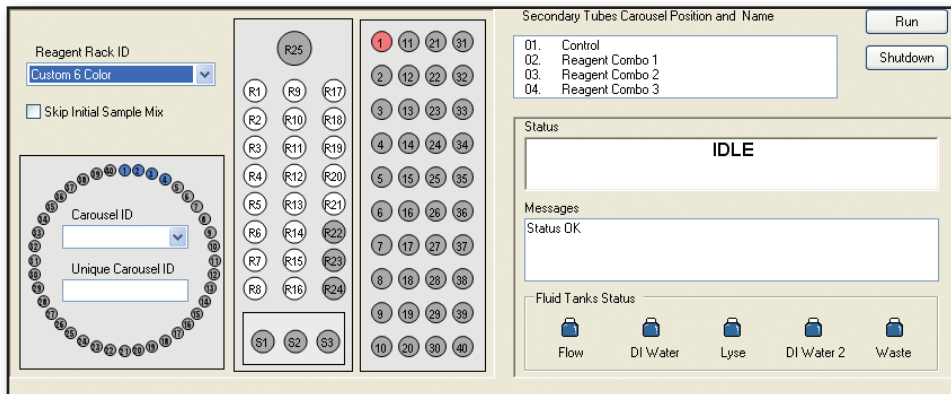
Helping all people  
live healthy lives

## Preparing Samples

- 1 Perform daily inspection and startup for the SPA II and startup for the LWA.
- 2 Set up the workload in the BD FACS SPA software.



- 3 Load the primary tube rack, secondary tubes into the carousel, and reagents into the reagent rack as specified in the software.



- 4 Close the safety cover and click Run to process samples on the SPA II.
- 5 Save and print the SPA II workload.
- 6 Transfer the SPA II workload to a location where it can later be imported into BD FACSDiva software.
- 7 Transfer the carousel from the SPA II to the LWA.
- 8 Run the appropriate LWA protocol.
- 9 Perform daily cleaning for the SPA II and LWA.
- 10 Shut down the SPA II and LWA.

## Starting Up the System

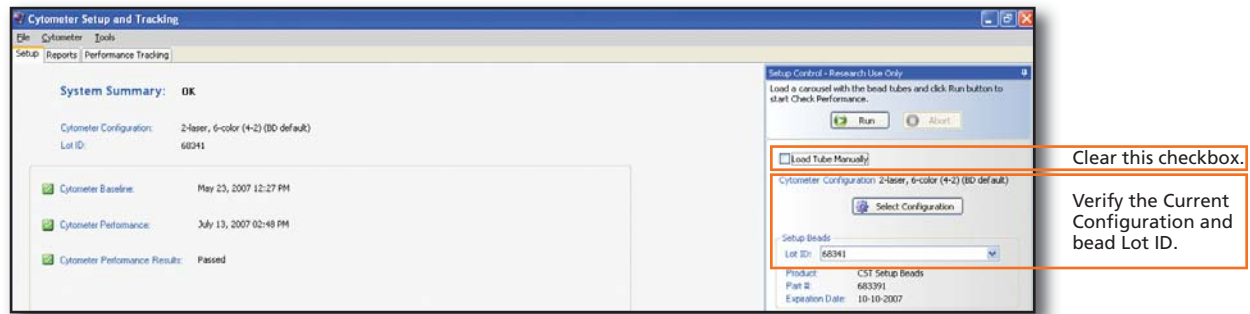
- 1 Turn on the cytometer main power.
- 2 Start up the computer, start BD FACSDiva software, and log in.
- 3 Check fluid levels in the Cytometer window.
- 4 Select Cytometer > Fluidics Startup if automatic cleaning is disabled.
- 5 Check the flow cell for air bubbles.
- 6 Check that laser warmup has finished, indicated by a ready status.



**TIP** Allow the lasers to warm up for 15 to 30 minutes before running samples on the cytometer to ensure laser stability and optimal power.

## Checking Cytometer Performance

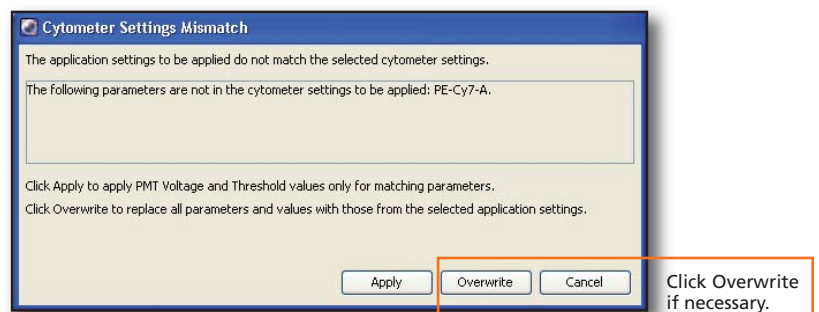
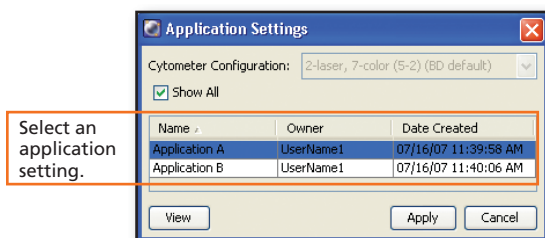
- 1 Select Cytometer > CST.



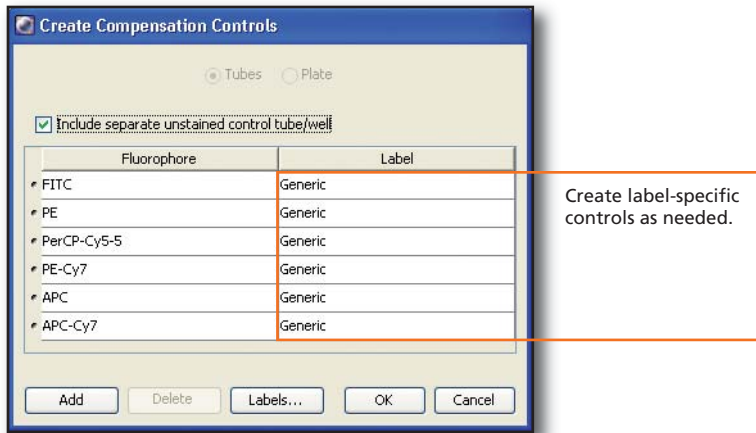
- 2 Place a tube of the BD™ Cytometer Setup and Tracking beads\* in position 1 on a carousel and run the beads.
- 3 View the Cytometer Performance Report.
- 4 Close the Cytometer Setup and Tracking window.

## Setting Up the Experiment

- 1 Select Edit > User Preferences and verify that selected preferences are appropriate.
- 2 Create an experiment in the Browser.
- 3 Right-click in the Browser. Select Application Settings > Apply.

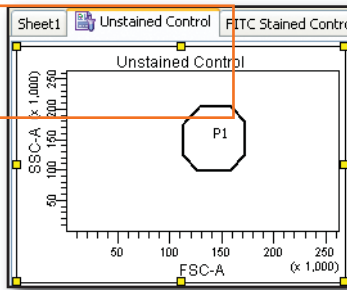


- Select Experiment > Compensation Setup > Create Compensation Controls.

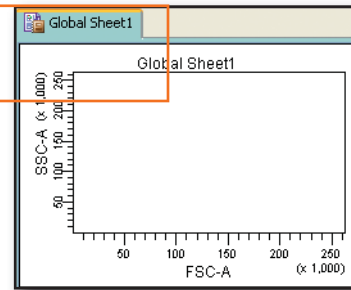


- Copy and paste plots from the Unstained Control normal worksheet to a Global Worksheet.

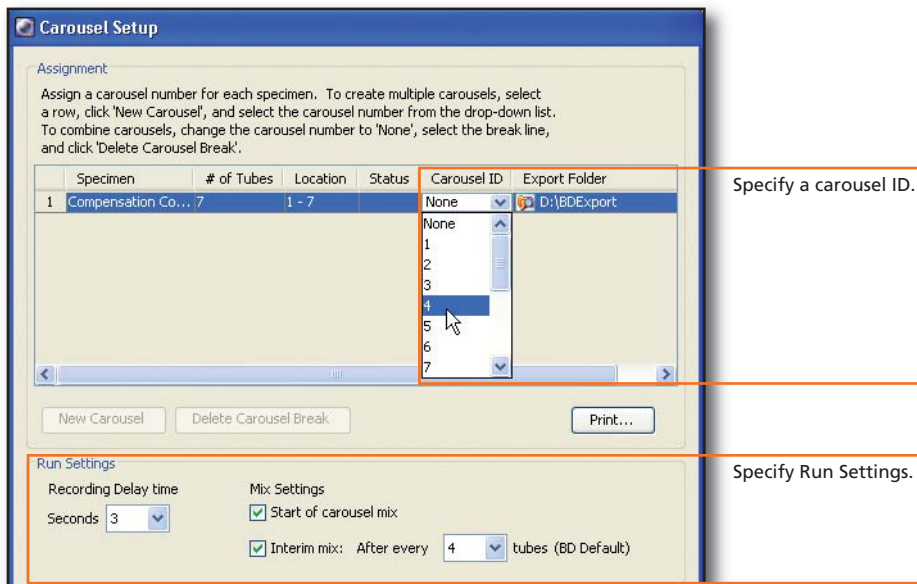
Select Edit > Select All and then Edit > Copy to copy plots from the normal worksheet.



Select Edit > Paste to paste the plots to a global worksheet.



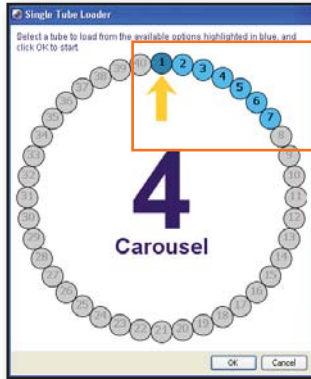
- Specify Carousel Setup settings.



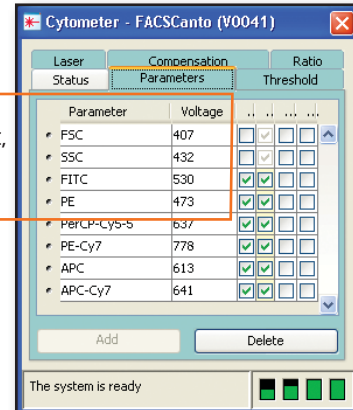
- Verify that the current tube pointer is set to the Unstained Control tube and a global worksheet is displayed.
- If using compensation beads, write down the FSC, SSC, and threshold values displayed in the Cytometer window.
- Place compensation control tubes in the carousel in the same order listed in the Browser, and install the carousel in the Loader.

- 10 Verify that the cytometer is configured for automatic loading and that settings are appropriate for the compensation controls.

Application settings are optimized for cellular samples. You might need to adjust settings for compensation controls prior to recording data for controls.

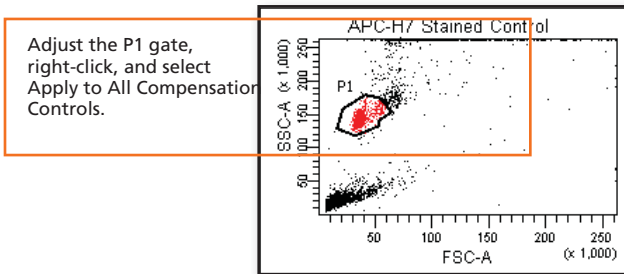


Select a tube to load and click Run Single Tube.

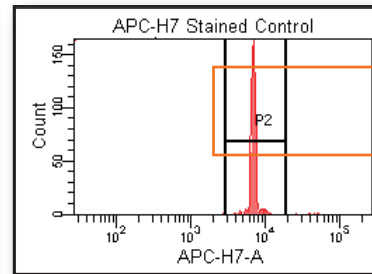


Verify that the FSC, SSC, and threshold settings are appropriate.

- 11 Click Unload and then click Run Carousel.
- 12 View the Carousel Report and check for any error messages.
- 13 View recorded data in the normal worksheets and gate the positive populations.

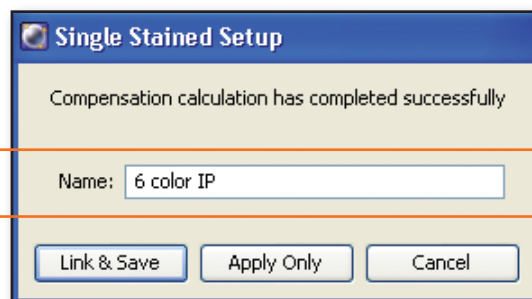


Adjust the P1 gate, right-click, and select Apply to All Compensation Controls.



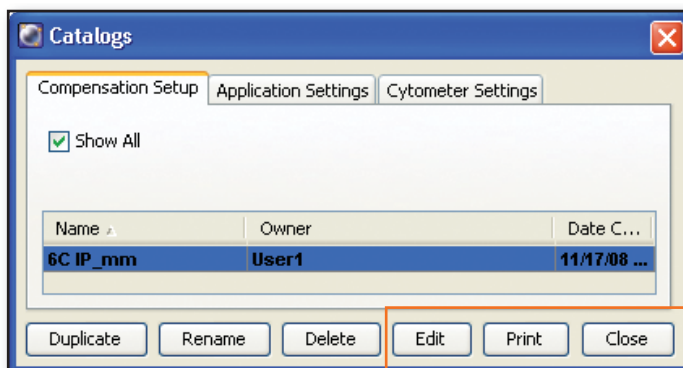
Adjust the P2 gates to fit the positive populations.

- 14 Select Experiment > Compensation Setup > Calculate Compensation.



Rename the compensation setup.

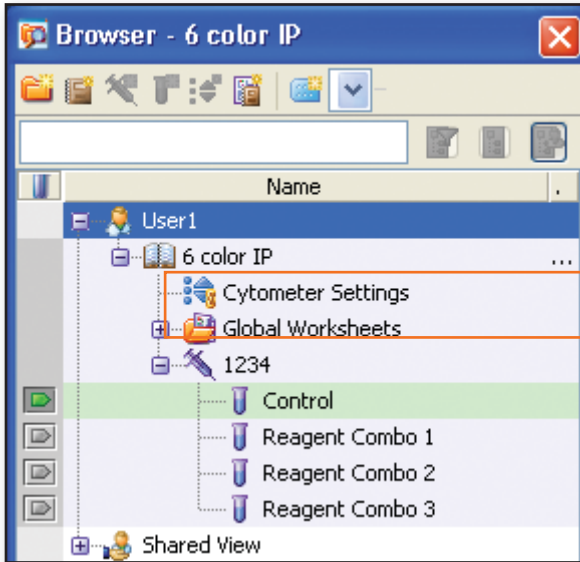
- 15 If needed, select Cytometer > Catalogs and return the FSC, SSC, and threshold settings to values appropriate for cellular samples.



Select the compensation setup and click Edit. Make changes, click Save, and close the window.

## Recording Specimen Data

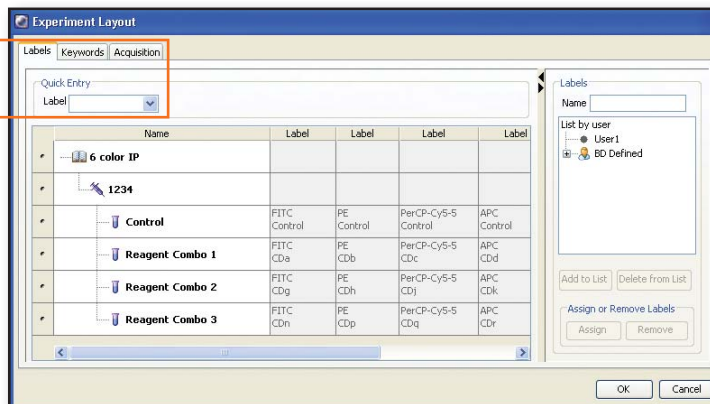
- 1 Create a new experiment by importing the SPA II worklist.
- 2 Link to appropriate cytometer settings.



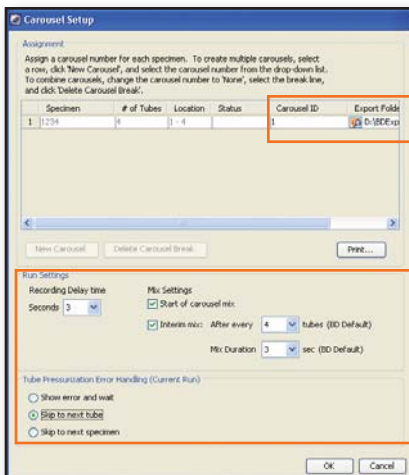
Right-click Cytometer Settings and select Link Setup.

- 3 Verify that selections and entries in the Experiment Layout are appropriate.

Verify parameter labels, keywords, and acquisition criteria are appropriate.

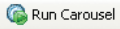


- 4 Verify Carousel Setup settings.



Verify Carousel ID.

Verify Run Settings and Tube Pressurization Error Handling settings.

- 5 Install the carousel on the Loader and click .
- 6 View the Carousel Report and check for any error messages.

## Analyzing Data

- 1 Verify that plots, gates, and statistics displayed in worksheets are appropriate for analysis of populations of interest.

**Worksheet for Reagent Combo 1 Tube**

Verify gates are set appropriately.

Verify appropriate statistics are displayed.

Population	#Events	%Parent	Mean	Mean	Mean
P1	6,837	33.2	52.19	3,956	9,405
G1	1,847	24.8	212	7,203	36,887
G2	79	1.2	3,853	17,115	18,190
G3	133	1.9	165	5,267	40
G4	4,027	60.7	8,402	1,617	62
G1-1	1,050	15.8	826	23,852	4,614
G2-1	4	0.1	4,573	29,871	19,240
G3-1	607	10.0	534	114	229
G4-1	4,919	74.1	9,095	92	11,654
G1-2	606	9.1	267	20,204	8,317
G2-2	1,075	16.2	426	188	83,088
G3-2	1,112	16.8	750	11,581	57
G4-2	3,844	57.9	8,927	100	84
G1-3	840	12.7	235	19,113	5,775
G2-3	96	0.7	1,722	786	30,654
G3-3	876	13.2	928	10,228	239
G4-3	4,877	73.0	8,879	132	11,419

Use the population hierarchy to verify parent/child relationships.

- 2 Do one of the following to print or export the results.
  - Select File > Print to print the active worksheet.
  - Select File > Export to export selected documents.
  - Right-click a specimen or experiment and select Batch Analysis (using a global worksheet).

**Batch Analysis**

Auto  
 Manual

View Time: 10

Output To Printer  
 Save as PDF  
 Add Report to PDF

Statistics  
 Freeze Biexponential Scales  
 Use Preferred Global Worksheet

PDF Filename: sheet\Batch\_Analysis\_05072007133515.pdf   View PDF

Export Filename: tistics\Batch\_Analysis\_05072007133515.csv

Status: 0%

Specify where to save PDF and exported statistics files

Select to print, save as a PDF, or export the statistics as needed

- 3 Review printouts and verify that the analysis is appropriate.

## Shutting Down the System

- 1 Verify that the flow rate in the Acquisition Dashboard is set to Medium or High.
- 2 Select Carousel > Clean.

**Clean with carousel tubes...**

Selections and Settings

Tubes	Time (min)
<input checked="" type="checkbox"/> Cleaning	5
<input checked="" type="checkbox"/> Rinse 1	5
<input type="checkbox"/> Rinse 2	5

Select cleaning tubes and time

- 3 Install the carousel with the appropriate cleaning tubes and perform the cleaning cycle.
- 4 Perform a fluidics shutdown.
- 5 Empty waste and refill fluids if prompted to do so.
- 6 Turn off the cytometer main power and shut down the computer.