



# NAVIOS

## SPECIFICATION & PERFORMANCE CHARACTERISTICS



### OPTICS

#### Lasers

##### LASERS/POWER OUTPUT

Blue Solid State Diode: 488 nm, 22 mW laser output

Red Solid State Diode: 638 nm, 25 mW laser output

Violet Solid State Diode: 405 nm, 40 mW laser output\*\*

##### CONFIGURATION

125  $\mu$ m spatially separated beam spots

##### MINIMUM LASER POWER AT FLOW CELL

Blue: > 20 mW

Red: > 20 mW

Violet: > 30 mW\*\*

#### Flow Cell

150 x 460  $\mu$ m rectangular quartz

#### Collection Optics

Gel coupled 1.2 NA lens

#### Optical Filters

Easily interchangeable optical filters

Optimal 18-degree reflective optics for minimal light loss

#### Detector Filters

Forward Scatter: 488/10

Blue Laser: 525/40, 575/30, 620/30, 675/20\*\*, 695/30, 755LP

Dyes: FITC, PE, ECD, PC5 or PEC5.5, PECy7

Red Laser: 660/20, 725/20, 755 LP

Dyes: APC or Alexa Fluor<sup>†</sup> 647, APC-Alexa Fluor 700, APC-Cy7, APC-Alexa Fluor 750

Violet Laser:\*\* 450/50, 550/40

Dyes: Pacific Blue<sup>†</sup>, Pacific Orange<sup>†</sup>, Krome Orange

### Detectors

#### FORWARD SCATTER DETECTOR

Fourier design providing up to 3 measurements of forward angle

#### SIDE SCATTER DETECTOR

Independently focused high performance photodiode with electronic attenuation

#### FLUORESCENCE DETECTORS

F L1- FL10 Fluorescent Detectors (7-10 optional\*\*)

### SAMPLE PROCESSING

#### Flow Rates

Continuous pressure is applied to the sample tube based on user selected flow rates: Low, Medium and High

#### Sheath Consumption

Acquisition: 780 mL/hour

Carryover: < 0.1%

Compatibility: 12 x 75 mm tubes

#### Acquisition Modes

32 tube Multi Carousel Loader (MCL)

Single tube sampling mode

Automated work list acquisition

Manual work list mode

#### Mixing

The MCL patented design vortexes each tube individually before sample acquisition

#### Barcode Reading

Carousel number, tube location and tube barcode

#### Biosafety

Biohazard contained wash station thoroughly rinses sample probe

## Fluidics

- 10 L IsoFlow External Sheath Container
- 20 L Waste Container
- 1.5 L FlowClean Cleaning Fluid Tank
- 1.5 L Internal Sheath Tank

## SIGNAL PROCESSING

### Flow Rates

- Dynamic Range: 20-bit data acquisition
- Workstation Resolution: 1,048,576 channels
- Digital Sampling Rate: 40 MHz
- Digital Accuracy: < 5% error
- Parameters:

- Five different signals available from each detector: Integral linear and logarithmic, Peak linear and logarithmic and True Time of Flight linear
- Time, Ratio
- Selection of up to 62 parameters

## PERFORMANCE CHARACTERISTICS †

### Throughput

Throughput of 10,000 normal Whole Blood Lymphocytes is 80 tubes/hour Up to 88 tubes an hour at 10,000 events per second of concentrated beads

### Scatter Resolution

Resolves 0.404 µm diameter particles from background noise using forward scatter with maximum detection up to 40 µm diameter particles

### Fluorescence Sensitivity Threshold Levels

- FITC 112 MESF PE 78 MESF
- PECy5 15 MESF APC 75 MESF

### Acquisition Rate

25,000 events per second

## REMOTE DIAGNOSTICS

PROService

PROService compatible; high-speed Internet connectivity with optional hardware for remote system monitoring, diagnostics and repair

## WORKSTATION (MINIMUM SPECIFICATIONS)

- Operating System: Windows 7 Professional
- RAM: 4 GB
- Processor Frequency: Intel Core †† i7 3.7 GHz
- Hard Drive: Two (2) 500 GB in a Parallel, RAID 1 System
- Removable Media Support: DVD 18X, CD 40X
- Network Ports: 3, 2 available for networking
- Video Card: PCI express 1 GB DDR3
- Support for 1080p resolution dual monitors
- USB Ports: 8
- RoHS Compliant
- Monitor: 22-inch Flat Panel LCD Monitor

## INSTALLATION REQUIREMENTS

- Power: Universal Power Supply (100-240 VAC, 50-60Hz)
- Operating Temperature: 16 - 32°C (60-90°F)
- Noise: ≤ 60 db

### Physical Dimensions

	Cytometer		Supply Cart		
Weight	104 kg	230 lbs	Weight	30 kg	67 lbs
Width	96 cm	38 in	Width	72.4 cm	28.5 in
Height	61 cm	24 in	Height	29.8 cm	11.75 in
Depth	70 cm	28 in	Depth	49.5 cm	19.5 in

## ORDERING INFORMATION

### Part Number/Description

- B47903 6 colors, 2 lasers (5+1 configuration)
- B47904 8 colors, 2 lasers (5+3 configuration)
- B47905 10 colors, 3 lasers (5+3+2 configuration)

\*\* Optionally available depending on upgraded system configuration

\*\*\* Optional filter included

† Alexa Fluor, Pacific Blue, and Pacific Orange are registered trademarks of Molecular Probes, Inc.

†† Intel and Intel Core are trademarks of Intel Corporation in the U.S. and/or other countries.

‡ These characteristics can be influenced by a number of factors relating to instrument setup, sample type, number of parameters selected, protocol definition and number of events acquired. Refer to Instrument Instructions for User for more information on Performance Characteristics.

For more information about the Navios Flow Cytometer, contact your local Beckman Coulter office or visit [www.NaviosNow.com](http://www.NaviosNow.com)



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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.

For Beckman Coulter's worldwide office locations and phone numbers, please visit "Contact Us" at [beckmancoulter.com](http://beckmancoulter.com)

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CLASS 1 LASER PRODUCT