

BD FACSCanto™ System

A proven platform for high reliability and quality results



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Built on more than 30 years of BD experience and leadership in flow cytometry and multicolor analysis, the BD FACSCanto™ flow cytometry system delivers reliable performance, accuracy, and ease-of-use for today's busy clinical laboratories.

Expands your best-in-class services

To further expand your lab's best-in-class clinical diagnostic services, the BD FACSCanto system has 10-color capability.* Optical enhancements and a 4-3-3 configuration deliver high sensitivity and resolution for accurate results.

Keeps operations at peak efficiency

To keep your lab operating at peak throughput and efficiency, the BD FACSCanto system automates many features to help streamline process and reduce hands-on time for operators. The BD FACST™ Loader (the Loader), for example, allows operators to walk away from the cytometer after the samples are introduced, to free time for other activities.

Features including quality control and single-tube instrument setup help operators rapidly learn how to run routine clinical applications to improve the reliability and consistency of results. To further simplify operation, BD FACSCanto™ clinical software automates setup, compensation analysis, and quality control for predefined clinical applications.

Innovations to improve care

The first BD FACSCanto was introduced in 2004. Since then, there have been many innovations in the product line reflecting our commitment to reach to ever higher standards. Today's BD FACSCanto system features a fixed-alignment flow cell in the fluidics system that minimizes startup time and improves reproducibility. To increase sensitivity and resolution for each color in a multicolor assay, a patented optical design maximizes signal detection.

Together these capabilities make the BD FACSCanto system one of the most powerful and reliable cell analyzers for busy, best-in-class clinical laboratories today.

*Seven- to ten-color assays are for Research Use Only.

Maximize multicolor performance

High sensitivity delivers more accurate care

To deliver timely, accurate information to clinicians and staff, the BD FACSCanto system features innovative designs for both the excitation and collection optics. This reduces excitation losses so that more information can be gained from each sample.

The optics of the BD FACSCanto system consist of an excitation source with three lasers: blue (488-nm, air-cooled, 20-mW solid state), red (640-nm, 40-mW solid state), and violet (405-nm, 30-mW solid state). Laser excitation optics illuminate cells in the sample, and collection optics direct light scatter and fluorescence signals through spectral filters to the detectors.

Fixed alignment to simplify operation

The excitation optics consist of multiple fixed-wavelength lasers, fiber optics up to the beam-shaping prisms, and achromatic focusing lenses that produce spatially separated beam spots in the flow cell. Each lens focuses the laser light into the gel-coupled cuvette flow cell. Since the optical pathway and the sample core stream are fixed, alignment is fixed from day to day and from experiment to experiment without user intervention.

Patented detector arrays maximize signal retention

The emission signals are transmitted from the flow cell to the detector arrays—an octagon for the blue laser and trigons for the red and violet laser signals. The octagon contains five PMTs and detects light from the 488-nm blue laser. A PMT in the octagon collects side scatter signals. The trigons contain three PMTs each and detect light from the 640-nm red and the 405-nm violet lasers.

Unique reflective design improves sensitivity

The octagon and trigons are BD-patented detector arrays that use serial light reflections to guide signals to their target detectors, resulting in highly efficient light collection and providing maximum signal retention at the detector level.

This serial reflective design further enhances instrument sensitivity by collecting the dimmest emission signals first, moving from the longest wavelengths (typically PE-CyTM7) to the shortest (FITC).

ACCURATE INFORMATION



Reduces hands-on time, improves consistency

Optimized workflow improves efficiency

Innovations in the fluidics system deliver optimal system performance. This includes the fixed flow cell design which minimizes startup time and improves reproducibility.

In the fluidics system the sample travels up the sample injection tube, and hydrodynamic focusing within the flow cell forces particles into a single-file stream where laser light intercepts the stream at the sample interrogation point. The unique flow cell design permits particles to flow through the center of the flow cell. Increasing the sample pressure increases the core diameter and the flow rate.

Pressurized fluidics regulate pressure from an easy-to-access standalone fluidics cart

A fluidics cart holds large fluid tanks necessary to operate and maintain the instrument. For sample acquisition, positive-pressure pumps in the fluidics cart send sheath fluid past a 0.2- μ m filter to a pressurized interior reservoir inside the instrument called the plenum. The plenum maintains a nearly constant fluid level and dampens pump pulsation using a dynamic feedback pressure control system designed to regulate pressure. As a result, sheath flow rate does not vary with the level of fluid in the sheath cubitainer, and the reservoir automatically removes small air bubbles from the sheath supply.

Automation simplifies daily procedures

Daily routine procedures, such as startup, shutdown, and routine cleaning cycles, are automated as a result of fluidic integration with BD FACSCanto clinical software. BD FACSTM shutdown solution prevents salt crystal buildup in fluidics lines and is supplemented with a preservative to prevent bacterial growth. During the instrument shutdown procedure, BD FACS shutdown solution replaces sheath fluid in all sample and sheath fluid lines.

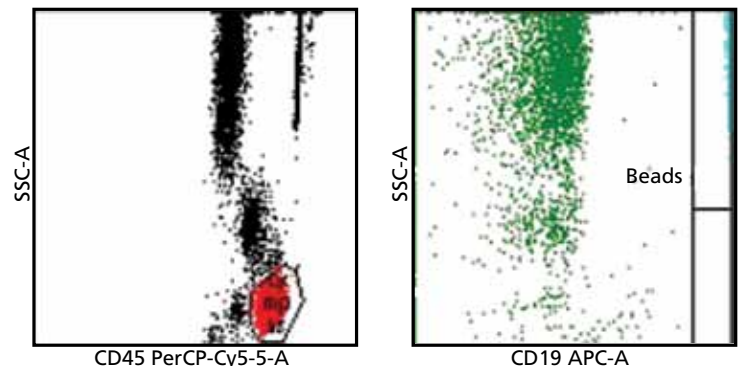


BD FACSCanto fluidics cart

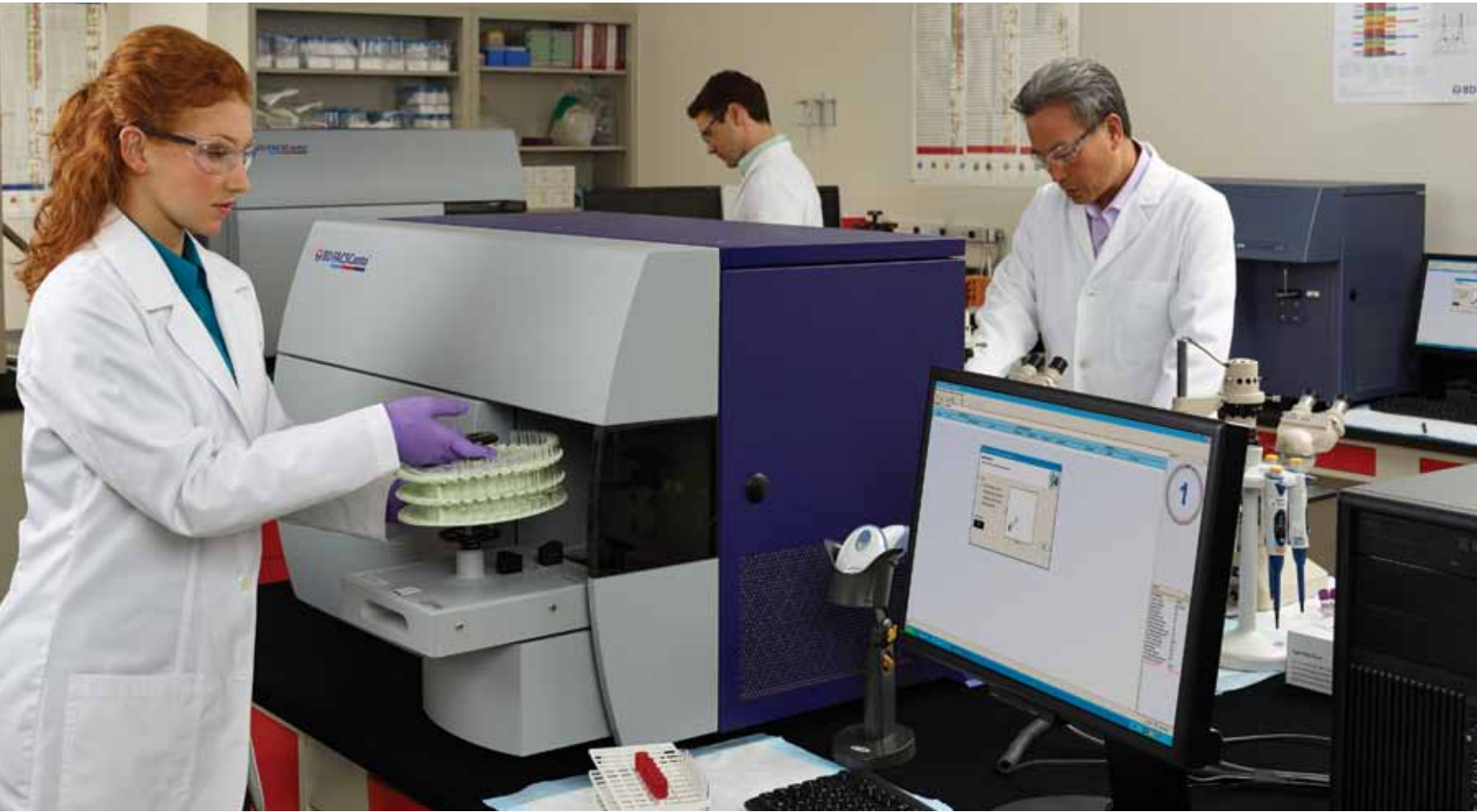
Monitoring HIV—identification and enumeration of lymphocyte subsets

The BD Multitest™ 6-color TBNK kit is the first and only 6-color In Vitro Diagnostic application to provide a complete immune panel in a single tube, saving valuable time and resources for sample processing.

CD3/CD16+CD56/CD45/CD4/CD19/CD8 TruC



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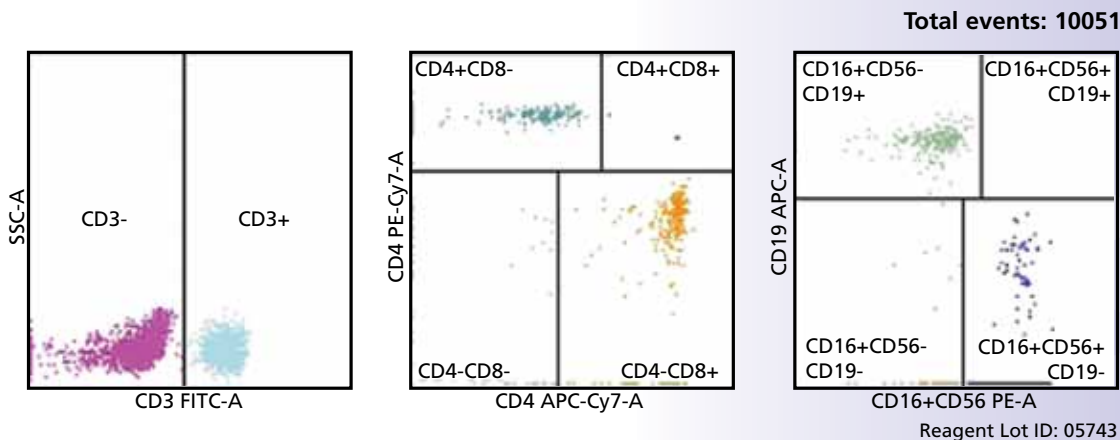
BD FACS Loader for walkaway operation

The Loader is an instrument option that allows walkaway sample introduction to further improve productivity. The Loader carousel accommodates up to forty 12 x 75-mm tubes and automatically loads them on the BD FACSCanto system without operator intervention.

Mounted directly on the cytometer, the device includes a drive system, a tube lifter mechanism, and sensors on the sliding drawer. The Loader cover safely protects technicians from moving parts during operation.

The Loader utilizes compressed air to allow a more reliable tube load as well as an intelligent tube guide mechanism that automatically sends an alert if a tube is not properly positioned for loading.

A unique ID and optically readable label are printed on each carousel for easy carousel identification. The Loader is operated using BD FACSCanto clinical software and BD FACSDiva™ software.



Parameter	Percent	Value/AbsCnt
Lymph Events		2878
Bead Events		1777
CD3+	47.32	789.38
CD3+CD8+	9.28	154.75
CD3+CD4+	34.19	570.30
CD3+CD4+CD8+	0.10	1.74
CD16+CD56+	41.80	697.23
CD19+	9.10	151.85
CD45+		1668.01
4/8 Ratio		3.69

Automation saves time

Data integration speeds results, improves reproducibility

Designed to address the needs of today's busy clinical lab, the BD FACSCanto system has a proven track record of reducing hands-on time and improving reliability of results. A high degree of automation and quality control helps save time, reduce cost, and improve reproducibility of results.

Setup and tracking by Levey-Jennings graphs for data integrity and reproducibility

Cytometer settings are tracked over time by Levey-Jennings graphs to monitor cytometer performance. Adjustments are made automatically to ensure consistent data integrity and reproducible results from day to day and experiment to experiment. Integrated quality control features further support data integrity by notifying operators if an assay fails predefined standards.

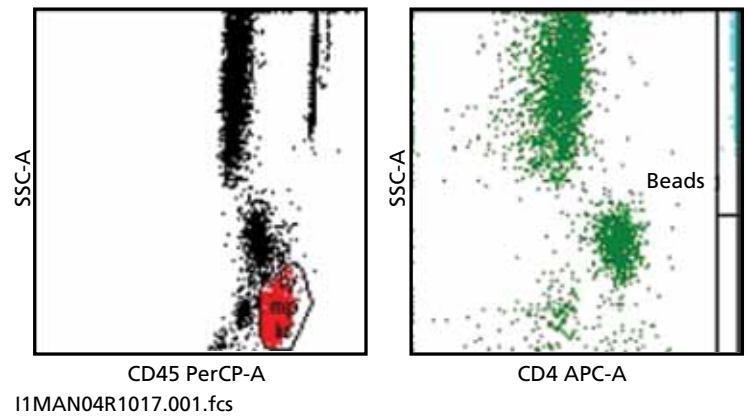
Application-specific software modules in software for consistency and standardization

BD FACSCanto clinical software includes specific application modules optimized for use with specific IVD reagent kits. The modules feature automated gating, calculations, and report generation to deliver a consistent, reproducible, and standardized analysis.

Integration with workflow software and laboratory information systems to improve data quality

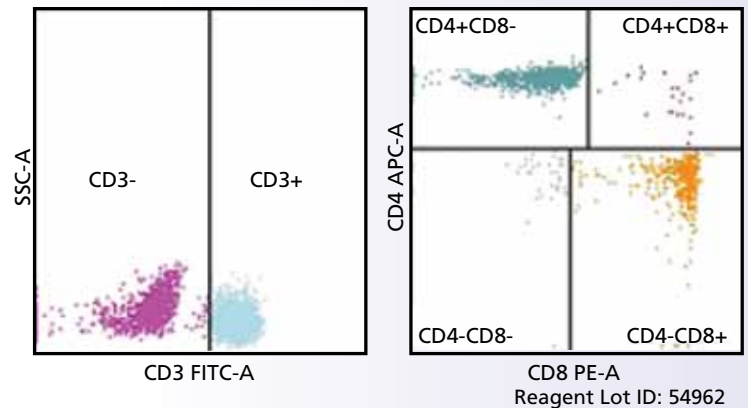
As a leading provider of tools for flow cytometry, BD Biosciences is committed to offering comprehensive, innovative software solutions, including third-party solutions that support application-specific customer requirements.

For example, optional BD FACSLink™ laboratory information system (LIS) software easily connects the BD FACSCanto system with an existing customer LIS to enable direct, bi-directional transfer of data. The software simplifies laboratory workflow by customizing data reporting, securing validation, and transferring data to reduce manual transcription. The solution automates the process from request to reporting to help reduce errors and improve data quality and laboratory productivity.



BD Multitest™ kits

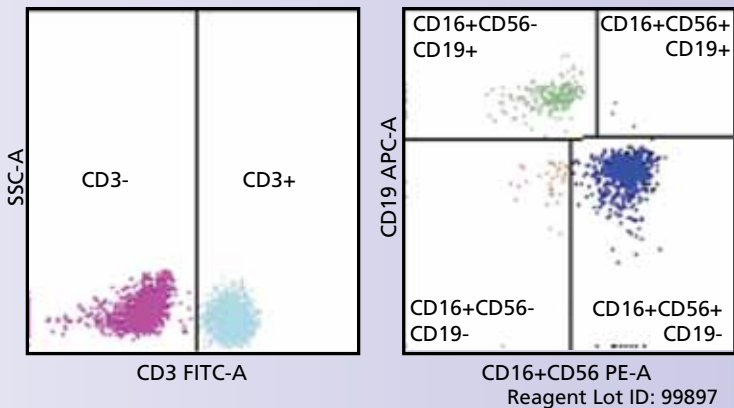
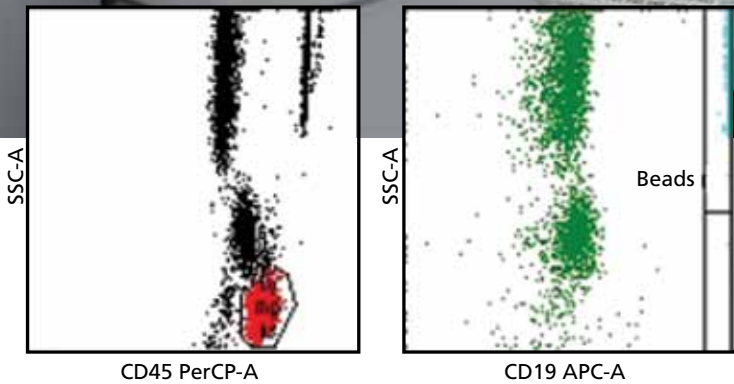
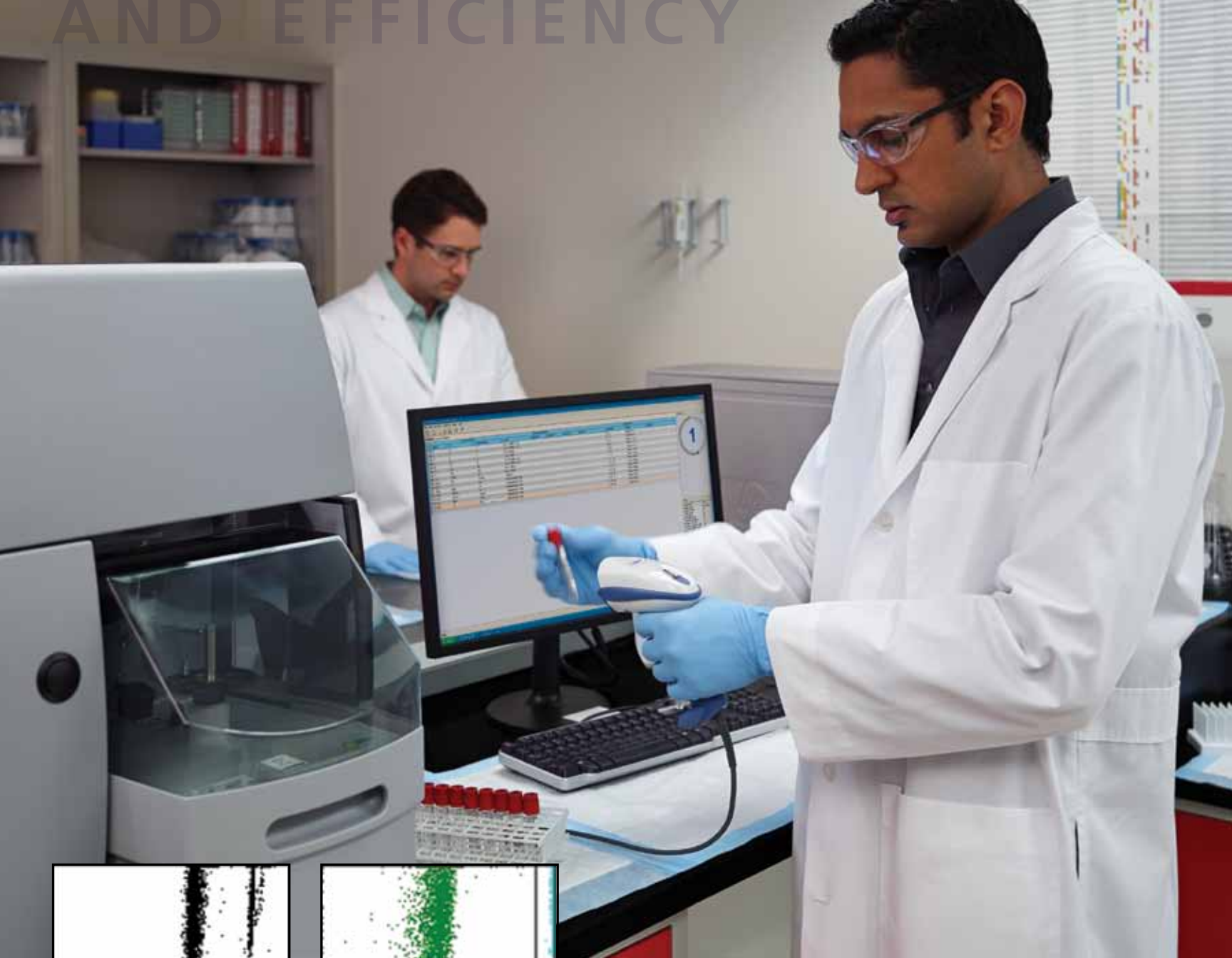
The BD Multitest™ 4-color kits can be used to determine the percentages and absolute counts of T lymphocyte subsets.



CD3/CD8/CD45/CD4 TruC

Total events: 10052

AND EFFICIENCY



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Parameter	Tube 1	Tube 2	Average
Lymph Events	3093	3313	3203
Bead Events	2703	2933	
CD3+ %Lymphs	63.76	63.78	63.77
CD3+ Abs Cnt	751.37	741.96	746.67
CD3+CD8+ %Lymphs	16.55		
CD3+CD8+ Abs Cnt	195.08		
CD3+CD4+ %Lymphs	46.75		
CD3+CD4+ Abs Cnt	550.96		
CD3+CD4+CD8+ %Lymphs	0.84		
CD3+CD4+CD8+ Abs Cnt	9.91		
CD45+ Abs Cnt	1178.50	1163.33	1170.92
4/8 Ratio	2.82		
CD16+CD56+ %Lymphs		27.35	
CD16+CD56+ Abs Cnt		318.13	
CD19+ %Lymphs		7.70	
CD19+ Abs Cnt		89.54	

CD3/CD16+CD56/CD45/CD19 TruC

Total events: 10044

Technical expertise from BD

Committed to customer success

BD Biosciences is fully committed to the success and satisfaction of its customers. Supporting flow cytometry applications for over 35 years, BD training, support, and field service teams are dedicated to helping customers achieve optimal instrument performance, ease of use, and streamlined workflow. With unmatched flow cytometry experience, this world-class service organization is available to help with your BD FACSCanto product installation, future upgrades, and application support.

Training

Hands-on training is included with each BD FACSCanto system. Training courses are held at BD training centers worldwide. BD flow cytometry training courses combine theory and practice to provide participants with the skills and experience they need to take full advantage of the capabilities of their BD FACSCanto system.

Technical application support

BD Biosciences technical application support specialists are available to provide field- or phone-based assistance and advice. Expert in all aspects of flow cytometry, BD technical application specialists are well equipped to address customer needs in both instrument and application support.

Field service

When instrument installation or service is required, a BD Biosciences Technical Field Service Engineer can be dispatched to the customer site. BD Biosciences field service engineers are located across the world. On-site service and maintenance agreements are available to provide long-term support for BD FACSCanto systems.



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Office locations are available on our websites.

BD flow cytometers are Class 1 Laser Products.

Unless otherwise noted, For In Vitro Diagnostic Use.

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