BD FACSDiscover™ S8 Cell Sorter
with BD CellView™ Image Technology
and BD SpectralFX™ Technology

Get deeper insights with real-time imaging,
spectral flow cytometry

Achieve breakthrough discoveries with image-enabled cell sorting and advanced spectral flow cytometry

The BD FACSDiscover™ S8 Cell Sorter expands the power of cell analysis and sorting to new dimensions by combining spectral flow cytometry with real-time spatial and morphological insights—empowering scientists to address previously impossible-to-answer questions.

Next Gen QC System
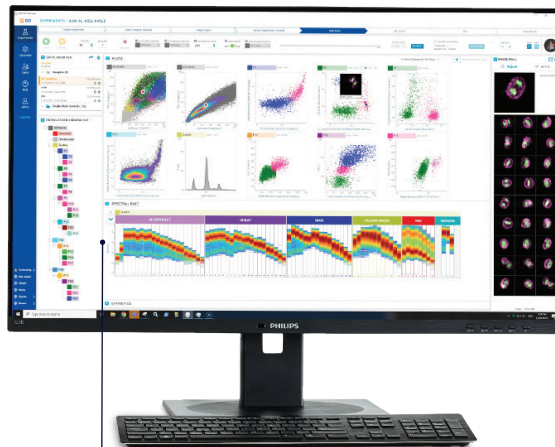Delivers pre-set gains and reduces setup complexity

BD CellView™ Image Technology
Expands the power of cell analysis and sorting by combining flow cytometry data with spatial and morphological insights

Trusted Partner
Supported by over 45 years of flow cytometry expertise

BD SpectralFX™ Technology
Expands panel size and flexibility with 78 fluorescent detectors across five lasers with algorithmically optimized filter bandwidths

Obtain insights on cell populations and characteristics that can be **visually confirmed in real time** during analysis and sorting

Enhance spectral flow cytometry with **spatial and morphological insights** to interrogate and sort cell types that previously could not be identified or isolated

Index flow and cell imaging data with the sort location to support downstream applications

Attain **high-dimensional analysis** with up to five lasers and 78 fluorescent detectors, six image detectors on the blue laser, FSC and SSC detectors
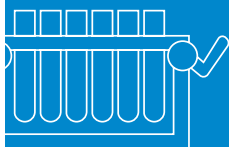
Flexible sorting: 6-way 5-mL sort, index sorting and additional format options including 96-well and 384-well plates and slides

Patented BD sorting technology features a **fixed-alignment gel-coupled cuvette** eliminating the need for operator to perform daily alignment and facilitating quick nozzle changes

Simplify your workflow with **built-in visual inspection capabilities, more flexible panel design, automated features and index sorting**, which correlates immunophenotyping, imaging and downstream assay results

Combine **image features with flow parameters** for subset classification for statistical analysis and sorting

Real-time image-enabled sorting

See what you sort. Sort what you see.

The BD FACSDiscover™ S8 Cell Sorter leverages BD CellView™ Image Technology, a novel high-speed imaging technology that facilitates analysis and sorting through real-time integration of image and flow data.
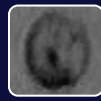
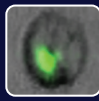## BD CellView™ Image Technology

IMAGING DETECTORS

Image detectors with fluorescent, scatter and light loss to visualize events in real time and at high speed
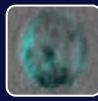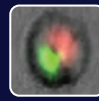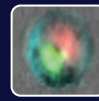
3-color fluorescence imaging

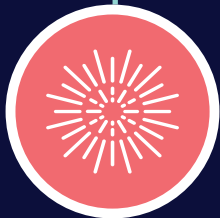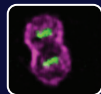| LL	LL CH1	LL CH2	LL CH3	LL CH1 CH3	LL CH1 CH2 CH3

- Light loss (LL)
- CH1: GFP (Golgi)
- CH2: Surface Marker
- CH3: DNA (DRAQ5™)

NEW INSIGHTS

New insights and image-based applications help to address previously impossible-to-answer questions
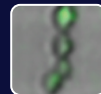
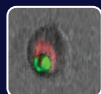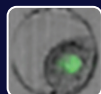Cell cycle | Cell synapse | Internalization | Label-free | Marine biology | Morphology
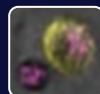
Phagocytosis | Plant biology | Polarization | Quality control | Tumor cell killing | Co-localization
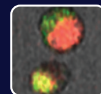
CELL MORPHOLOGY

Explore cell morphology with internal and external spatial characteristics
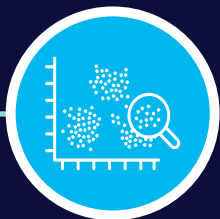
SAMPLE QC

Visualize and confirm images in real time to obtain sample data for flow cytometry and downstream assays

IMAGE FEATURES

Image features combined with traditional flow parameters open the door to new dimensions in single-cell analysis

Correlation

Delta center of mass

Diffusivity

Eccentricity

Max intensity

Radial moment
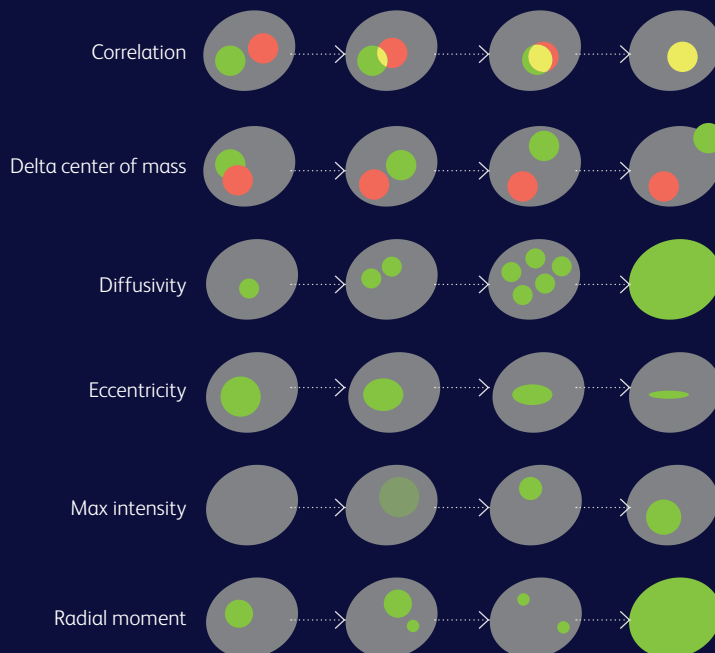
ADDITIONAL IMAGE FEATURES

Center of mass (X)
Center of mass (Y)
Forward scatter (FSC)
Light loss (blue)
Long moment
Short moment
Size
Side scatter (SSC)
Total intensity

Cell cycle analysis

Image feature analysis can provide insight into DNA distribution and morphology to differentiate the phases of the cell cycle.

Interphase	Prometaphase	Metaphase	Anaphase	Telophase
Sort product	Sort product	Sort product	Sort product	Sort product
40x microscopy	40x microscopy	40x microscopy	40x microscopy	40x microscopy
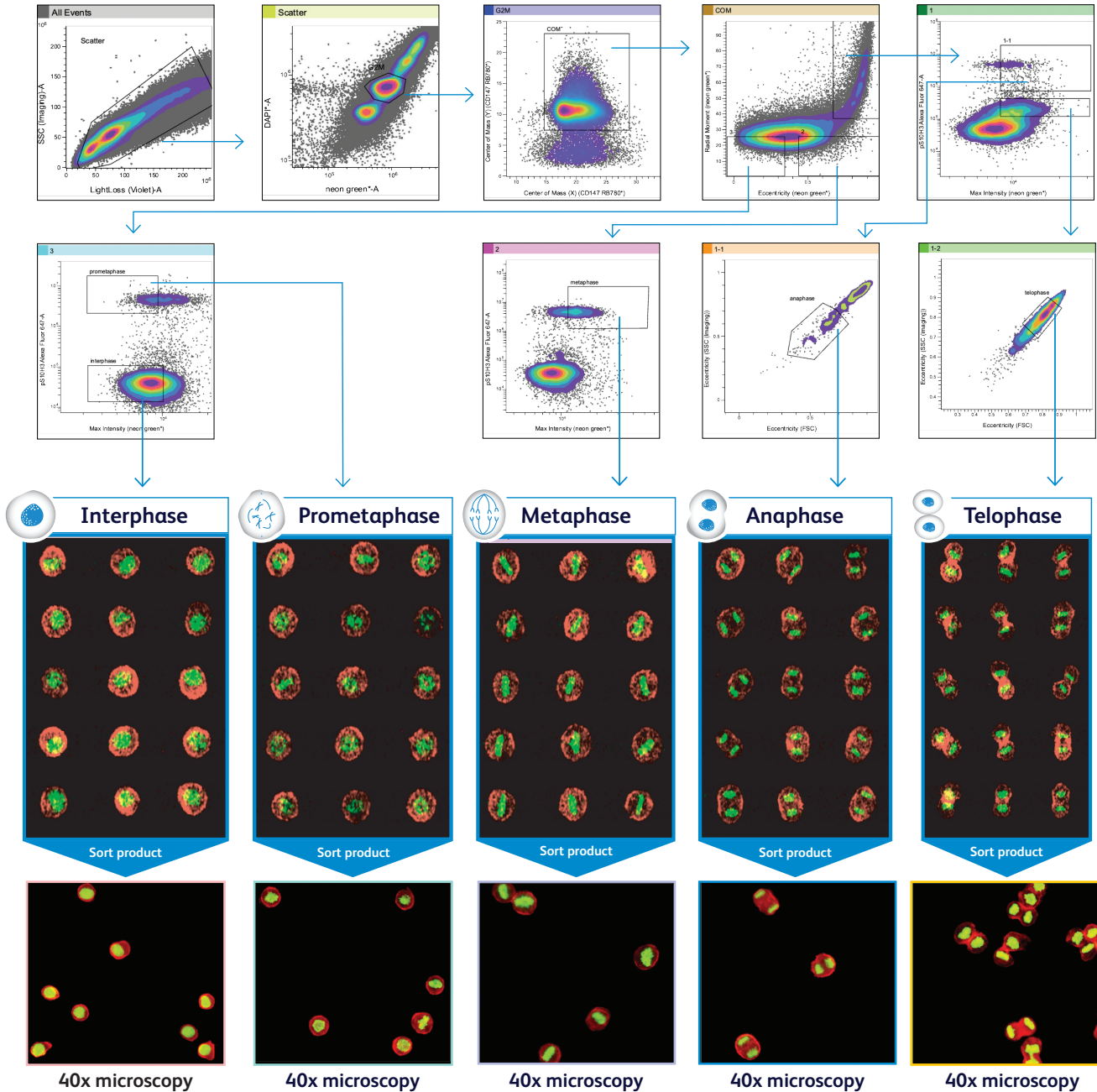
Flow cytometry parameters used

- DAPI-Area
- H2B (NeonGreen)-Area
- Alexa Fluor™ 647 (PS10H3)-Area

Image features used

- Radial Moment-H2B (NeonGreen)
- Max Intensity-H2B (NeonGreen)
- Eccentricity-H2B (NeonGreen)
- Eccentricity-FSC
- Eccentricity-SSC

Image-enabled cell sorting

Max intensity and diffusivity image features were used to sort HeLa cells (GFP+ Golgi apparatus) treated with BD FastImmune™ Brefeldin A Solution (BFA) which exhibited a dispersed morphology.
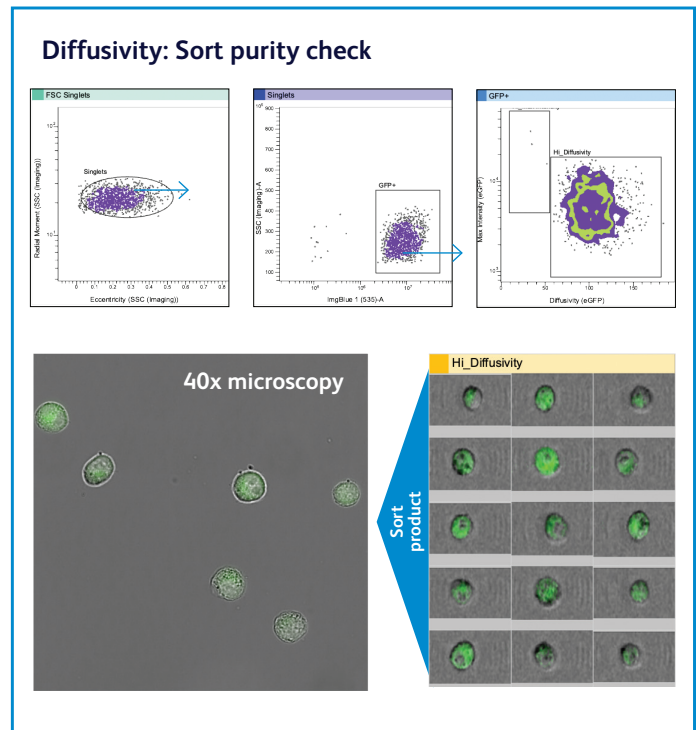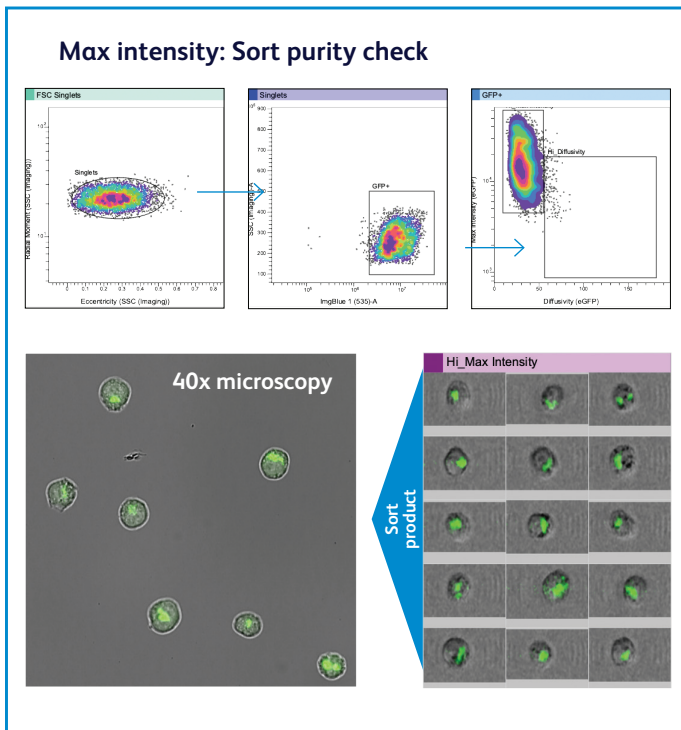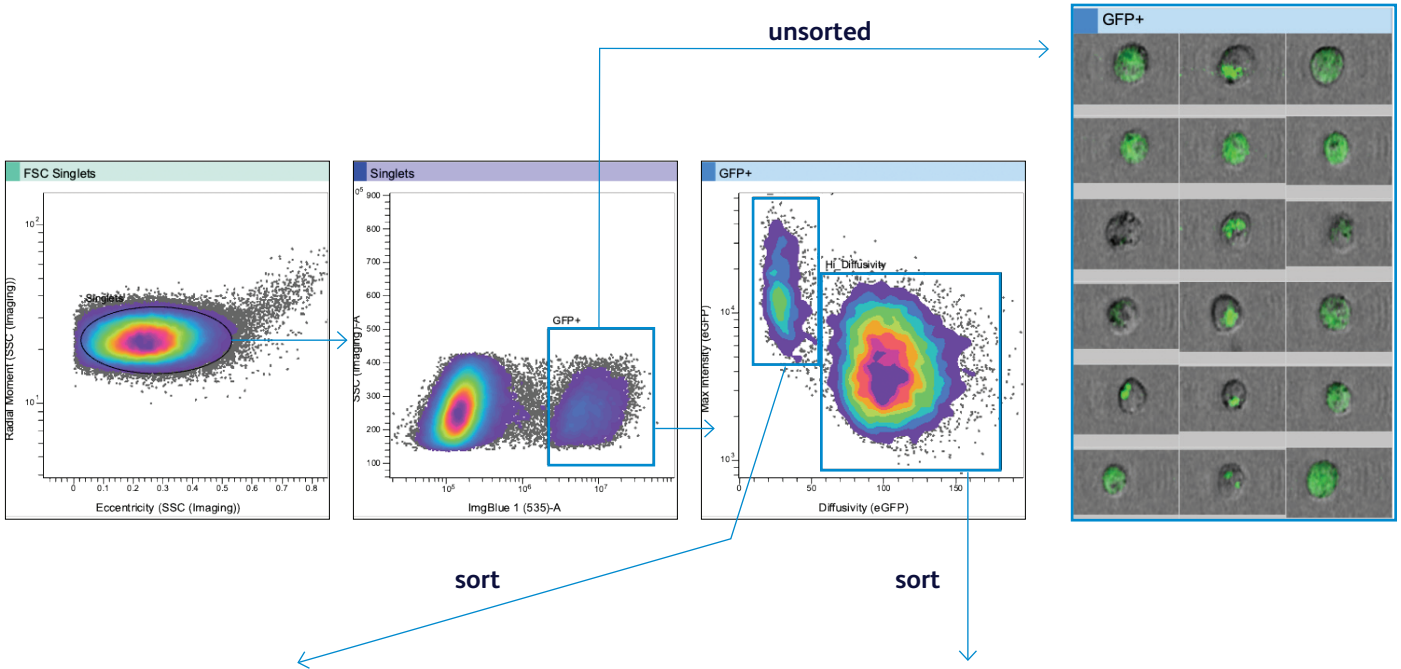
QC and analyze cells

Combine flow cytometry data with spatial and morphological insights to visually confirm cells of interest, and draw more accurate gates and to identify doublets and unwanted events.

HeLa cells

PBMCs
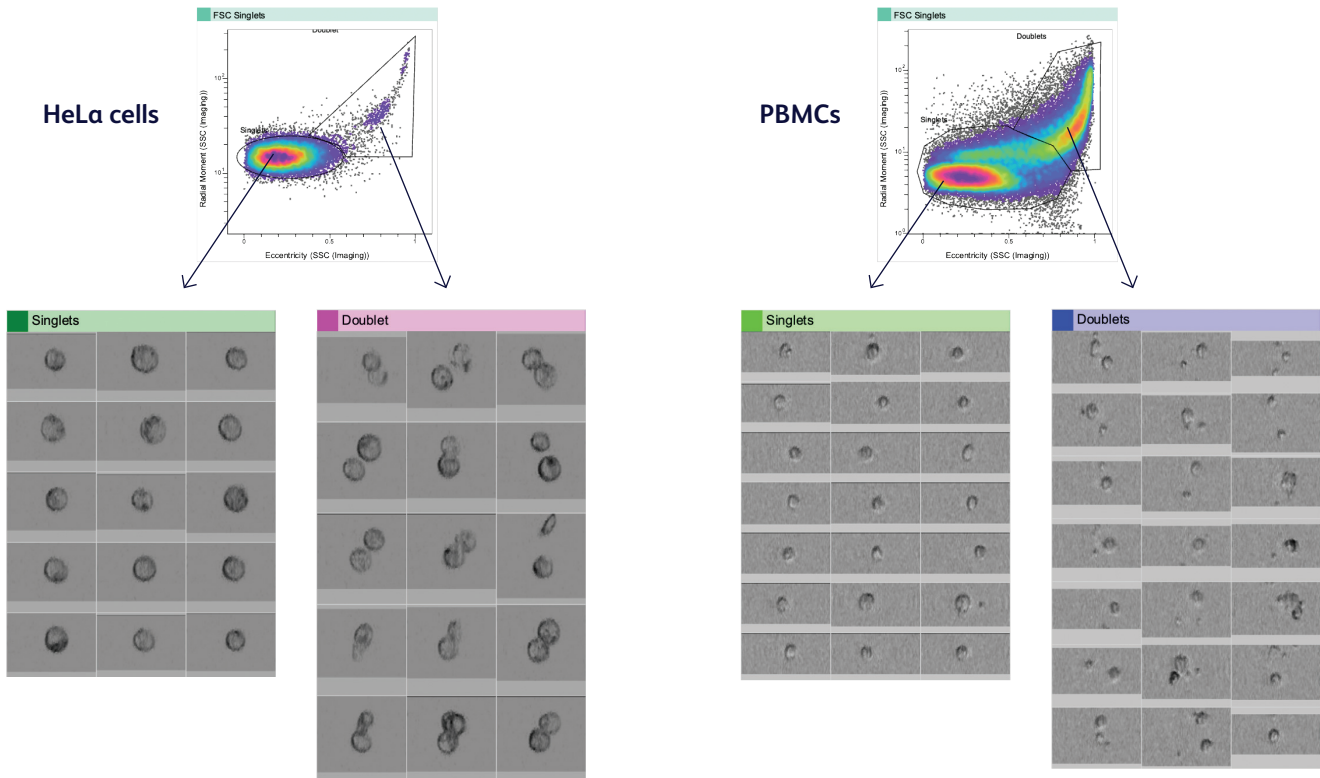
Know what you sorted

Wells or a group of wells can be selected to display corresponding images along the image wall and to locate cells on the sort population plots panel.
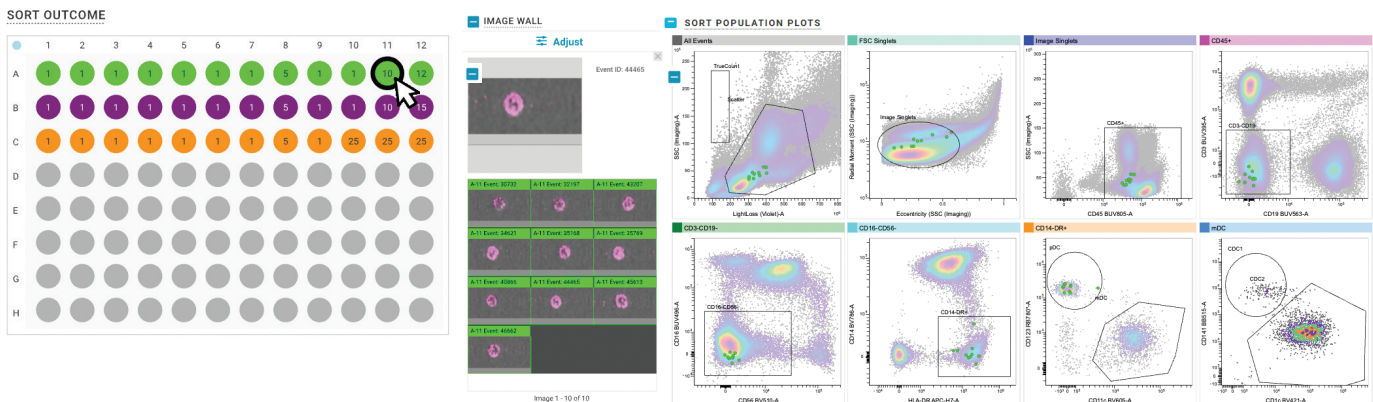
Explore your data with spectral flexibility using BD SpectralFX™ Technology

BD SpectralFX™ 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.

BD SpectralFX™ Technology

FULL-SPECTRUM OPTICS

Maximize the palette of colors and simplify the choice of fluorochromes detectable per laser

SYSTEM-AWARE ALGORITHM

Adapt to your sample and instrument in real-time to manage spread

NEXT GEN QC SYSTEM

Uses LEDs and beads to measure noise, perform gain calibration and provide real-time noise/signal hardware information

GUIDED WORKFLOW

Drive users to learn quickly and use best practices in experimental setup

OPTIMIZED HARDWARE DESIGN

Combine 78 fluorescent detectors across five lasers with algorithmically optimized filter bandwidths
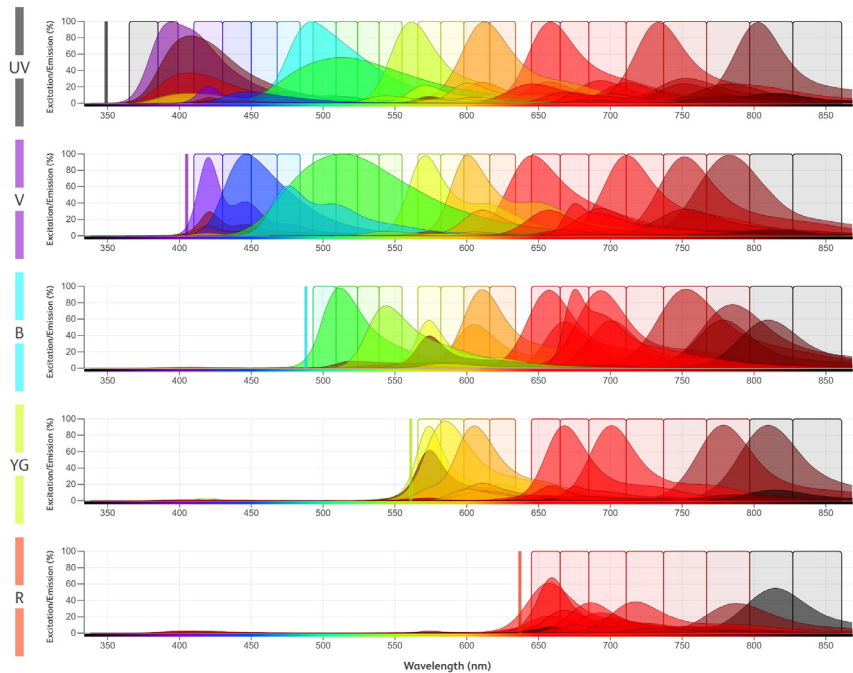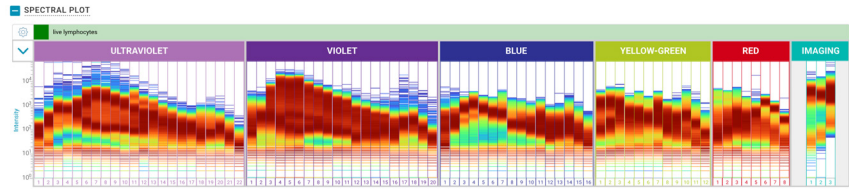
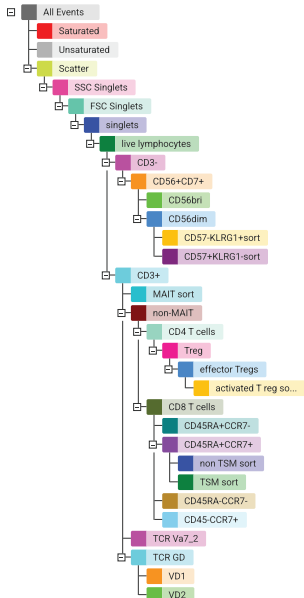# Six-way sorting of deep immunophenotyping panel

This 38-color spectral panel characterizes and sorts deep lineages of T cell and NK cell subsets.

The panel includes BD Horizon RealYellow™ and BD Horizon RealBlue™ Dye technology, engineered to work in tandem with the BD FACSDiscover™ S8 Cell Sorter for high-parameter spectral analysis to reveal biological information.
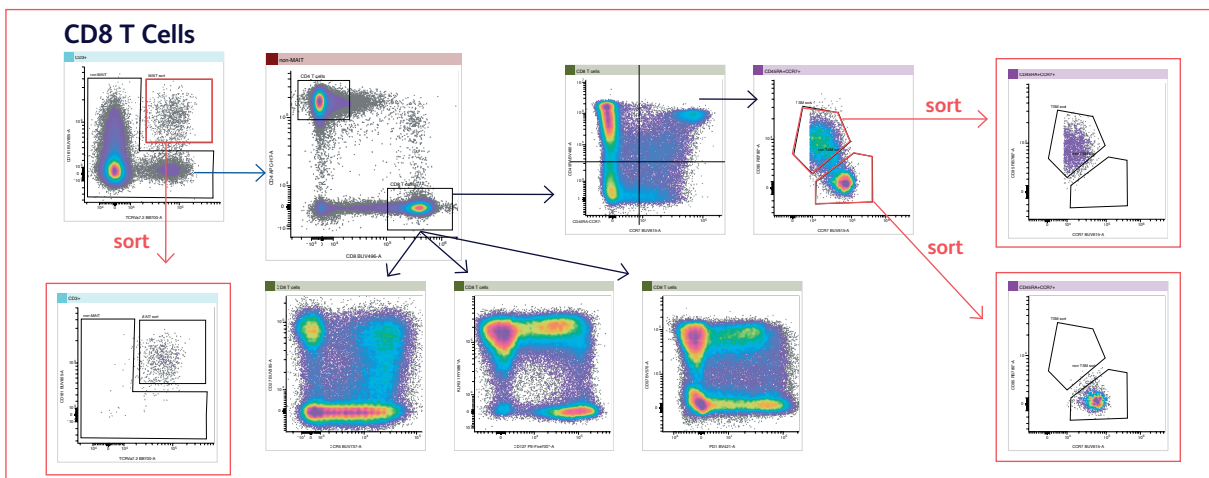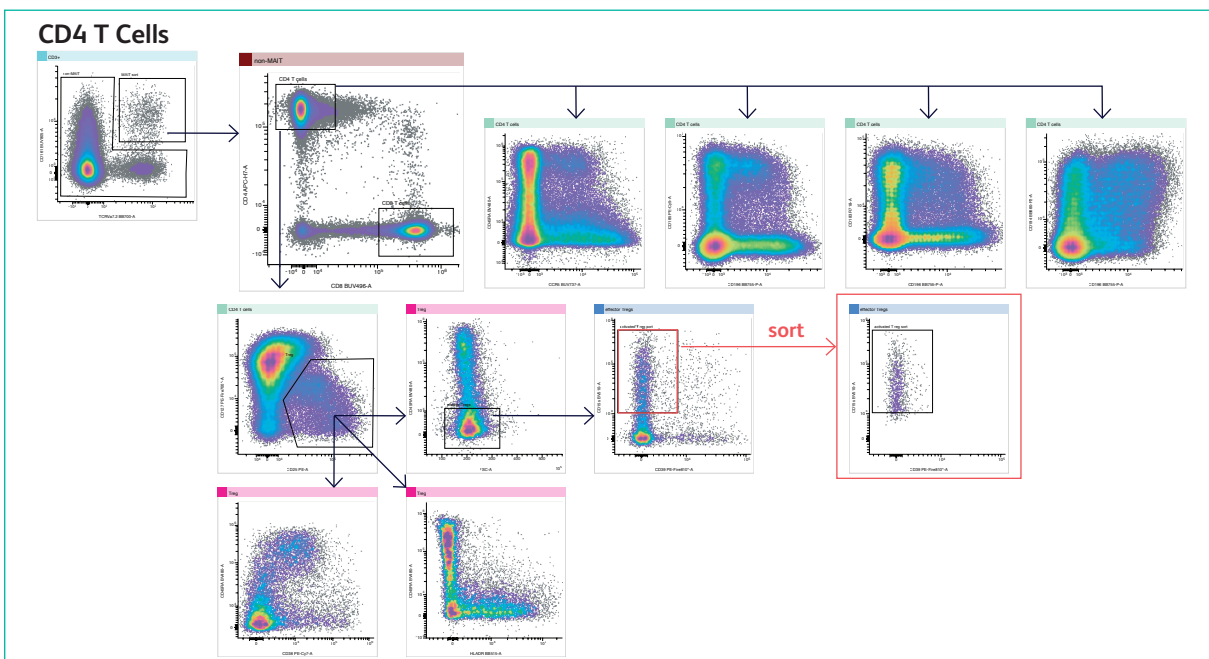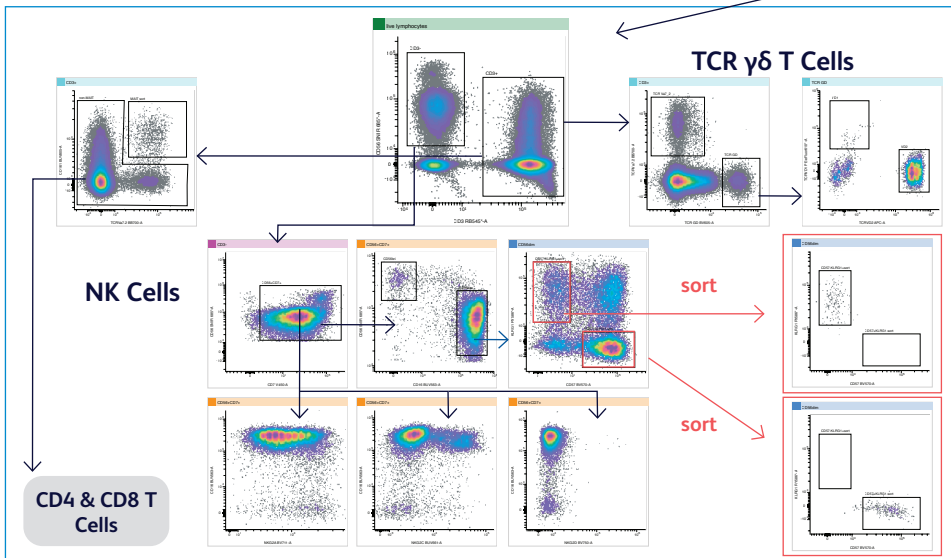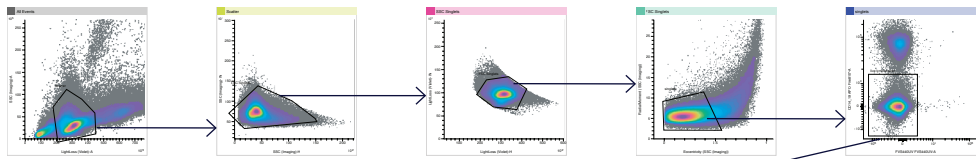
Laser	#	Fluorochrome	Marker
UV	1	BUV395	CD27
	2	FVS440UV	FVS440UV
	3	BUV496	CD8
	4	BUV563	CD16
	5	BUV615	CCR7 (CD197)
	6	BUV663	NKG2C
	7	BUV737	CCR5
	8	BUV805	CD161
Violet	9	BV421	PD1
	10	V450	CD7
	11	BV480	CD45RA
	12	BV510	CD15s
	13	BV570	CD57
	14	BV605	TCRgd
	15	BV650	TCR V-α24
	16	BV711	NKG2A
	17	BV750	NKG2D
	18	BV786	CD28
Blue	19	BB515	HLA-DR
	20	BB630	CD94
	21	BB660	CD194
	22	PerCP-Cy5.5	TCR Vg9
	23	BB700	TCR Vα7.2
	24	BB755	CD196
	25	RB780	CD95
	26	RB545	CD3
Yellow/Green	27	PE	CD25
	28	PE-Cy5	CD185
	29	PE-Cy7	CD38
	30	RY586	KLRG1
	31	PE-Fire 810	CD39
	32	PE-eFluor 610	TCR VD1
	33	PE-Fire 700	CD127
Red	34	APC	TCR VD2
	35	R718	CD183
	36	APC-H7	CD4
	37	SNIR-685	CD56
	38	APC-Fire 810	CD14_CD19

SPECTRAL PLOT

POPULATION HIERARCHY

Legend:
APC, APC-H7, APC/Fire 810, BB515, BB630-P2, BB660-P2, BB700, BB755-P, BUV395, BUV496, BUV563, BUV615, BUV661, BUV737, BUV805, BV421, BV480, BV510, BV570, BV605, BV650, BV711, BV750, BV786, PE, PE-Cy5, PE-Cy7, PE-eFluor 610, PE/Fire 700, PE/Fire 810, PerCP-Cy5.5, R718, RB545, RB780, RY586, Spark NIR 685, V450

TCR γδ T Cells

NK Cells

CD4 & CD8 T Cells

sort

sort

CD4 T Cells

sort

CD8 T Cells

sort

sort

sort

BD Technical Services is your partner for performance

BD Service teams enable you to better serve your customers, patients and research partners. You can count on our deep knowledge and experience to help ensure your BD FACSDiscover™ S8 Cell Sorter delivers expected, timely results.

Accelerate uptime and maximize the value of your investment with robust service coverage. Service contracts optimize performance by providing regular preventive maintenance as well as remote and on-site support.

Maximum uptime

At BD, we understand the cost and consequences of unexpected downtime. We are committed to maximizing your system uptime to make sure you keep your promises. Customers under service plans get priority service compared to time and materials. In addition, remote diagnostics help maximize system uptime by properly diagnosing instruments, reducing issue resolution time and optimizing field service visits.

- Responsive onsite repair
- Remote service capability
- Preventive maintenance

Peace of mind

No more wondering how and when your instrument will be repaired. Rest assured knowing you have access to BD service professionals whenever you need them and when it matters most. Having a dedicated project manager helps deliver an effective implementation, accelerate value realization and provide exceptional customer experience.

- Unlimited repairs
- Email and chat support
- Local field service expertise

Predictable expense

Protect your budget from unexpected costs. Our service plans are one flat fee that covers your corrective and maintenance-related service needs when and how your laboratory needs it.

- No hidden charges
- Extends your service warranty
- Multi-year pricing available

SUPPORT
- Local sales
- Applications
- Service
- FlowJo™ Software applications
- Remote Support Services (RSS) with Assurity Linc™ Software

DATA ANALYSIS
- Integrated with FlowJo™ Software for data analysis needs

REAGENTS
- Compatible with BD Horizon RealYellow™ and BD Horizon RealBlue™ Dye technology

eCOMMERCE
- Offers a rich online buying experience

OPTIONS
- Sample temperature control
- Class II Type A2 biological safety cabinet (BSC)
- BD® Aerosol Management Option (AMO)
- Instrument table

Class 1 Laser Product.

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

BD Life Sciences, 2 International Business Park, The Strategy #08-08, Singapore 609930

bdbiosciences.com

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