Attune Nxt Acoustic Focusing Cytometer

Rapid, accurate detection of rare events

The Invitrogen™ Attune™ Nxt Acoustic Focusing Cytometer is a benchtop analyzer that uses acoustic focusing, a revolutionary technology that aligns cells prior to interrogation with a laser for multicolor flow cytometry analyses. This allows for significantly greater collection rates and the improved ability to detect rare events without excess sample manipulation.

The system offers:
- Time savings—10X faster speeds with no loss in data quality
- Reduced clogging—even with large or sticky cell types
- Easy protocols—no wash, no lyse options
- Simple software—learn to run in less than a day

With up to 4 lasers and 14 colors, the Attune Nxt flow cytometer offers big performance in a small package—at an affordable price. That’s WOW! Cytometry.

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| Optics | The optical layout is dependent upon the instrument configuration chosen from the 1–4 laser system. |

| Excitation | Laser power: |
|            | - Blue laser: 488 nm, 50 mW |
|            | - Violet laser: 405 nm, 50 mW |
|            | - Red laser: 637 nm, 100 mW |
|            | - Yellow laser: 561 nm, 50 mW |
|            | Laser profile: Flat top laser requiring minimal alignment |
|            | Flow cell: Quartz cuvette gel coupled to 1.2 NA collection lens |
|            | Alignment: Fixed alignment, no customer maintenance required |
### Instrument specifications, continued

#### Emission
- Forward scatter: Photodiode detector with 488/10 nm bandpass filter
- Side scatter: PMT with 488/10 nm bandpass filter
- Emission filters: User-changeable, keyed filters
- Up to 14 color channels with PMTs

#### Fluidics
- Sample rates: 12.5–1,000 µL/min
- Sample delivery: Sample delivered by positive displacement syringe pump for volumetric analysis
- Sample analysis volume: 20 µL to 4 mL
- Fluid storage: All fluids stored within instrument with active fluid level sensing
- Standard fluidic tanks: 1.8 L focusing fluid tank, 1.8 L waste tank, 175 mL shutdown solution tank, and 175 mL wash solution tank
- External tanks option: Optional configuration for 10 L fluid
- Nominal fluid consumption: 1.8 L/day
- Sample tubes: Accommodates tubes from 17 x 100 mm to 8.5 x 45 mm

#### Work station
- Operating system: Windows™ 7 SP1
- Processor: Intel Core™ i7
- RAM: 16 GB
- Computer: Minitower desktop
- Hard drive: 80 GB or larger and 250 GB RAID-compatible hard drives
- Monitor: 23-inch flat panel (1,920 x 1,200 resolution), dual monitor capability

#### Software
- Attune™ Nxt Software
- Romlock license required

#### Software features
- Compensation: Fully automated and manual compensation modes
- Instrument tracking: Automated baseline and performance test with Levey-Jennings plots
- Automated maintenance: ≤15 min startup and shutdown
- Maximum event file: 20 million
- Heat map: Tubes and plate visualization
- SmartGate™ label: For Quad
- Stats: Create customized statistics (i.e., Concentration)
- File formats: FCS 3.1 (saved)
- Graphics resolution: Publication-quality images
- User account maintenance: Administrative and individual accounts with user log
- Gates: Standard and customizable gates

#### Performance
- Data acquisition rate: Up to 35,000 events/sec
- Particle size range: 0.5–50 µm
- Fluorescence sensitivity:
  - ≤80 MESF for FITC
  - ≤30 MESF for PE
  - ≤70 MESF for APC

#### Fluorescence resolution
- CV <3% for the singlet peak of propidium iodide–stained CEN

#### Forward and side scatter
- Able to discriminate platelets from noise
- Optimized to resolve lymphocytes, monocytes, and granulocytes in lysed whole blood
| Physical characteristics | • Footprint (H x W x D): approximately 40 x 29 x 29 cm (16 x 11 x 11 in.)  
| | • Weight: approximately 16 kg (35 lb)  
| | • Operating temperature: 15–30°C (50–95°F)  
| | • Operating humidity: <80% noncondensing  
| | • Electrical requirements: 100–240 VAC, 50/60 Hz, <300 W  
| Space requirements | • Minimum width: 40 cm (15.8 in.); when attached to the Attune NxT Acoustic Focusing Cytometer, the total width is 167 cm (65.8 in.)  
| | • Minimum depth: 58.5 cm (23.1 in.) provides 43.2 cm (17.1 in.) for the cytometer unit, a 10.2 cm (4 in.) ledge in front of the unit to place fluidics bottles, and 6.5 cm (2.5 in.) behind the unit for ventilation  
| | • Minimum clear height: 74 cm (29 in.) above the mounting  
| Surface | • Software/computer requirements  
| | - Attune NxT Cytometric Software Version 2.1 or higher Windows 7 Operating System  
| | • Compatible plate types  
| | - 96 deep-well (flat, round, and V-bottom)  
| | - 96-well standard depth (flat, round, and V-bottom)  
| | - 384-well standard depth (flat, round, and V-bottom)  
| | - 384 deep-well (flat, round, and V-bottom)  
| Processing time | • <45 minutes for 96-well plate  
| | • <60 minutes for 96-well plate with 2 wash cycles  
| | • <180 minutes for 384-well plate using High Throughput mode  
| | • <240 minutes for 384-well plate using Standard mode, 2 wash cycles, Carryover <0.5%  
| Mixing cycles | • Each well mixed via full aspiration (not shaking)  
| Wash cycles | • User-defined number of wash cycles, dependent on plate-processing protocol and time to acquire plates  
| Minimum sample volume required | • 50 μL for 96-well plates  
| Minimum dead volume | • 30 μL (for 12.5 μL/min - 200 μL/min)  
| Fluidics requirements | • Onboard fluidics tanks: 800 mL total  
| | • Capable of running four 96-well plates |