



Navios EX FLOW CYTOMETER

POWERFUL, DEPENDABLE
FLOW CYTOMETRY



EVERY
event matters.

 **BECKMAN
COULTER**
Life Sciences



BECAUSE EVERY EVENT MATTERS

The Navios EX flow cytometer offers a solution for advanced cytometry applications with optimized workflows for high throughput laboratories. Navios EX delivers more of what matters to your lab—up to 12 parameters for high complexity assays; sensitivity and resolution; and quality, reproducible results. This is the next generation leveraging the laser and optics technology of our successful CytoFLEX research platform. Robust performance means peace of mind, because when analyzing important samples, every event matters.

With the 10 color capabilities of the Navios EX flow cytometer you can collect additional data points from each sample. This reduces the number of samples to prepare along with the possible errors that go with them.

Navios EX FLOW CYTOMETER



The Navios EX offers up to three high powered solid state, independently-focused diode lasers with an innovative integrated optics flow cell design. Navios EX is equipped with electronics that provide accurate and efficient digital signal processing at high event rates over a wide dynamic range of fluorescence intensities. These benefits are packaged in a compact analyzer that delivers stable performance over long periods of time and across a wide range of operating temperatures.

- Efficient workflow through automated data management from sample identification through to data reporting
- Up to 12 parameters for identification of populations in complex advanced applications
- Clear population resolution with new double power lasers and integrated optics
- Innovative scatter detection technology provides flexibility for microparticle and dim fluorescent population analysis

PART NUMBER	405 nm EXCITATION		488 nm EXCITATION					638 nm EXCITATION		
	PB ¹	KrO ²	FITC	PE	ECD	PC5.5	PC7	APC	APC-A700 ³	APC A750 ⁴
B83535 ⁵	•	•	•	•	•	•	•	•	•	•
B86672 ⁶			•	•	•	•	•	•	•	•
B86735 ⁷			•	•	•	•	•	•		

1. Pacific Blue 2. Krome Orange 3. APC Alexa Fluor 700 4. APC Alexa Fluor 750
 5. Consisting of B80910 Navios EX 10 colors / 3 lasers, Acquisition Software Kit and Workstation
 6. Consisting of B80911 Navios EX 8 colors / 2 lasers, Acquisition Software Kit and Workstation
 7. Consisting of B80912 Navios EX 6 colors / 2 lasers, Acquisition Software Kit and Workstation

WORKFLOW EFFICIENCY FOR HIGH THROUGHPUT LABORATORIES

Startup

The Navios EX task scheduler warms up the system at a predetermined time so that it is ready to start when you are. The scheduler can also be used to shut down the instrument when a work list has finished for truly walk-away data acquisition.

Integrate with Automated Sample Preparation

The Navios EX is fully compatible with automated sample preparation modules, providing a seamless workflow solution. The PrepPlus 2¹ delivers precision pipetting of reagents, samples, controls and calibrators into secondary tubes; flexible software programming of reagents, controls and pipetting parameters; and improved safety with closed-tube sampling. Whole blood sample preparation is automated when run in conjunction with the TQ-Prep¹ for rapid, no-wash lyse and fix. The standard 32-tube carousel allows for walk-away sample processing and handles high volumes of tests with ease.

Sample Tracking

The Navios EX incorporates four-way on-board barcode identification (Carousel ID, Position ID, Primary Sample ID, and Daughter Tube ID). With the Navios Platform it's easy to track and maintain sample identification from order entry to report generation, and to trace sample status in real time. With its single tube vortex capability, sample integrity is maintained throughout the run.



System Stability

The Navios EX's thermoregulation system maintains the optical area at a consistent temperature, assuring reliable data while minimizing laser downtime and maintaining compensation settings.

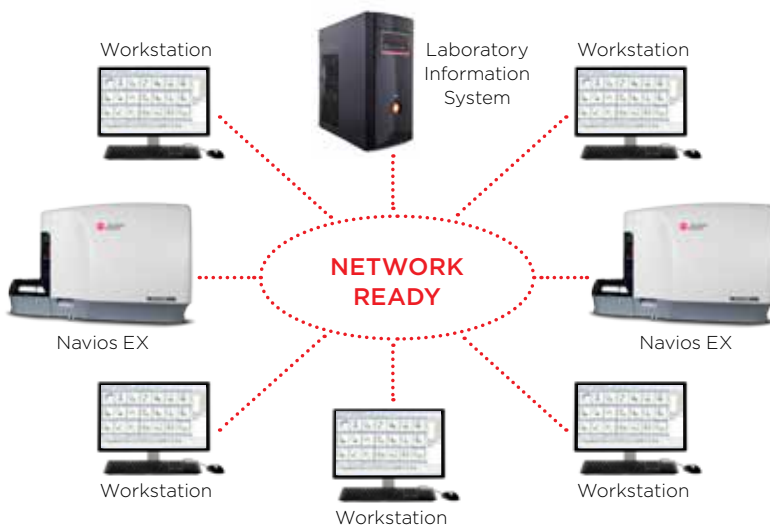
Maximize Instrument Uptime

The optional ProService provides secure performance monitoring and diagnostic capability. The system alerts operators to problems and following laboratory permission, connects directly to technical support and field engineers to minimize downtime by triggering preemptive service actions. Our powerful diagnostic software can see into nearly all aspects of instrument functionality, including sensors, detectors, hardware and software, to enable us to interact directly with the system. Service engineers can diagnose and even correct problems remotely and ensure service visits are minimally intrusive by having a thorough instrument history before arrival.

Standardization

LIS & Middleware Connectivity

The Navios EX is network ready and can be bi-directionally interfaced with Laboratory Information Systems. Bi-directional interface enables you to manage test orders, create work lists automatically, minimize manual data entry, track samples throughout the testing process, and eliminate transcription errors in the reporting process. The system automatically sends test requests and demographic information to the Navios EX, and transmits test results that meet user defined criteria. Additionally, with the ability to map several Navios EX result databases to a networked review station in a centralized database, the system facilitates maximizing instrument usage, allowing review and release of test data offline to the LIS or other middleware solution.²



Part Number	Description
8547008	IsoFlow™ Sheath Fluid (4 x 1.8 L)
8546859	IsoFlow™ Sheath Fluid (4 x 10 L)
A63493	Flow-Check Pro Fluorospheres
A63492	Flow-Set Pro Fluorospheres
A64669	FlowClean Cleaning Agent

The Navios platform is the culmination of 20 years of flow cytometry developments in standardization presented in a 10-color system. The result is a system that automates the standardization workflow using target channels to enable consistent results over time as well as across sites using shared targets.

The current state of the art provides:

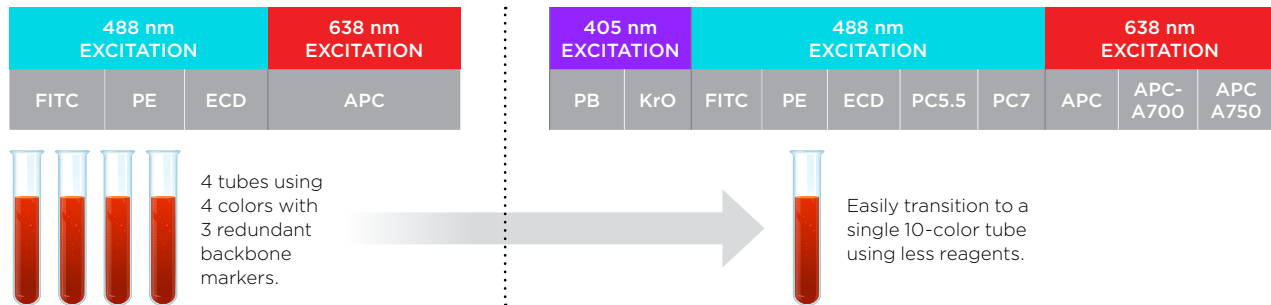
- Multi-site comparable results
- Assay Quality Assurance
- Day-to-day stability
- Minimized user variability
- Minimized user interactions

1. The PrepPlus 2 and TQ-Prep is CE-marked for in vitro diagnostic use. The TQ-Prep Workstation is intended to prepare leukocytes from whole blood for in vitro diagnostic use when used with the ImmunoPrep Reagent System and Beckman Coulter IVD applications on Beckman Coulter flow cytometers. The PrepPlus 2, when used in combination with the TQ-Prep Workstation, is intended to prepare human whole blood for in vitro diagnostic use with Beckman Coulter IVD applications on Beckman Coulter flow cytometers.

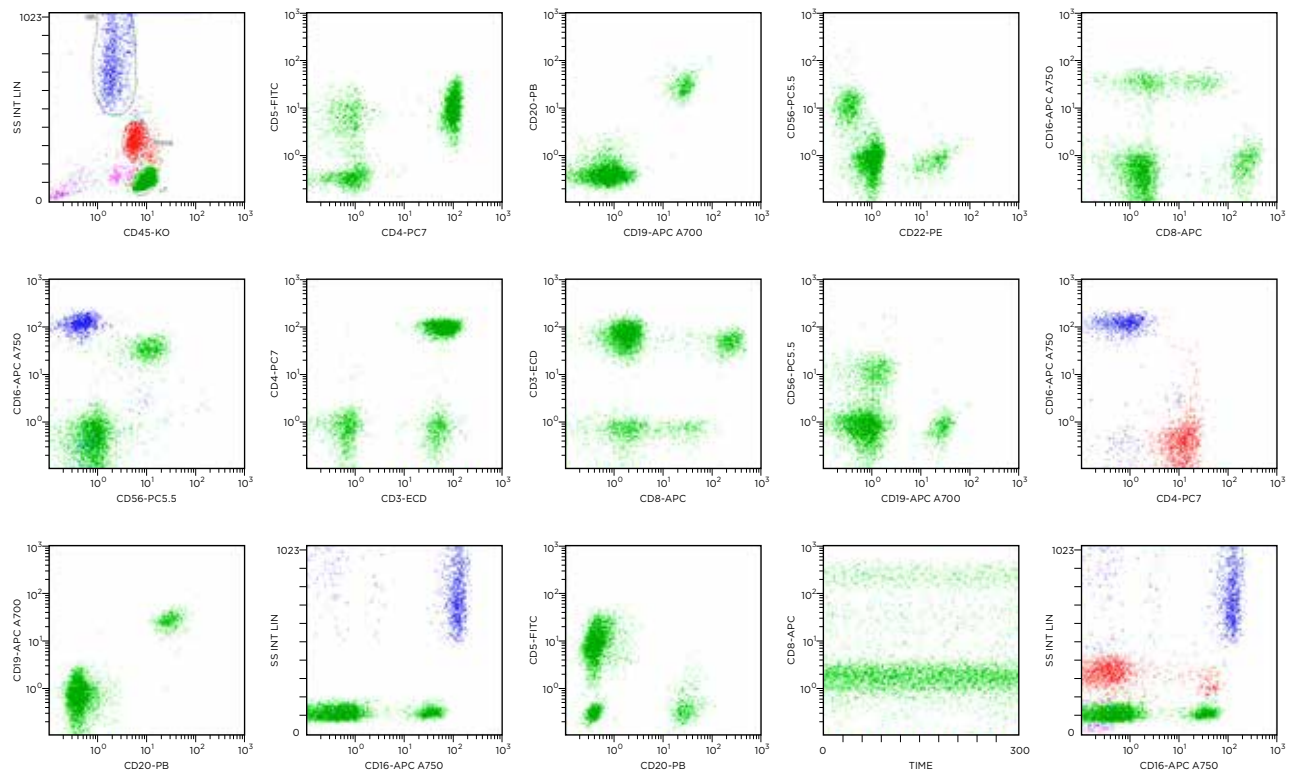
2. Beckman Coulter recommends that all results be reviewed prior to release.

MORE COLORS, MORE INFORMATION

With the 10-color capability of the Navios EX flow cytometer you can collect additional information from your user defined assays. When using a 10-color solution, sample preparation is reduced along with possible errors that go with it.



Complex mixtures of populations can be clearly resolved using 10 colors reducing reagent redundancy across tubes.



ABOVE: Apparent healthy donor blood was prepared using Immuno-Prep Lyse less than 8 hours post collection and stained with the indicated specificities.

RESOLUTION THROUGH INNOVATION

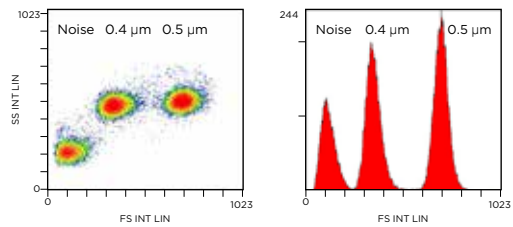
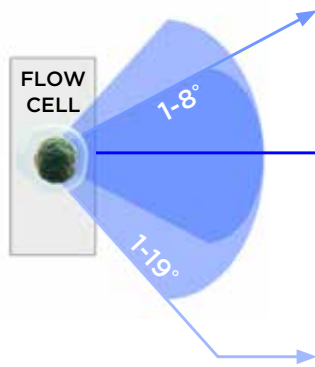
Achieve separation to resolve small and dim cell populations

The patented electronics design in the Navios EX provides 6 decades of sensitivity and resolution to distinguish a wide range of populations. With 20-bit resolution, the system offers 1,048,576 channels of dynamic range for flexibility in experiment setup.

The system's digital pulse processing design has a 40 MHz sampling rate which collects a great amount of data per event. This is designed to minimize errors and preserves sensitivity and resolution even at high event rates. At approximately 25,000 events per second, the Navios EX electronics also maintains 90% event processing efficiency. Data processing accuracy and efficiency combine to provide confidence to run fast and get results in less time and with less sample.

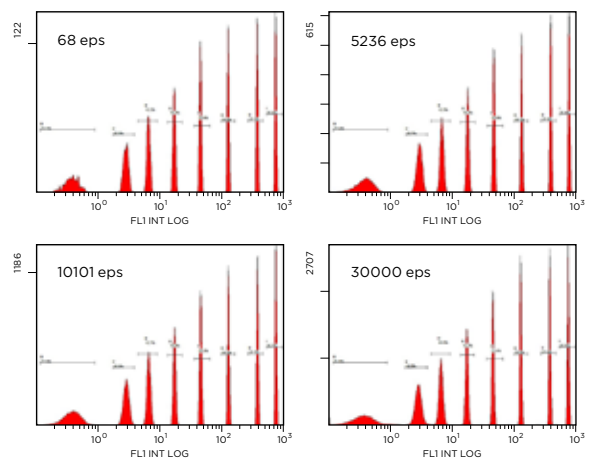
Navios Platform offers innovative enhanced forward scatter

A unique design enables the collection of two different forward scatter angles. The default wide angle (1-19°) setting is better for applications that require distinguishing lymphocytes from debris. The narrow-angle (1-8°) setting is best for measuring larger particles. The Navios EX achieves submicron particle resolution as a result of a unique amplification of the wide angle forward scatter signal as well as low noise in the electronics and the 488 nm laser.



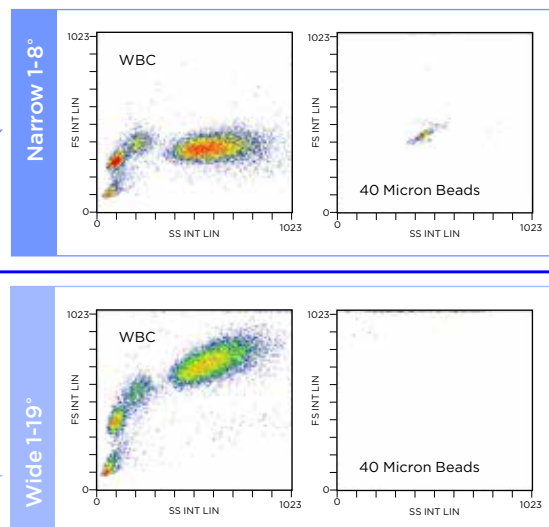
ABOVE: Using the Navios EX enhanced forward scatter setting, 0.404 micron particles are very clearly resolved from noise, but even more impressive is the resolution of 0.404 micron particles from 0.5 micron particles on forward scatter.

BELOW: SPHERO Rainbow Calibration Particles run at the indicated rates show no loss in resolution. eps = events per second



BELOW: The first set of plots show the white blood cell (WBC) pattern using both wide and narrow settings. The second set of plots show the scatter pattern for 40 micron beads in both settings. Variations in the scatter pattern demonstrate the utility of the narrow scatter angle for detecting larger particles.

2 forward scatter angles



Choose Beckman Coulter for Benchmark Expertise and Innovation

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 solution you receive the a high level of expertise, innovation, and quality assurance.

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US	EU
The Navios EX Flow Cytometer is intended for use as an in vitro diagnostic device for immunophenotyping using up to four fluorescent detection channels using a blue (488 nm) laser and two light scatter detection channels. It is intended for use with in vitro diagnostic (IVD) assays and software that are indicated for use with the instrument.	The Navios EX is a flow cytometer intended for the qualitative and quantitative measurement of biological and physical properties of cells and other particles to generate multiparametric results for in vitro diagnostic use. The instrument can simultaneously measure forward scatter, side scatter, and up to ten fluorescent dyes using three solid-state lasers at 488 nm, 638 nm and 405 nm. Therefore, the instrument can perform correlated multiparameter analyses of individual cells.

CYTO-STAT tetraCHROME CD45-FITC/CD4-RD1/ CD8-ECD/CD3-PC5 and CYTO-STAT tetraCHROME CD45-FITC/CD56-RD1/CD19-ECD/CD3-PC5 Monoclonal Antibody Reagents are for use on the COULTER EPICSXL/XL-MCL, Cytomics FC 500, Navios, and Navios EX Flow Cytometers. The reagents are also used with the tetraONE System for COULTER EPICS XL/XL-MCL Flow Cytometer, the tetraCXP System for FC 500 Flow Cytometry System, Navios tetra Software for the Navios System, and Navios EX tetra Software for the Navios EX System. Used alone or in combination with the automated systems, the reagents are intended "For In Vitro Diagnostic Use" and allow simultaneous identification and enumeration of total CD3+, total CD4+, total CD8+, dual CD3+CD4+, dual CD3+CD8+ and/or total CD3+, CD19+ and CD3-CD56+ lymphocyte percentages and absolute counts in whole blood by flow cytometry.^{1,2,3} The systems also provide the CD4/CD8 ratio when using CD45-FITC/CD4-RD1/CD8-ECD/CD3-PC5. These reagents are indicated for use in the immunologic assessment of patients having or suspected of having immune deficiency.

The Navios EX tetra Software is intended for use as an in vitro diagnostic device for immunophenotyping with CYTOSTAT tetraCHROME CD45-FITC/CD4-RD1/ CD8-ECD/CD3-PC5 and CYTO-STAT tetraCHROME CD45-FITC/CD56-RD1/CD19-ECD/CD3-PC5 monoclonal antibody reagents on the Navios EX Flow Cytometer. It provides automated analysis and results for the identification and enumeration of CD3+CD4+, CD3+CD8+, CD3+, CD19+ and CD3-CD56+ lymphocyte percentages and absolute counts in peripheral whole blood. Absolute counts may be determined by the Navios EX Flow Cytometers using Flow-Count Fluorospheres (Single Platform Technology (SPT) Method) or separate hematology results (Dual Platform Method). It is indicated for use in the immunologic assessment of patients having or suspected of having immune deficiency.

The device is not available for sale in all markets, please contact your Beckman Coulter representative for availability.

CLASS 1 LASER PRODUCT



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