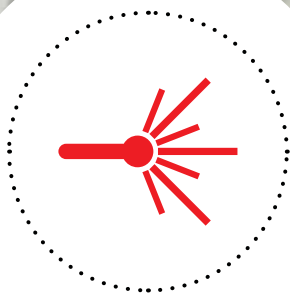


CytoFLEX Flow Cytometer Platform

Join the Resolution **REVOLUTION**



EVERY
event matters.

 **BECKMAN
COULTER**
Life Sciences

Benchtop Cytometry without Compromises

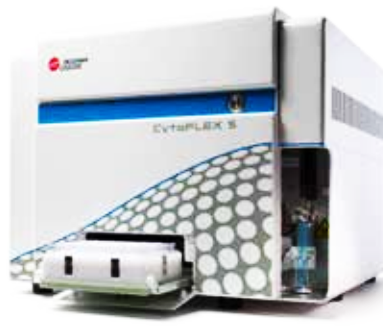
The CytoFLEX Platform is a revolutionary system presenting optimal excitation and emission, minimizing light loss and maximizing sensitivity. Since its initial unveiling, the compact system with innovative technology borrowed from the telecommunications industry has garnered attention from the flow cytometry community. Since that time, we have continued to expand the platform, creating even more choices for researchers.

We continue to leverage the power of the platform:

- Exquisite sensitivity
- Small particle analysis in a benchtop analyzer
- Extensive set of repositionable band pass filters
- Flexibility to upgrade by adding additional parameters
- Intuitive software to facilitate multicolor analysis



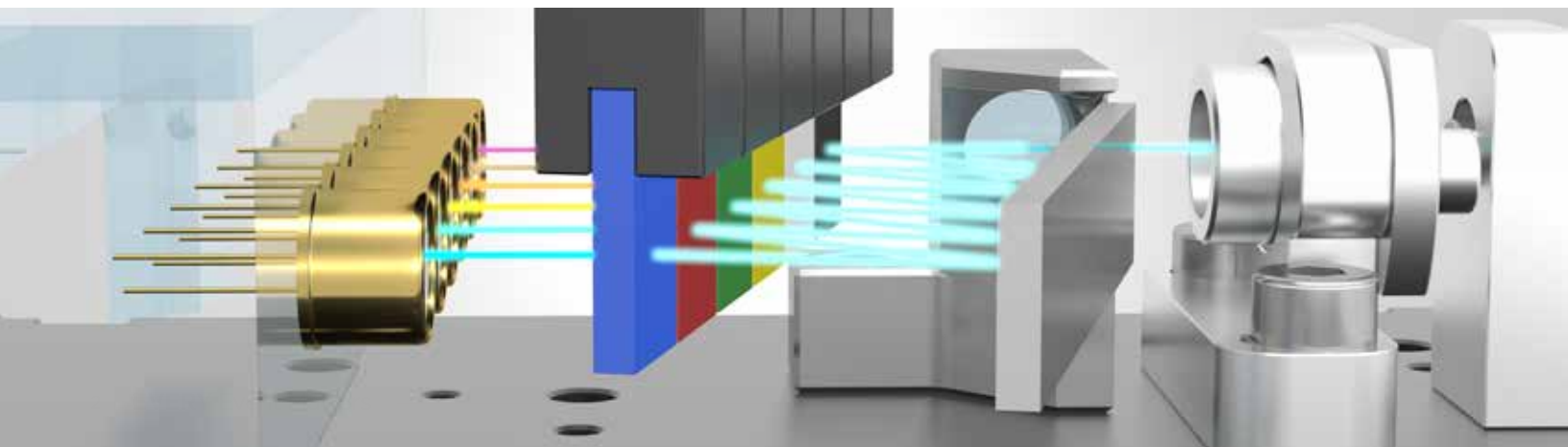
Up to 3 lasers



Up to 4 lasers

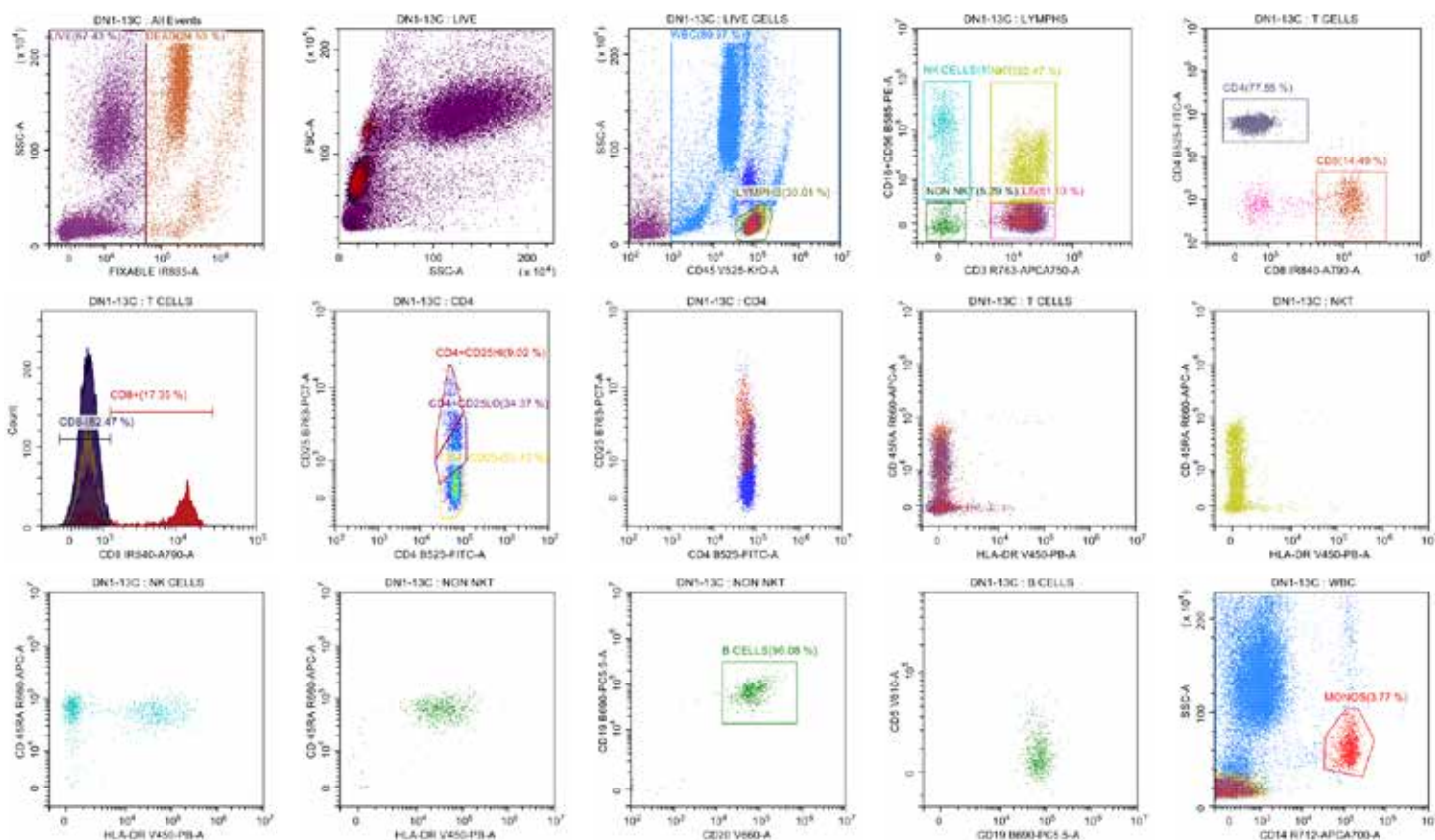


Up to 6 lasers



Focus on the Science

The CytoFLEX Flow Cytometer provides the performance you need in an easy to use system allowing you to focus on the science, not the instrumentation. The system can be configured for the needs of your laboratory, whether it is routine low complexity analysis, high complexity analysis, or analysis that pushes the boundaries for flow cytometry.



T cell subset analysis of human peripheral blood by 13 color immunophenotyping. Analyses of T cell subsets based on the differential expression of surface molecules related to cell function, differentiation, or activation have evolved. As a result, T cell analysis requires multiple markers to capture the various populations. Using the IR channel to add LIVE/DEAD analysis frees up other channels for typical cell surface marker analysis. In addition, using an IR channel for the relatively bright CD8 marker reduces compensation requirements and preserves sensitivity for dim markers.

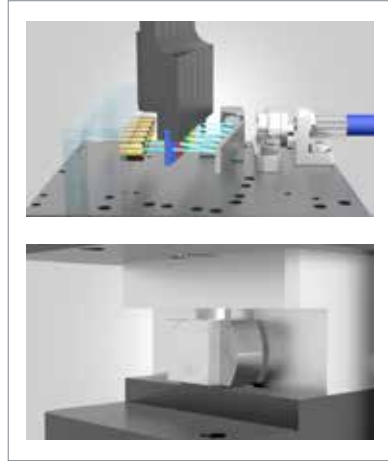
"Being within the department of biology, we're able to put a diverse range of samples onto the instrument and to see how it performed. Certainly I'd like to add that it had a very good high resolution. It had a low noise, which meant the signal to background for example was exceptional."

Karen Hogg, PhD, Bioscience Technology Facility,
University of York

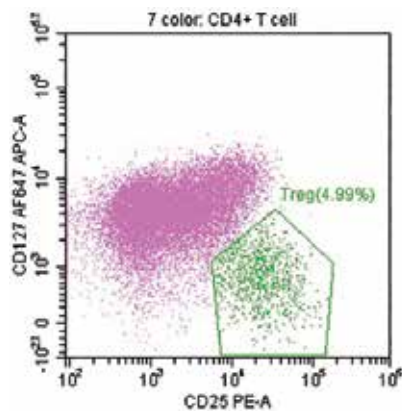


Harness the Power of Advanced Sensitivity

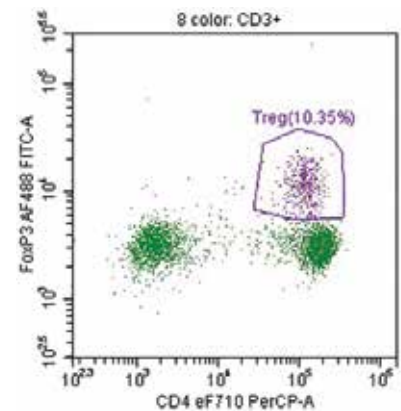
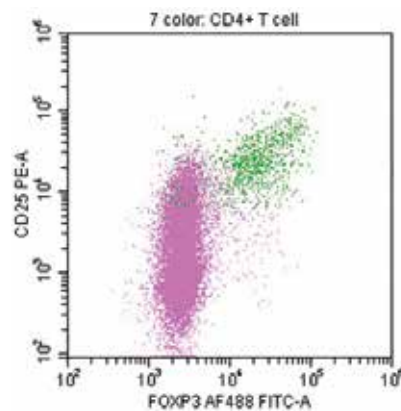
A unique assembly of technologies contributes to the exquisite sensitivity of the platform. Borrowing technology from the telecommunications industry, the Wavelength Division Multiplexer (WDM) deconstructs and measures multiple wavelengths of light. The WDM relies on fiber optics and band pass filters to separate the light wavelengths. Unlike more traditional instruments, multiple dichroic filters to direct the light path are not required. This makes it much easier to configure the fluorescence channels, but also increases light efficiency as light loss due to refraction is minimized. The WDM utilizes Avalanche Photodiode detectors (APD), versus Photomultiplier tubes (PMT). One hallmark of the photodiode is the high quantum efficiency in excess of 80%, especially for wavelengths greater than 800 nm.



Another component of the system which increases efficiency is the use of integrated optics to focus light onto the flow cell. With conventional analyzers, laser excitation sources are optimized by shaping and focusing light through a series of lenses and filters onto the flow cell. Each of these light interactions is an opportunity for light loss. All of these technologies work together to ensure efficient light management for optimal excitation and emission of fluorochrome-tagged cells, which is critical to performance in the CytoFLEX Platform!



Human PBMCs



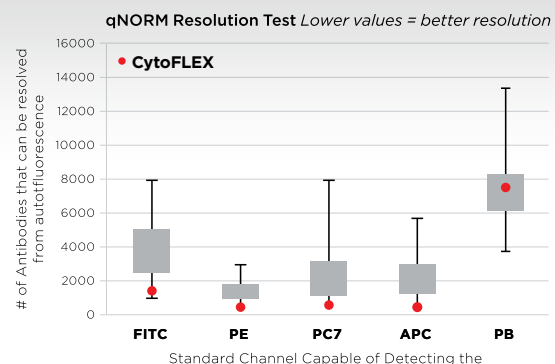
Mouse Spleen

Regulatory T cells characterized by low levels of expression were easily identified.

Rare Regulatory T cell populations FoxP3+ were easily detected without the using a Fluorescence Minus One (FMO) stain.

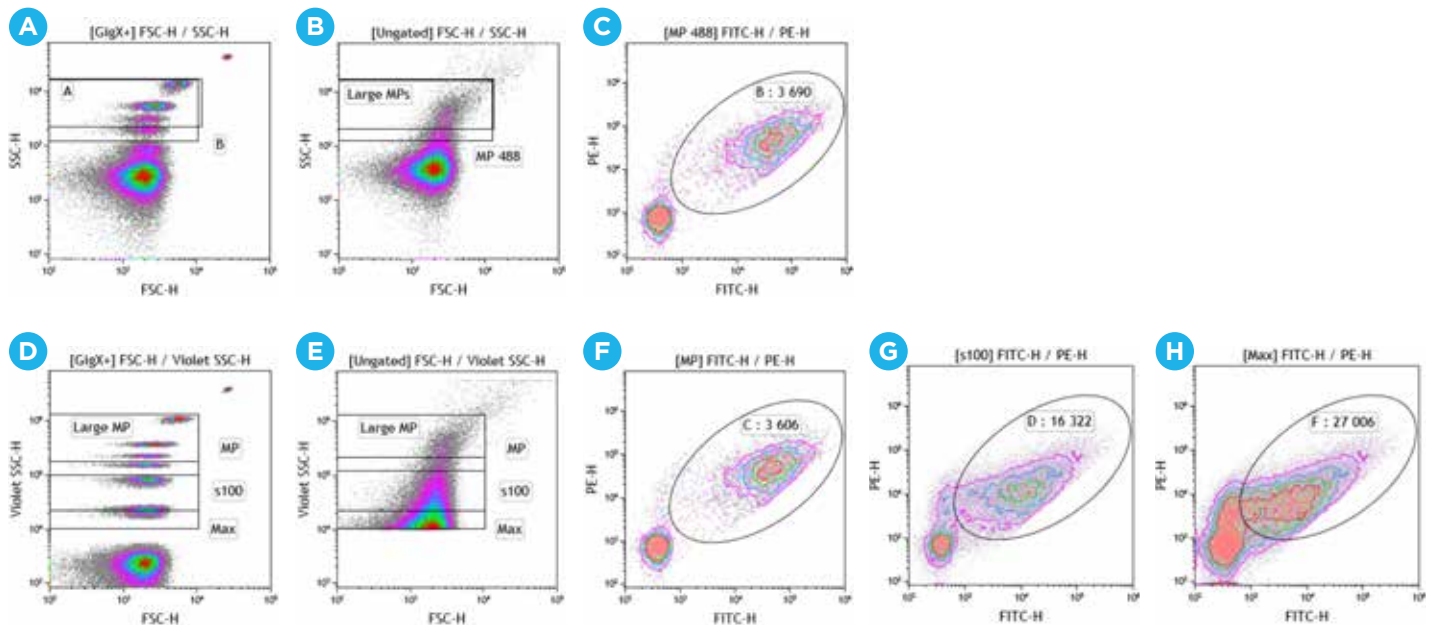
"The CytoFLEX compares very well with all the best instruments out there. It definitely beats every instrument I own in the FITC, PE, PECy7, and APC channels."

Ryan Duggan, UC Flow Core Lab Director



Nanoparticle Detection

The advancement of flow cytometry into nanoparticle scale resolution, makes it possible to ask questions previously left to speculation. Several fundamental capabilities of flow cytometry make this an attractive platform for studying nanoparticles such as extracellular vesicles, the ability to detect large numbers of events, and discrimination of rare events, while simultaneously collecting information on phenotypic expression. The CytoFLEX Flow Cytometer has the resolution to detect particles smaller than 200 nm within a phenotypic context.



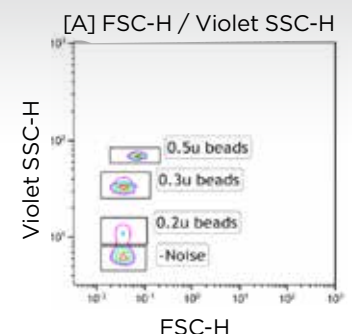
Detection of Cell Line-Derived Microparticles using Blue or Violet Side Scatter. Instrument settings were standardized using a blend of fluorescent submicron polystyrene beads specially designed to optimize side scatter settings on highly sensitive flow cytometers: Megamix-Plus FSC & Megamix-Plus SSC (BioCytex Refs # 7802 and # 7803 respectively) were mixed V/V to create Gigamix, a SMP-oriented quality control system featuring 7 reference bead sizes of 900, 500, 300, 240, 200, 160, and 100 nm to which was added an additional subset of 75 nm polystyrene beads devoted to challenge nanoparticle analysis capabilities. Gates were set using the enriched Gigamix bead mixture (488 nm side scatter (SSC), panel A and 405 nm violet side scatter (VSSC), panel B) and then applied to the analysis of purified BxPC3 pancreatic cell line-derived microparticles using 488 nm SSC or 405 nm VSSC (panel D and E, respectively). Two classical gates i.e. "Large MP" = 0.6 to 0.22 μm -bead-equivalent and (all) "MP" gate = 0.6 to 0.22 μm -eq. were similarly set with the use of reference beads in both the 488 nm and 405 nm SSC channels. Due to increased resolution in the VSSC channel, two additional gates could be defined noted "S100" = 0.6 to 0.1 μm -eq. and "Max" = 0.6 to -0.08 μm -eq., a newly attained low detection limit located in-between the 75 and 100 nm beads. In dual fluorescence plots relating Annexin-V-FITC vs SBTB1-PE (CD142) labeling, similar number of dual positive events were detected using the standard "MP" gate for both the 488 nm SSC and the 405 nm VSSC (3690, panel C; 3606, panel F, respectively). However, using VSSC, the wider new gates incorporated higher numbers of events, i.e. S100 (13,333 events, panel G), and Max (16,322, panel H) thus opening the door for deeper insight into the "MP iceberg".

Data kindly provided by Philippe Poncelet from BioCytex, a Stago Group Company and Stéphane Robert from VRCM, INSERM S1076, Marseille, F. For complete details see CYTO 2016 poster, Submicron particle analysis and counting is highly favored by the use of side scatter from the violet laser on the CytoFLEX flow cytometer, accessible on Research Gate.

"The CytoFLEX is the first flow cytometer with an acceptable noise range on which we can clearly demonstrate detection of extracellular vesicles down to a size of 150 nm*. The potential to combine small particle analysis with the detection of up to 13 additional fluorescence parameters makes this cytometer an outstanding instrument for extracellular vesicle detection."

Andreas Spittler, MD, Associate Professor for Pathophysiology, Medical University of Vienna, Core Facility Flow Cytometry & Department of Surgery, Research Laboratories

In order to achieve detection smaller than 200 nm, modifications to the method and rigorous control of instrument set up and sample preparation are required. See Set-Up of the CytoFLEX for Extracellular Vesicle Measurement, Andreas Spittler.



Detection Linearity & Compensation

Due to the highly reproducible semiconductor process, the fluorescence intensities measured on the CytoFLEX Platform are linear to the corresponding detector gain settings. Due to the gain linearity of the semiconductor, the compensation matrix obtained at one gain setting can be used for actual experiments at different gain settings. Compensation matrix elements obtained at different gain settings can be mixed together to form a full matrix, the Compensation Library.

1

Acq#	Channel	APC	APC700	APC750	APC780	APC800	APC820	APC840	APC860	APC880	APC900	APC920	APC940	APC960	APC980	APC1000
0.00	APC	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	APC700	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	APC750	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	APC780	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	APC800	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	APC820	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	APC840	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	APC860	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	APC880	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00
0.00	APC900	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00	0.00
0.00	APC920	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00	0.00
0.00	APC940	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00	0.00
0.00	APC960	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00	0.00
0.00	APC980	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00	0.00
0.00	APC1000	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	1.00

View the compensation matrix to assess the spillover between fluorochromes in an experiment. Save the values to the library or a matrix to be applied to future experiments.

2

Test #	Test Name	Gain	APC	APC700	APC750	APC780	APC800	APC820	APC840	APC860	APC880	APC900	APC920	APC940	APC960	APC980	APC1000
1	Test 1 2009-12-21 09:00:00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
2	Test 2 2009-12-21 09:00:00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
3	Test 3 2009-12-21 09:00:00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
4	Test 4 2009-12-21 09:00:00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	Test 5 2009-12-21 09:00:00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
6	Test 6 2009-12-21 09:00:00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
7	Test 7 2009-12-21 09:00:00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
8	Test 8 2009-12-21 09:00:00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
9	Test 9 2009-12-21 09:00:00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	Test 10 2009-12-21 09:00:00	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

The Compensation Library stores previously collected spillover values and the gain used during the acquisition. Use a selection from the library to build a new matrix which can be applied to future experiments.

3

Import Compensation

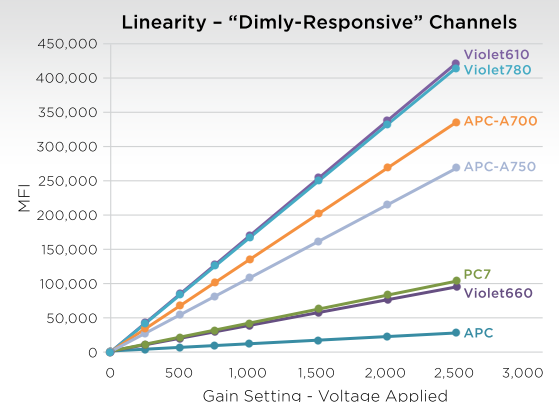
☐ Import compensation matrix and transform it with current gains.
☐ Import compensation matrix.
☒ Import compensation matrix and gain.

OK Cancel

When importing the compensation matrix, three options are available.

“Linearity is certainly a great asset of the CytoFLEX. It is truly impressive as all the channels displayed an almost perfect linearity. The minimum R-squared value achieved was 0.9998 which is exceptional.”

Loïc Tauzin, Valerie Glutz and Miguel Garcia, Ecole Polytechnique Federale De Lausanne Flow Cytometry Core Facility

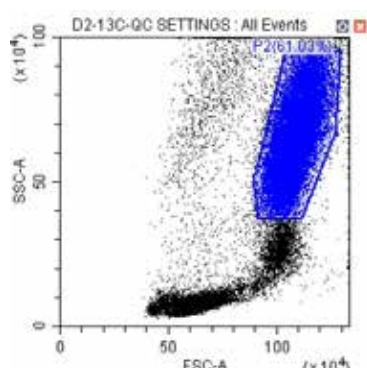


CytExpert Acquisition and Analysis software

Novice to experienced flow cytometrists can learn to operate the system quickly, and can confidently set up experiment based protocols and export publication quality data. The Default installation requires no user login. For multiuser instruments, the User Management installation requires user login and contains features for role management. Electronic Records Management installation provides tools that facilitate compliance with 21 CFR Part 11, Electronic Records and Electronic Signatures. This includes controls for user identification, permissions, electronic signatures, data integrity, operation and experiment logs and audit trails.

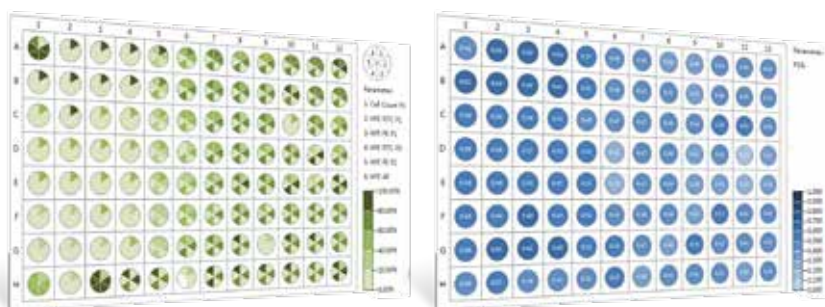
Standardization allows operators to use the QC beads to set target values for different applications and calibrate the gain settings automatically. The Standardization Target Library stores and allows users to retrieve a variety of application target files which are linked to the QC bead lot numbers.

AUTOGATE FUNCTION



Double click the population you want to gate in the 2-D plot.

HEAT MAP FUNCTION



Heat Map analysis function is integrated into the plate loader mode. Import meta-data from .csv or .xlsx file to create a plate. Each experiment can include several heat maps. Maps with up to six parameters are available.

Minimum Computer Requirements

Required processor	4th Gen Intel® Core™ i3 (3 MB Cache, 2.90 GHz) equivalent or above
Required operating system	Windows 7, 8, 10 Professional, 64 bit
Required memory	4 GB RAM or above
Required hard disk space	At least 1 G free space for the disk of the experiment for analysis. Recommend 10 G for data acquisition.
Required display	1920 x 1080 resolution for optimal display
USB Port	USB 2.0 or above for data acquisition

For higher throughput applications, an optional plate loader module can save hands on time.

- Plate Loader option can analyze a 96-well plate in as little as 32 minutes
- Option for integrated Sample Injection Mode Control, switch between single tube and plate acquisition in 5 minutes
- Easy virtual plate layout setup with customizable wash and mix cycles
- Define multiple experiments on a single plate
- Compatible with flat-bottom, U- and V-bottom standard plates



CytoFLEX Flow Cytometer

The CytoFLEX model provides the traditional laser palette and a number of channels to accommodate most basic flow cytometry assay needs.

Blue-Red-Violet (B-R-V) Series

The fully activated instrument includes five fluorescent channels from the 488 nm (Blue) laser, three from the 638 nm (Red) laser, and five from the 405 nm (Violet). The instrument includes 13 band pass filters which can be repositioned as needed. You can activate the number of channels that you need now and add channels later as your research needs grow. See the Configuration Table for a current list of available pre-set configurations.

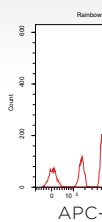
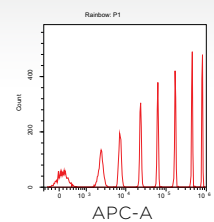
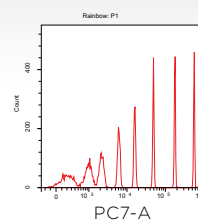
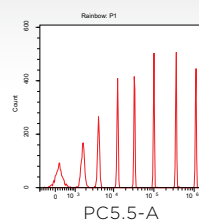
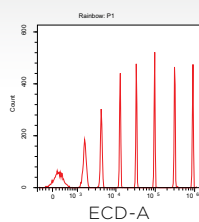
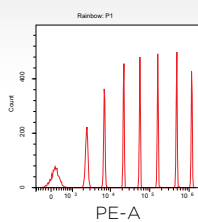
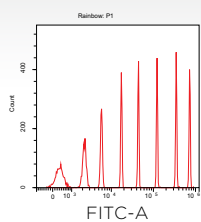
Band Pass Filters

450/45	585/42	660/10 (2)	712/25
525/40 (2)	610/20 (2)	690/50	780/60 (3)

Available Configurations

PART NUMBER	LASERS	FLUORESCENCE CHANNELS	488 NM (BLUE)	638 NM (RED)	405 NM (VIOLET)
B53000	3	13	5	3	5
B53001	3	12	5	3	4
B53002	3	12	4	3	5
B53003	3	11	4	3	4
B53004	3	11	3	3	5
B53006	3	10	4	3	3
B53005	3	10	5	3	2
B53037	2	10	5		5
B53007	3	9	3	3	3
B53008	3	9	4	3	2
B96622	2	8	5	3	
B53009	3	8	3	3	2
C02945	3	8	4	2	2
B53010	3	7	3	2	2
B53011	2	6	3	3	
B53013	2	6	4	2	
B53012	2	6	3		3
C02944	2	6	4		2
C02946	3	6	2	2	2
B53018	1	5	5		
B53014	2	5	3	2	
B53019	1	4	4		
B53015	2	4	3	1	
B53016	2	4	2	2	
B53017	2	4	2		2

BLUE CHANNELS

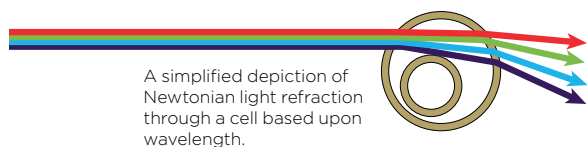


Excellent resolution of 8-speak SPHERO™ Rainbow Calibration Particles.

Bringing Violet Side Scatter to a Benchtop Analyzer

The CytoFLEX Platform features the ability to trigger side scatter of off violet as well as the blue laser. This flexibility increases the range of particles that can be detected and analyzed. The amount of light scattered by any particle is directly proportional to the diameter of the particle and inversely proportional to the wavelength of the light being used to detect it. For this reason, the smaller violet (405 nm) wavelength will result in more orthogonal light scattering at any given particle size than the blue (488 nm) wavelength, and will increase the range of resolution to smaller particles than can be detected by standard side scatter.

Moreover, upon entering a medium of a different refractive index, light waves are refracted by the new medium inversely proportional to the wavelength of the light, with smaller wavelengths having a higher refraction than larger wavelengths.



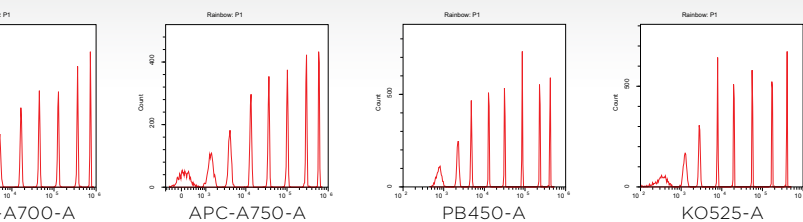
Based upon this physical property, the use of violet light will help to amplify the differences in the refractive indices between the particles and their surrounding media, and in turn increases the ability to detect particles with a lower refractive index, such as exosomes, micro vesicles and silica nanoparticles.



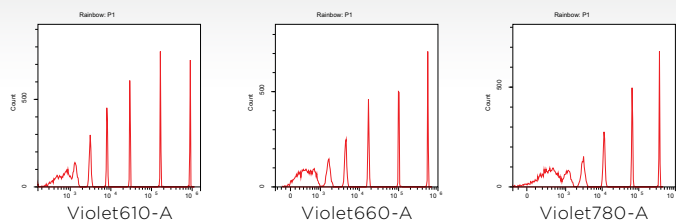
I enjoy the ability to swap out filters—that's a huge advantage of the instrument. I don't have to purchase additional filters, it already comes with all the filters that I would ever need. It also allows me to upgrade the instrument. Currently, I only have 2 lasers and I can upgrade to the violet laser, I can upgrade to a plate loader, I can upgrade to whatever I might need in the future, which is a huge advantage as a core manager.

*Sarah Schuett
Core Lab Manager
North Carolina State Veterinary College*

CHANNELS



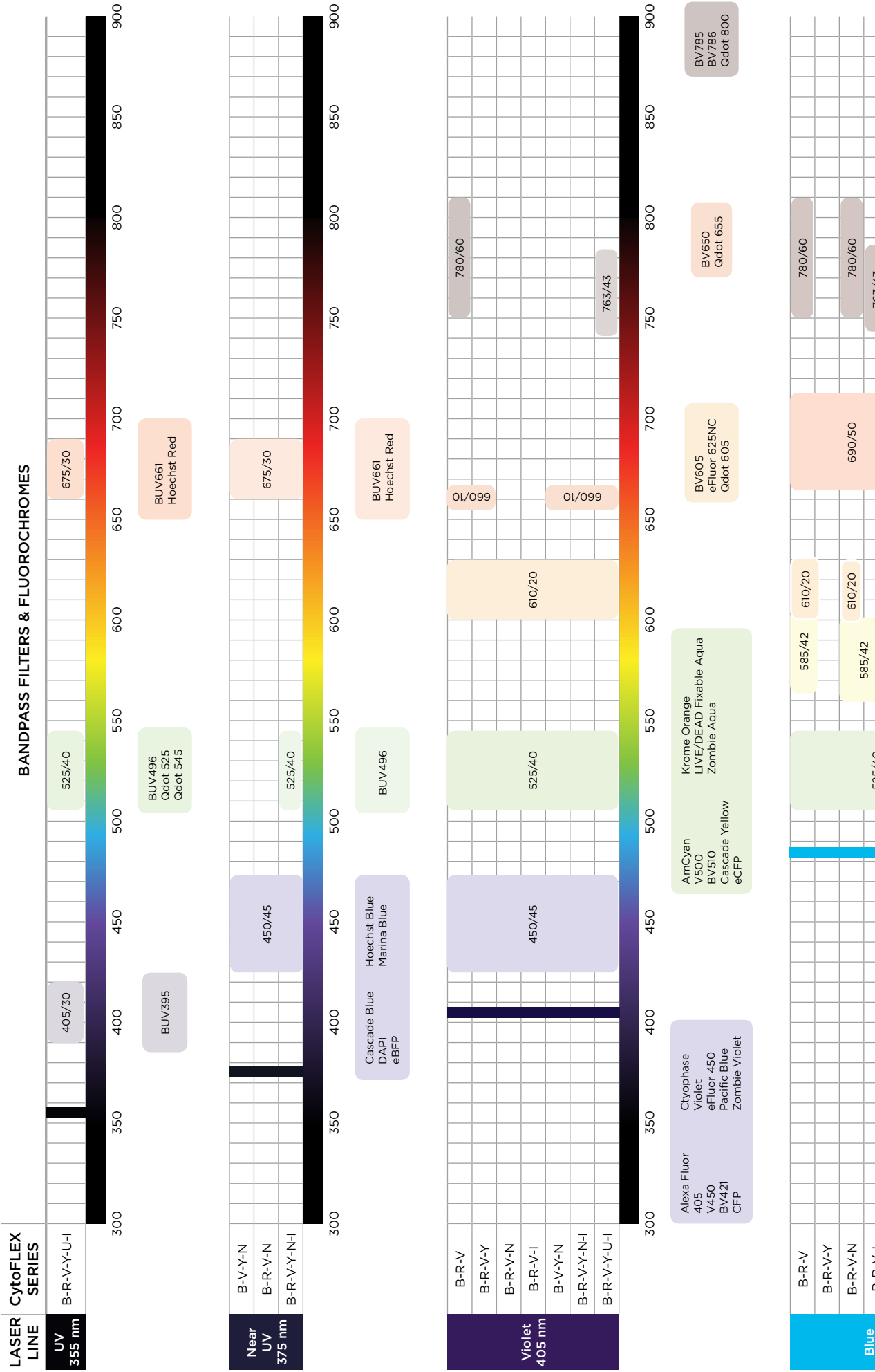
VIOLET CHANNELS

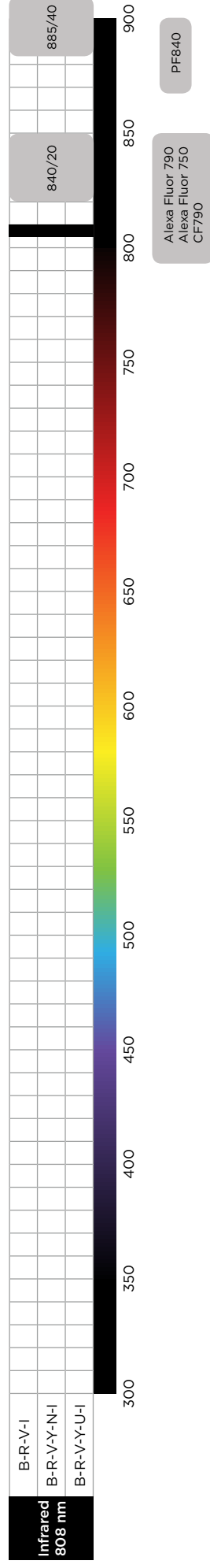
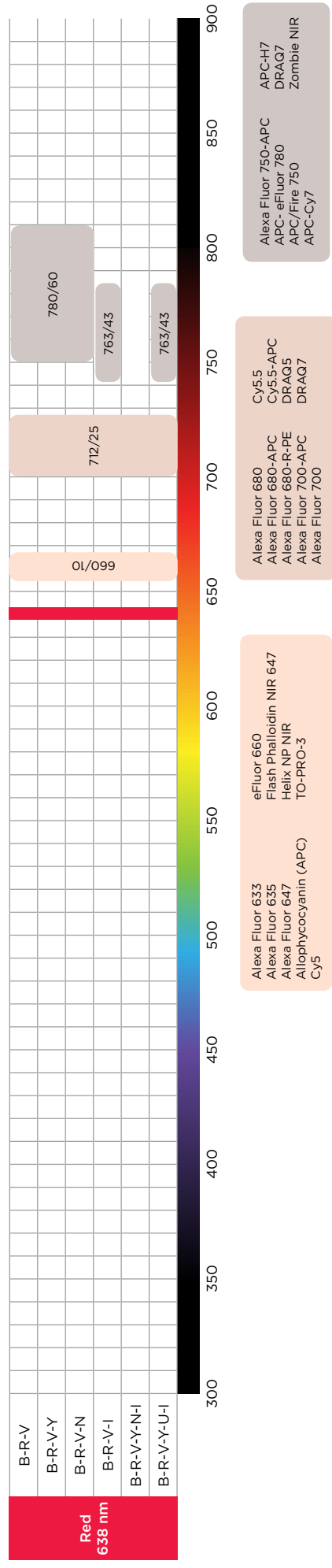
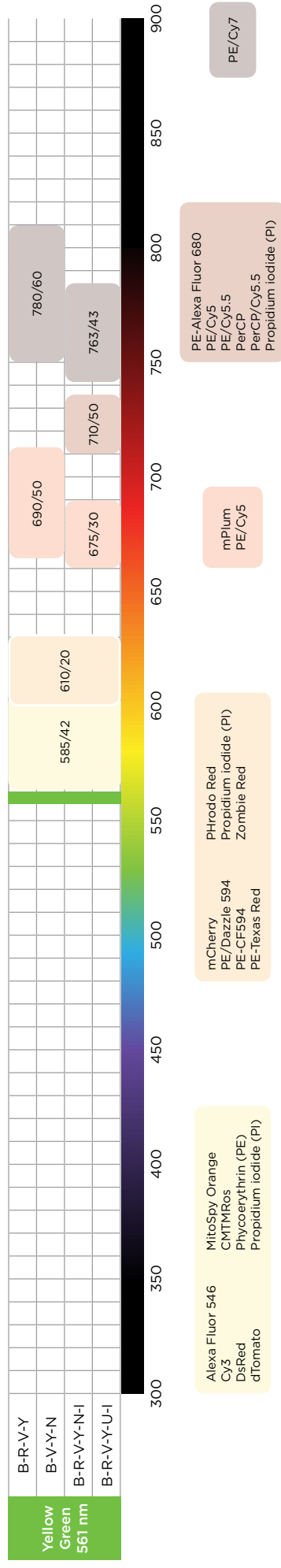
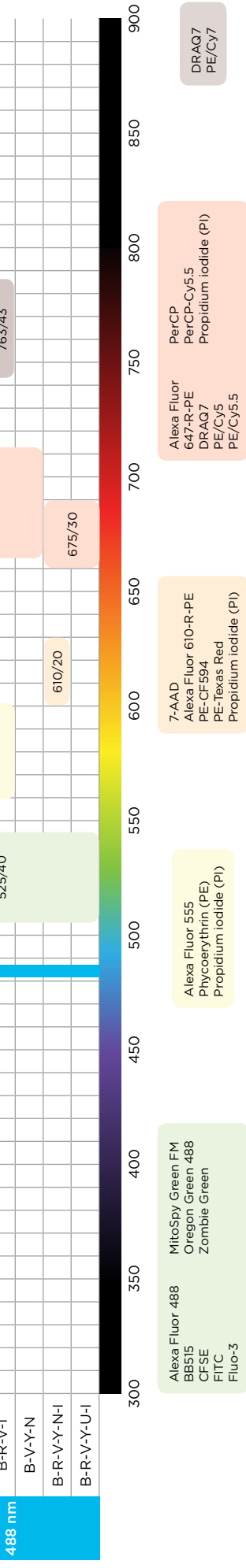




CytoFLEX Platform Fluorochrome Chart

The chart lists the standard* bandpass filters for each channel along with suitable fluorochromes based upon excitation and emission spectra.





Non-standard bandpass filters are also available, see page 18 for a complete listing. These filters can be used to expand the detectable fluorochromes.

CytoFLEX S Flow Cytometer

The CytoFLEX S models bring up to four laser instruments to the research community expanding the fluorochrome palette for special applications.

Blue-Red-Violet-Yellow Green (B-R-V-Y) Series

The fully activated instrument includes two fluorescent channels from the 488 nm (Blue) laser, three from the 638 nm (Red) laser, four from the 405 nm (Violet) laser, and four from the 561 nm (Yellow Green) laser. The instrument includes 13 band pass filters which can be repositioned as needed. You can activate the number of channels that you need now and add channels later as your research needs grow. See the Configuration Table for a current list of available pre-set configurations.

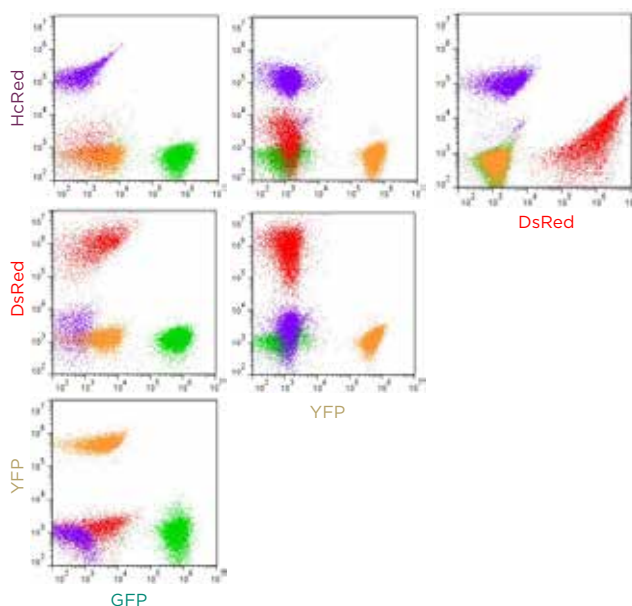
Includes 13 Repositionable Band Pass Filters

450/45	585/42	660/10 (2)	712/25
525/40 (2)	610/20 (2)	690/50 (2)	780/60 (2)

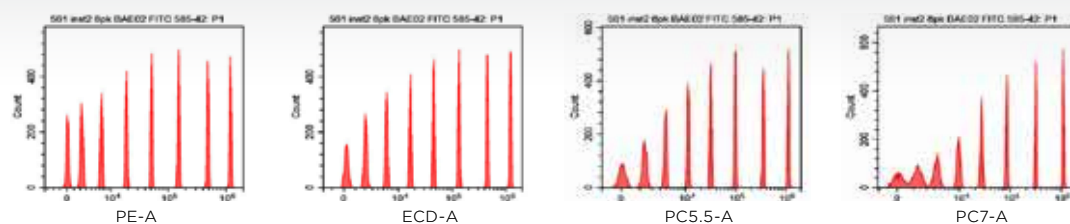
Available Configurations

PART NUMBER	LASERS	FLUORESCENCE CHANNELS	488 NM (BLUE)	638 NM (RED)	405 NM (VIOLET)	561 NM (YELLOW GREEN)
B75408	4	13	2	3	4	4
B96620	3	10	2		4	4
B75811	3	9	2	3		4
B96621	4	9	2	2	2	3
C02948	3	9	2	3	4	
B75812	2	6	2			4
C02947	3	6	2		2	2

The **Yellow Green 561 nm** laser excites RFP and RFP derivatives such as DsRed and HcRed more efficiently than the **488 nm** laser. An additional benefit of spatially separated lasers is increased sensitivity, thus minimizing inter-laser compensation. Therefore, cells expressing GFP, YFP, DsRed, and HcRed, may be analyzed, demonstrating resulting in superior resolution of simultaneously expressed multicolor fluorescent protein signals.



YELLOW GREEN CHANNELS



Excellent resolution of 8-speak SPHERO™ Rainbow Calibration Particles.

Blue-Red-Violet-Near UV (B-R-V-N) Series

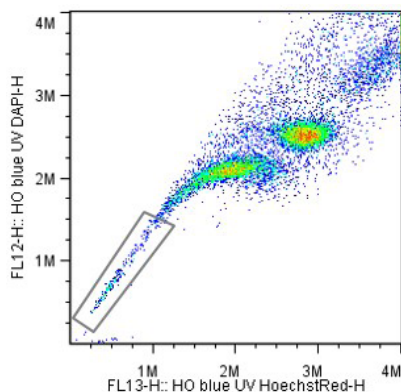
The fully activated instrument includes five channels from the 488 nm (Blue) laser, three from the 638 nm (Red) laser, three from the 405 nm (Violet) laser, and two from the 375 nm (Near UV) laser. The instrument includes 13 band pass filters which can be repositioned as needed. The instrument has the capacity for 15 parameters, including 13 for fluorescence detection. You can activate the number of channels that you need now and add channels later as your research needs grow. See the Configuration Table for a list of available configurations.

Includes 13 Repositionable Band Pass Filters

450/45 (2)	585/42	660/10	690/50	780/60 (2)
525/40 (2)	610/20 (2)	675/30	712/25	

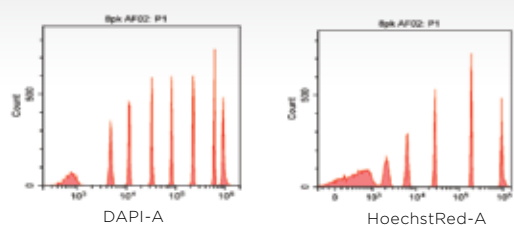
Available Configurations

PART NUMBER	LASERS	FLUORESCENCE CHANNELS	488 NM (BLUE)	638 NM (RED)	405 NM (VIOLET)	375 NM (NEAR UV)
B78557	4	13	5	3	3	2
B78559	3	10	5	3		2
B78558	2	6	4			2



The addition of the **375 nm** laser, in a spatially separated discrete beam spot, enables excellent excitation of Hoescht, DAPI and brilliant UV dyes allowing for use of these dyes without incurring the cost of a true UV laser. Dye Cycle Violet, while useful for performing side population analysis without a true UV laser, requires researchers to compromise on immunophenotyping as it spills over into the FITC and PE channels. Using the **375 nm** laser, researchers can go back to Hoescht for traditional side population analysis. Results are indistinguishable from data collected on much larger traditional instruments.

NEAR UV CHANNELS



Excellent resolution of 8-speak SPHERO™ Rainbow Calibration Particles.

CytoFLEX S Flow Cytometer

Blue-Red-Violet-Infrared (B-R-V-I) Series

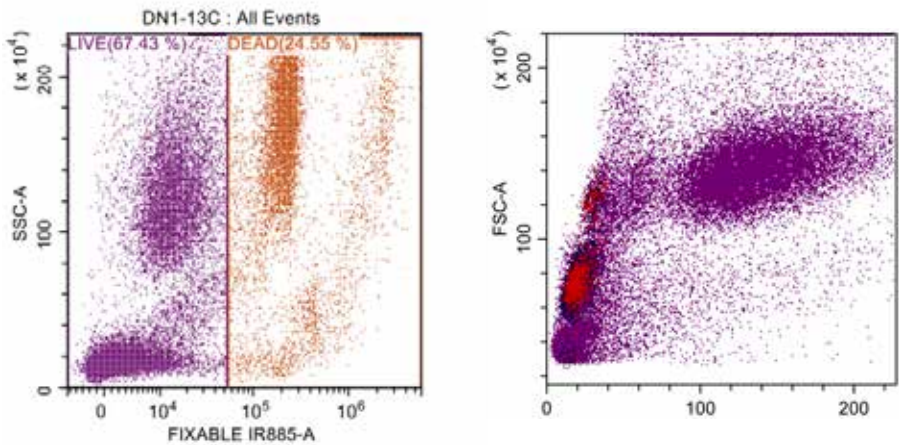
The fully activated instrument includes four fluorescent channels from the 488 nm (Blue) laser, three from the 638 nm (Red) laser, four from the 405 nm (Violet) laser, and two from the 808 nm (Infrared) laser. The instrument includes 13 band pass filters which can be repositioned as needed. You can activate the number of channels that you need now and add channels later as you research needs grow. See the Configuration Table for a current list of available pre-set configurations.

Includes 13 Repositionable Band Pass Filters

450/45	585/42	660/10 (2)	712/25	840/20
525/40 (2)	610/20	690/50	763/43 (2)	885/40

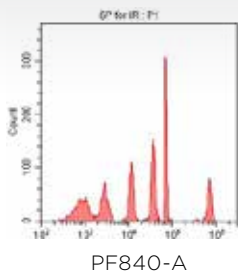
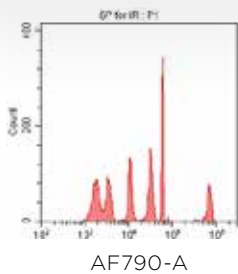
Available Configurations

PART NUMBER	LASERS	FLUORESCENCE CHANNELS	488 NM (BLUE)	638 NM (RED)	405 NM (VIOLET)	808 NM (INFRARED)
C01161	4	13	4	3	4	2
C01160	3	10	4		4	2
C01159	3	9	4	3		2
C01158	2	6	4			2



The addition of the 808 nm laser to the CytoFLEX S series provides additional fluorescent channels not only for use of viability dyes but also bright markers with minimal spectral overlap into traditional channels.

INFRARED CHANNELS



Resolution of SPHERO™
Fluorescent IR Flow
Cytometer Particles.

Blue-Violet-Yellow Green-Near UV (B-V-Y-N) Series

The fully activated instrument includes two fluorescent channels from the 488 nm (Blue) laser, four from the 405 nm (Violet) laser, four from the 561 nm (Yellow Green) laser, and two from the 375 nm (Near UV) laser. The instrument includes 12 band pass filters which can be repositioned as needed. You can activate the number of channels that you need now and add channels later as your research needs grow. See the Configuration Table for a current list of available pre-set configurations.

Includes 13 Repositionable Band Pass Filters

450/45 (2)	585/42	660/10	690/50 (2)
525/40 (2)	610/20 (2)	675/30	780/60

Available Configurations

PART NUMBER	LASERS	FLUORESCENCE CHANNELS	488 NM (BLUE)	405 NM (VIOLET)	561 NM (YELLOW GREEN)	375 NM (NEAR UV)
B78560	4	12	2	4	4	2
B96619	3	10	2	4	4	
B78561	3	8	2		4	2
B96618	2	6	2		4	
C02949	2	4	2		2	

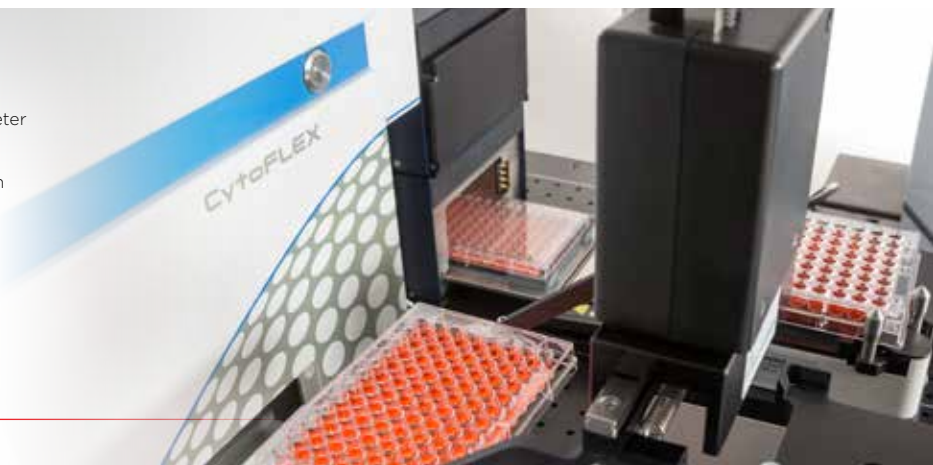


For Even Higher Throughput Applications

Gain flexibility in your day by integrating your CytoFLEX Flow Cytometer to the Biomek i-Series Instruments for automated sample processing and data acquisition. Assay plates are transferred with the Biomek gripper directly to the CytoFLEX Flow Cytometer. Sample preparation [well] data, such as sample ID, is correlated with the information collected from the flow cytometer. Automate your complete cellular workflow with one trusted partner.

If you already have an automation solution, the CytExpert is an open platform. Our sales team can assist you in integrating the CytoFLEX Flow Cytometer based upon your workflow requirements.

Visit biomek.beckman.com to learn more about the i-Series



CytoFLEX LX Flow Cytometer

The CytoFLEX LX models bring up to six laser instruments to the research community providing up to 21 fluorescent channels.

Blue-Red-Violet-Yellow Green-Near UV-Infrared (B-R-V-Y-N-I) Series

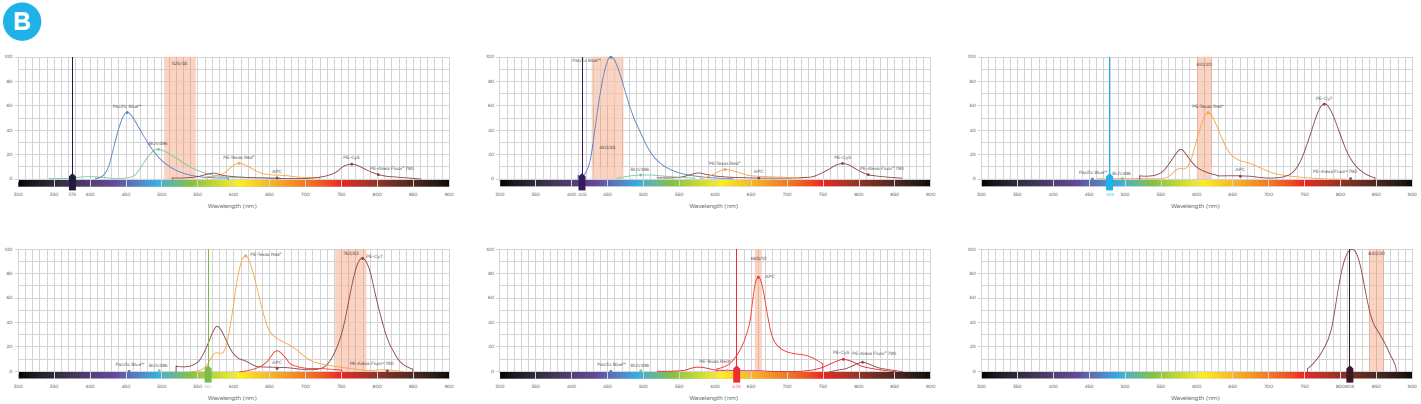
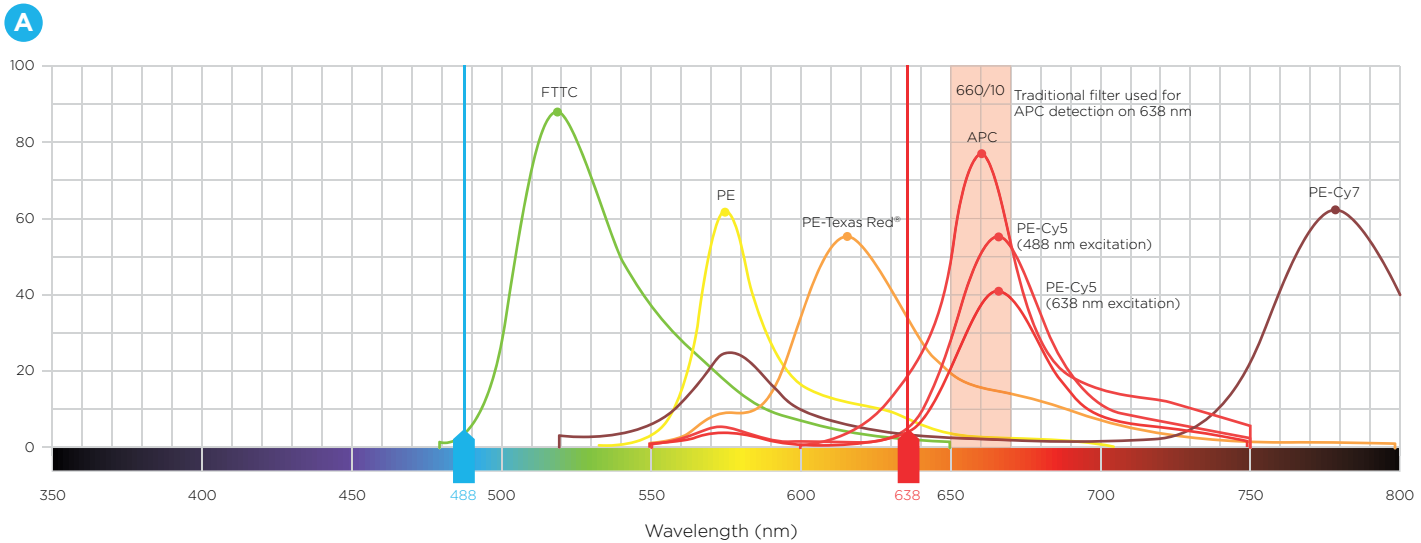
The fully activated instrument includes three fluorescent channels from the 488 nm (Blue) laser, three from the 638 nm (Red) laser, five from the 405 nm (Violet) laser, five from the 561 nm (Yellow) laser, three from the 375 nm (Near UV) laser, and two from the 808 nm (Infrared) laser. The instrument includes 22 band pass filters which can be repositioned as needed. You can activate the number of channels that you need now and add channels later as you research needs grow. See the Configuration Table for a current list of available pre-set configurations.

Band Pass Filters

405/10	450/45 (2)	525/40 (3)	585/42	610/20 (3)	660/10 (2)	675/30 (2)
690/50	710/50	712/25	763/43 (3)	840/20	885/40	

Available Configurations

PART NUMBER	LASERS	FLUORESCENCE CHANNELS	488 NM (BLUE)	638 NM (RED)	405 NM (VIOLET)	561 NM (YELLOW GREEN)	375 NM (NEAR UV)	808 NM (INFRARED)
C00445	6	21	3	3	5	5	3	2
C00446	5	19	3	3	5	5	3	



Simplify Complex Experiments. Panel A demonstrates spectral overlap of 6 common fluorochromes, FITC, PE, Texas Red, APC, PC5 and APC – Cy7 excited by two lasers, 488 nm and 638 nm. Cross laser excitation of PC-Cy5 into the APC channel is also indicated. In Panel B, expanding the available color palette provides flexibility to optimize panel design for efficient marker detection. The fluorochromes, BV496, Pacific Blue, PE-Texas Red, PE-Cy7, APC, and AF790, are excited by six different lasers to minimize compensation requirements.

Blue-Red-Violet-Yellow-UV-Infrared (B-R-V-Y-U-I) Series

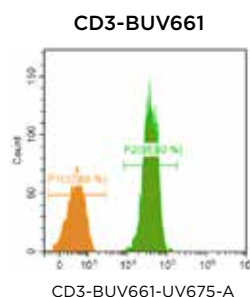
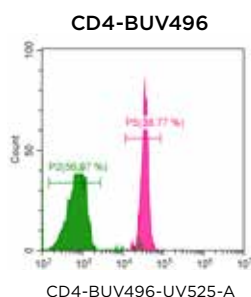
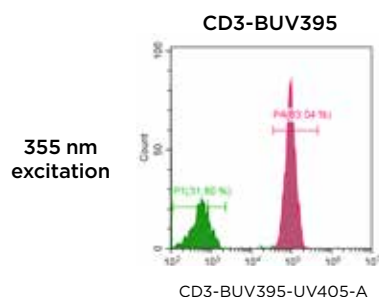
The fully activated instrument includes three fluorescent channels from the 488 nm (Blue) laser, three from the 638 nm (Red) laser, five from the 405 nm (Violet) laser, five from the 561 nm (Yellow Green) laser, three from the 355 nm (UV) laser, and two from the 808 nm (Infrared) laser. The instrument includes 22 band pass filters which can be repositioned as needed. You can activate the number of channels that you need now and add channels later as your research needs grow. See the Configuration Table for a current list of available pre-set configurations.

Band Pass Filters

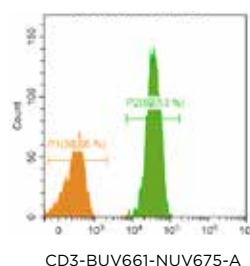
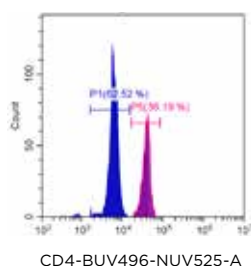
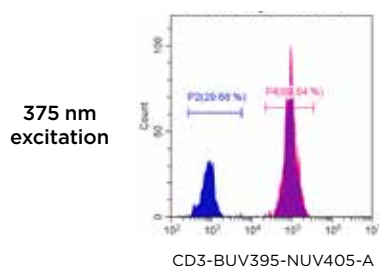
405/10	405/30	450/45	525/40 (3)	585/42	610/20 (3)	660/10 (2)	675/30 (2)
690/50	710/50	763/43 (3)	712/25	763/43 (3)	840/20	885/40	

Available Configurations

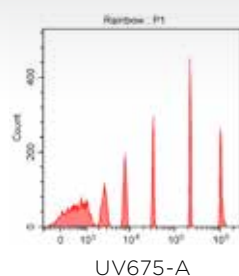
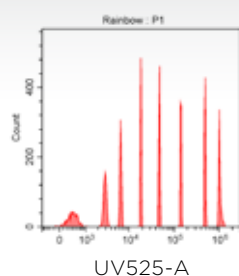
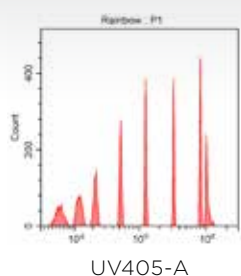
PART NUMBER	LASERS	FLUORESCENCE CHANNELS	488 NM (BLUE)	638 NM (RED)	405 NM (VIOLET)	561 NM (YELLOW GREEN)	355 NM (UV)	808 NM (INFRARED)
C11186	6	21	3	3	5	5	3	2
C11185	5	19	3	3	5	5	3	
C11183	4	14	3	3	5		3	
C11184	4	14	3		5	3	3	



Comparison of UV versus Near UV excitation sources for Brilliant UV fluorochromes. Whole blood (donor 1, BUV395 and BUV496; donor 2, BUV661) was stained with the indicated reagent and red blood cells removed with VersaLyse lysing solution. Data was collected with a CytoFLEX LX equipped with either a 355 nm UV laser or a 375 nm Near UV laser. The lymphocyte gate (Lymphs) was set based upon forward and side scatter characteristics (not shown). Histograms show fluorescence signals with gates applied on positive and negative staining populations to obtain statistics.



UV CHANNELS



Accessories and Consumables

Start up kits are available to ensure that when your unit arrives you will be ready to start your experiments. We also offer kits and consumables for the routine use and maintenance. Each instrument contains standard band pass filters. We also offer a variety of non-standard filters for specialized applications.

Startup Kits* & Preventive Maintenance Kits

Part Number	Description
B55031	CytoFLEX Startup Reagents (tubes)
C14907	CytoFLEX Startup Reagents (plates)
C14908	CytoFLEX Startup Reagents (IR/tubes)
C14909	CytoFLEX Startup Reagents (IR/plates)

Part Number	Description
C02943	Preventive Maintenance Kit
A04-1-0048	Peristaltic Sample Tubing Replacement Kit
A04-1-0041	Sheath Filter

*Includes daily QC, sheath fluid, FlowClean, Contrad, and sample tubes or plates

Consumables & Miscellaneous Replacement Parts

Part Number	Description
81911	Contrad 70
B53230	CytoFLEX Daily QC Fluorospheres
C06147	CytoFLEX Daily IR QC Fluorospheres
B51503	CytoFLEX Sheath Fluid
A64669	FlowClean Cleaning Agent
609844	Microtiter Plates, 96-well Flat Bottom
609801	Microtiter Plates, 96-well V Bottom
B63213	Plate Loader Sample Probe (with tubing to attach to plate assembly)

Part Number	Description
B71294	Sample Needle, 113 mm (orange bead)
A04-1-0034	Sample Needle, 115 mm (blue bead)
A04-1-0038	Deep Clean Solution Bottle Kits
A04-1-0036	Sheath Bottle Kit
A04-1-0037	Waste Bottle Kit
7547155	10 L Waste Tank
B86549	10 L Waste/Sheath Tanks Wiring Harness

Optional Bandpass Filters

Part Number	Description
A01-1-0048	405/10 nm Bandpass Filter
B99146	405/30 nm Bandpass Filter
A01-1-0049	450/45 nm Bandpass Filter
B90300	450/45 nm Bandpass with OD1 Filter
A01-1-0050	488/8 nm Bandpass Filter
B76128	510/20 nm Bandpass Filter
B90294	510/20 nm Bandpass with OD1 Filter
B76124	515/20 nm Bandpass Filter
A01-1-0051	525/40 nm Bandpass Filter
B90303	525/40 nm Bandpass with OD1 Filter
B76139	550/30 nm Bandpass Filter
B72627	561/6 nm Bandpass Filter
B76121	585/15 nm Bandpass Filter
B71089	585/30 nm Bandpass Filter
A01-1-0052	585/42 nm Bandpass Filter

Part Number	Description
B76117	595/20 nm Bandpass Filter
A01-1-0053	610/20 nm Bandpass Filter
B90297	610/20 nm Bandpass with OD1 Filter
A01-1-0054	638/6 nm Bandpass Filter
A01-1-0055	660/10 nm Bandpass Filter
B78244	675/30 nm Bandpass Filter
A01-1-0056	690/50 nm Bandpass Filter
B71092	710/50 nm Bandpass Filter
A01-1-0057	712/25 nm Bandpass Filter
B78217	740/35 nm Bandpass Filter
B99143	763/43 nm Bandpass Filter
A01-1-0058	780/60 nm Bandpass Filter
B78220	819/44 nm Bandpass Filter
B99144	840/20 nm Bandpass Filter
B99145	885/40 nm Bandpass Filter

Beckman Coulter offers expertly designed and optimized pre-formulated antibody panels using our DURA Innovation dry formulation technology. Each panel provides key markers for characterizing the specified cellular population and includes enough reagents for 25 tests. Depending on your CytoFLEX configuration you may extend the panels with additional markers of interest in liquid format.

405 nm		488 nm					638 nm					
450/45	525/40	525/40	585/42	610/20	690/50	780/60	660/10		712/25		780/60	
PB	KrO	FITC	PE	ECD	PC5.5	PC7	APC	AF647	AF700	APC-A700	APC-A750	AF750
DuraClone Immunophenotyping (IM)												
Basic Tube (Part Number B53309)												
-	CD45	CD16	CD56	CD19	-	CD14	CD4	-	CD8	-	CD3	-
B Cell Tube (Part Number B53318)												
IgM	CD45	IgD	CD21	CD19	-	CD27	CD24	-	-	-	CD38	-
T Cell Subsets Tube (Part Number B53328)												
CD57	CD45	CD45RA	CCR7	CD28	PD1	CD27	CD4	-	CD8	-	CD3	-
Dendritic Cells Tube (Part Number B53351)												
HLA-DR	CD45	CD16	Lin**	-	CD1c	CD11c	Clec9A	-	-	CD123	-	-
TCRs Tube (Part Number B53340)												
TCRVδ2	CD45	TCRVδ	TCRαβ	HLA-DR	-	TCRVδ1	CD4	-	CD8	-	CD3	-
Treg Tube (Part Number B53346)												
Helios	CD45	CD45RA	CD25	-	CD39	CD4	-	FoxP3	-	-	CD3	-
Granulocytes Tube (Part Number B88651)												
CD15	CD45	CD294	-	CD16	CD33	CD11b	PD-L1	-	-	Lin***	CD62L	-
Count Tube (Part Number C00162)												
-	-	CD45	Counting Beads	-	7-AAD	-	-	-	-	-	-	-
DuraClone Immune Function (IF)												
T Activation (Part Number B88649)												
CD4	-	IFNγ	TNFα	-	-	IL-2	-	-	CD8	-	-	CD3
T Helper Cell (Part Number C04666)												
IL-17A	-	IFNγ	-	-	-	IL-4	CD4	-	-	-	-	CD3
DuraClone Rare Event (RE)												
CLB Tube (Part Number B80393)												
CD20	CD45	CD81	ROR-1	-	CD79b	CD19	CD5	-	-	-	CD43	-
PC Tube (Part Number B80394)												
CD38	CD45	CD81	CD27	-	CD19	CD200	CD138	-	-	-	CD56	-
ALB Tube (Part Number C00163)												
-	CD45	CD58	-	CD34	CD10	CD19	-	-	-	CD38	CD20	-

** CD3/CD14/CD19/CD20/CD56

*** CD3/14/CD19/CD56



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For over 80 years Beckman Coulter has driven innovation. We remain committed to shaping flow cytometry technology to fit seamlessly into your lab's workflow and to provide an optimal user experience. When you choose a Beckman Coulter instrument you receive the highest level of expertise, innovation, and quality assurance.

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