



# Navios FLOW CYTOMETER

POWERFUL, DEPENDABLE  
FLOW CYTOMETRY



**EVERY**  
*event matters.*

 **BECKMAN  
COULTER**  
*Life Sciences*



# BECAUSE EVERY EVENT MATTERS

The Navios flow cytometer offers a solution for advanced cytometry applications with workflows for high throughput laboratories. Navios delivers more of what matters to your lab—up to 12 parameters for high complexity assays\*; sensitivity and resolution; and quality, reproducible results. Robust performance means peace of mind, because when analyzing important samples, every event matters.

With the 10 color capabilities of the Navios 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 FLOW CYTOMETER



The Navios offers up to three high powered solid state, independently-focused diode lasers with an innovative integrated optics flow cell design. Navios 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\*
- 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 <sup>1</sup>	KrO <sup>2</sup>	FITC	PE	ECD	PC5.5	PC7	APC	APC-A700 <sup>3</sup>	APC A750 <sup>4</sup>
B47905 <sup>5</sup>	•	•	•	•	•	•	•	•	•	•
B47904 <sup>6</sup>			•	•	•	•	•	•	•	•
B47903 <sup>7</sup>			•	•	•	•	•	•		

1. Pacific Blue 2. Krome Orange 3. APC Alexa Fluor 700 4. APC Alexa Fluor 750  
 5. Consisting of A52103 Navios 10 colors / 3 lasers, Acquisition Software Kit and Workstation  
 6. Consisting of A52102 Navios 8 colors / 2 lasers, Acquisition Software Kit and Workstation  
 7. Consisting of A52101 Navios 6 colors / 2 lasers, Acquisition Software Kit and Workstation

# WORKFLOW EFFICIENCY FOR HIGH THROUGHPUT LABORATORIES

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## Startup

The Navios 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 is compatible with automated sample preparation modules, such as the PrepPlus2 and TQ-Prep. The PrepPlus 2 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-Prep<sup>1</sup> 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 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's thermoregulation system maintains the optical area at a consistent temperature, assuring reliable data while minimizing laser downtime and maintaining compensation settings.

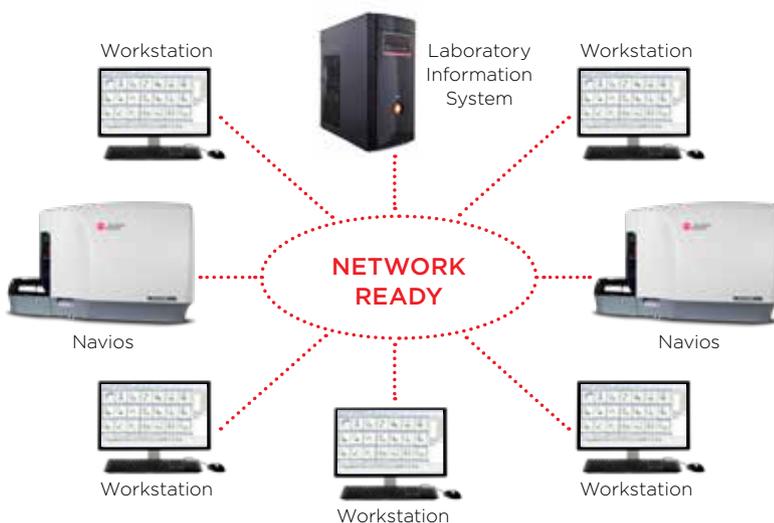
## Increase Uptime with ProService

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 reduce 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 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, and transmits test results. Additionally, with the ability to map several Navios 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.<sup>1</sup>



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:

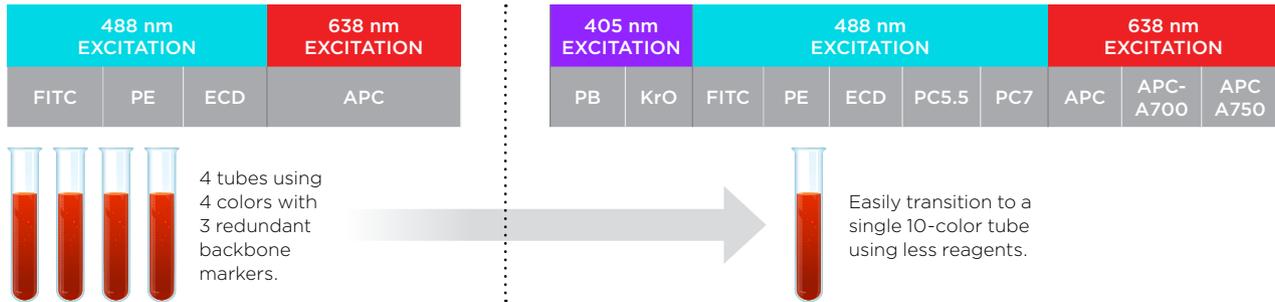
- Multi-site comparable results
- Assay Quality Assurance
- Day-to-day stability
- Minimized user variability
- Minimized user interactions

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

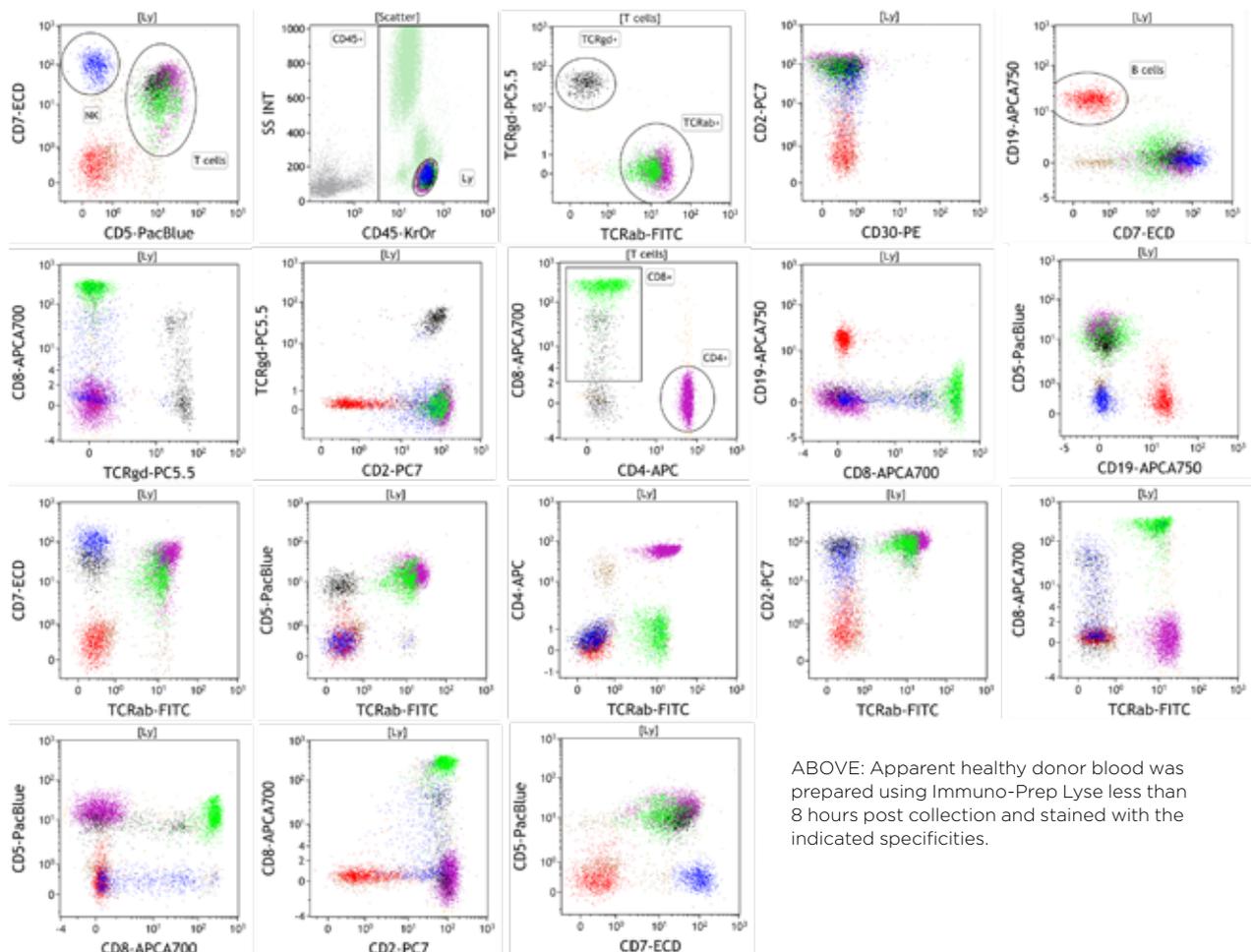
<sup>1</sup> Beckman Coulter recommends that all results be reviewed prior to release.

# MORE COLORS, MORE INFORMATION

With the 10-color capability of the Navios flow cytometer you can collect additional information from your 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.



# RESOLUTION THROUGH INNOVATION

## Achieve separation to resolve small and dim cell populations

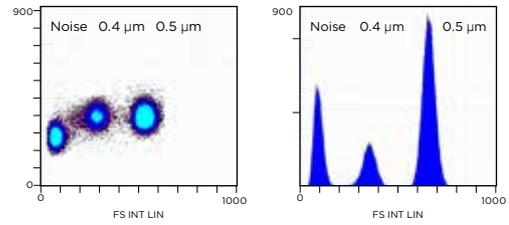
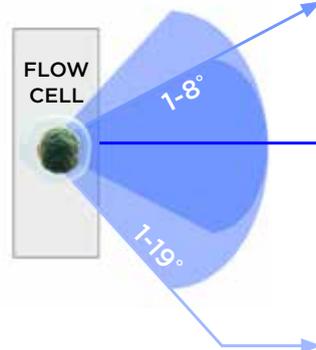
The patented electronics design in the Navios provides 6 decades of sensitivity and resolution to distinguish a wide range of populations. With 20-bit resolution, the system offers 1,048,576 channels of dynamic range for flexibility in experiment setup.

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 reduce errors and preserves sensitivity and resolution even at high event rates. At approximately 25,000 events per second, the Navios 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.

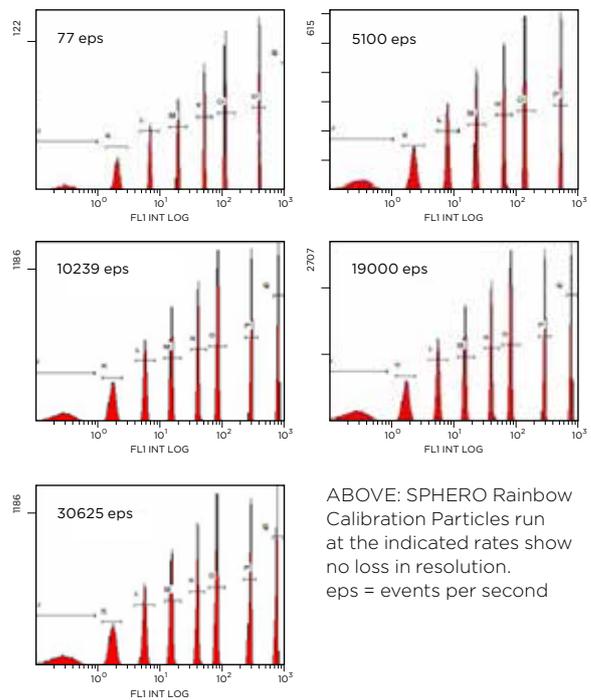
## Navios Platform offers innovative enhanced forward scatter

An innovative 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 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.

SIDE: 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.

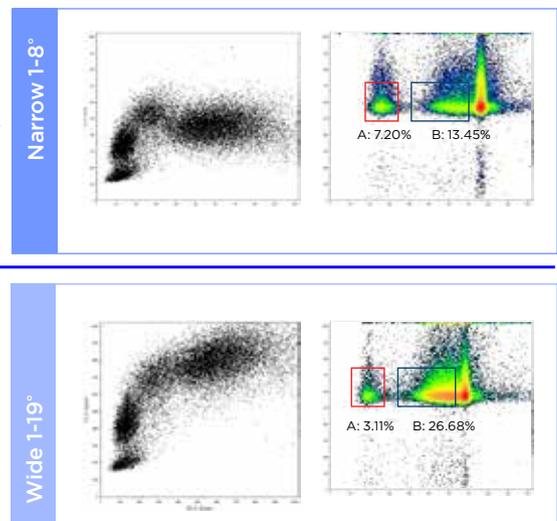


ABOVE: Using the Navios enhanced forward scatter setting, 0.404 micron particles are very clearly resolved from noise, but even more impressive is the resolution of 0.404 micron particles from 0.5 micron particles on forward scatter.



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

### 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.

**Contact your local Beckman Coulter sales representative.**

[beckman.com](http://beckman.com)

*\* Navios is CE marked for 10-color in-vitro diagnostic use. In the U.S., Navios is intended for use as an in-vitro diagnostic device for immunophenotyping with Navios tetra software and CYTOSTAT tetraCHROME reagents. All other uses are for research use only.*

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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