

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.



Instrument specifications

Physical characteristics	<ul style="list-style-type: none"> • Footprint (H x W x D): Approximately 40 x 58 x 43 cm (16 x 23 x 17 in.) • Weight: Approximately 29 kg (64 lb) • Operating temperature: 15–30°C • Operating humidity: 10–90%, noncondensing • Electrical requirements: 100–240 VAC, 50/60 Hz, <150 W • Audible noise: <65 dBA at 1.0 m
Optics	<ul style="list-style-type: none"> • The optical layout is dependent upon the instrument configuration chosen from the 1–4 laser system.
Excitation	<ul style="list-style-type: none"> • Laser power: <ul style="list-style-type: none"> - 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	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Sample rates: 12.5–1,000 $\mu\text{L}/\text{min}$• 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	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Attune™ NxT Software• Romlock license required
Software features	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Data acquisition rate: Up to 35,000 events/sec• Particle size range: 0.5–50 μm• Fluorescence sensitivity:<ul style="list-style-type: none">• ≤ 80 MESF for FITC• ≤ 30 MESF for PE• ≤ 70 MESF for APC
Fluorescence resolution	<ul style="list-style-type: none">• CV $< 3\%$ for the singlet peak of propidium iodide–stained GEN
Forward and side scatter	<ul style="list-style-type: none">• Able to discriminate platelets from noise• Optimized to resolve lymphocytes, monocytes, and granulocytes in lysed whole blood

Attune NxT Autosampler product information

Physical characteristics	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• Software/computer requirements<ul style="list-style-type: none">- Attune NxT Cytometric Software Version 2.1 or higher Windows 7 Operating System• Compatible plate types<ul style="list-style-type: none">- 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	<ul style="list-style-type: none">• <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	<ul style="list-style-type: none">• Each well mixed via full aspiration (not shaking)
Wash cycles	<ul style="list-style-type: none">• User-defined number of wash cycles, dependent on plate-processing protocol and time to acquire plates
Minimum sample volume required	<ul style="list-style-type: none">• 50 µL for 96-well plates
Minimum dead volume	<ul style="list-style-type: none">• 30 µL (for 12.5 µL/min - 200 µL/min)
Fluidics requirements	<ul style="list-style-type: none">• Onboard fluidics tanks: 800 mL total• Capable of running four 96-well plates

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Find out more at thermofisher.com/attune

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