

NAVIOS

Specifications & Performance Characteristics



OPTICS

Lasers

LASERS/POWER OUTPUT

- Blue Solid State Diode: 488nm, 22mW laser output
- Red Solid State Diode: 638nm, 25mW laser output
- Violet Solid State Diode: 405nm, 40mW laser output**

CONFIGURATION

- 125 µm spatially separated beam spots

MINIMUM LASER POWER AT FLOW CELL

- Blue: > 20mW
- Red: > 20mW
- Violet: > 30mW**

Flow Cell

- 150 x 460µm 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[†] 647, APC-Alexa Fluor 700, APC-Cy7, APC-Alexa Fluor 750
- Violet Laser:** 450/50, 550/40
- Dyes: Pacific Blue[†], Pacific Orange[†], 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: 780mL/hour
- Carryover: < 0.1%
- Compatibility: 12 x 75mm 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

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

SIGNAL PROCESSING

Flow Rates

Dynamic Range: 20-bit data acquisition
 Workstation Resolution: 1,048,576 channels
 Digital Sampling Rate: 40MHz
 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 0.404µm diameter particles from background noise using forward scatter with maximum detection up to 40µm 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: 4GB
 Processor Frequency: Intel® Core™ i7 3.7GHz
 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 1GB 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: ≤ 60db

Physical Dimensions

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

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.

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For more information about the Navios Flow Cytometer, contact your local Beckman Coulter office or visit: www.NaviosNow.com

innovating to improve patient care.



CLASS 1 LASER PRODUCT.

CE marked for 10 color in-vitro diagnostic use.

In U.S., Navios is intended for use as an in vitro diagnostic device for immunophenotyping with Navios tetra software and CYTO-STAT tetraCHROME reagents. All other uses are for research use only.

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