

Agilent Flow Cytometer Specifications

NovoCyte Penteon (5 Lasers)

NovoCyte Quanteon (4 Lasers)

NovoCyte Advanteon (1-3 Lasers)

A breakthrough in flow cytometry design, the Agilent NovoCyte Penteon, NovoCyte Quanteon, and NovoCyte Advanteon provide up to 30 fluorescence channels to meet the most demanding panels. The detectors have a 7.2 log dynamic range and advanced autocompensation features, alleviating the need to tune each detector. You now have the flexibility to choose from 30 fluorescence channels using one to five lasers, without having to sacrifice the performance in one channel for another.

NovoCyte Penteon NovoCyte Quanteon NovoCyte Advanteon specifications

Lasers	349 nm	405 nm	488 nm	561 nm	637 nm
445/45 nm	✓	✓ ✓ ✓			
525/45 nm	✓	✓ ✓ ✓	✓ ✓ ✓		
586/20 nm	✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	
615/20 nm	✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	
667/30 nm	✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
695/40 nm		✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
725/40 nm	✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓	✓ ✓ ✓
780/60 nm	✓	✓ ✓ ✓	✓ ✓	✓ ✓ ✓	✓ ✓ ✓
NovoCyte Penteon (5 Lasers)					
NovoCyte Quanteon (4 Lasers)					
NovoCyte Advanteon (1–3 Lasers)	Pick up to three				

	Specification	Description
Optics	Laser	Solid state laser with onboard thermal-electric cooling and guaranteed thermal stability and beam quality
	Laser beam profile	10 × 60 μm elliptical beam
	Laser operation	Laser on only when acquiring samples
	Optical alignment procedure	Fixed; no operator alignment required
	Laser power	NovoCyte Advanteon: 405 nm 50 mW, 488 nm 60 mW, 561 nm 50 mW, 640 nm, 40 mW NovoCyte Quanteon: 405 nm 100 mW, 488 nm 100 mW, 561 nm 100 mW, 637 nm 100 mW NovoCyte Penteon: 349 nm 20 mW, 405 nm 100 mW, 488 nm 100 mW, 561 nm 100 mW, 637 nm 100 mW
	Fluorescence detection	Silicon photomultiplier (SiPM) with high photon detection efficiency, individual photodetector for each channel
	FSC/SSC sensitivity	FSC: 0.4 μm, SSC: 0.1 μm
	Fluorescence threshold sensitivity	NovoCyte Quanteon/Penteon: FITC ≤40 MESF, PE≤10 MESF, APC ≤10 MESF, Pacific Blue ≤30 MESF NovoCyte Advanteon: FITC ≤45 MESF, PE ≤15 MESF, APC ≤15 MESF, Pacific Blue ≤35 MESF
	Fluorescence resolution	<3% CV for CEN
	Optical filters	User exchangeable, smart filter automatically read by the system
Fluidics	Flow cell	170 × 290 μm rectangular quartz flow cell
	Sample acquisition rate	100,000 events/second
	Sample delivery	Positive-displacement syringe pump, enabling direct volumetric absolute count without the need for reference counting beads
	Volumetric absolute count precision	<5%
	Sample flow rate	5 to 120 μL/min, continuously adjustable
	Sheath flow rate	6.5 mL/min
	Sample acquisition volume	5 μL to 5 mL
	Manual sample format	12 × 75 mm tube, 1.5 mL Eppendorf tube
	Connection to autosampler	No fluidic tubing disassembly or reconnection required
	Fluid level sensing	Active sensing using weight sensors with automated warnings when any fluid level is out of specified range
	Fluid container capacity	3 L sheath, 3 L waste, 500 mL cleaning, 500 mL rinse, optional large container for sheath (15 L), and waste (15 L)
	Carryover	<0.1%
	Sample injection probe (SIP) rinse	Automated flying collar wash of inner and outer SIP surface after each sampling
	Fluidics system monitoring	Inline pressure sensor monitors the pressure in real time. Automated system recovery when pressure is out of range due to clogging.
Fluidics system maintenance	Automated startup and shutdown with fluidic system cleaning. Automated user executable cleaning, debubble, rinse, extensive rinse, unclog, priming, and decontamination.	
Data management	Software	Agilent NovoExpress
	Parameters	Height and area for FSC, SSC and all fluorescence channels, width off FSC, time
	Dynamic range	24 bit, 7.2 decades logarithmic scale
	Fluorescence photodetector gain control	User adjustable, optimized, default gain setting for each individual channel
	Compensation	Full inter-beam matrix, during or after acquisition
	Output data files	FCS 3.0, FCS 3.1, CSV, batch PDF reports
	Data report	Automatic report, customizable report, batch PDF report
	Workstation	Intel core i7 processor, 8 GB RAM, 1 TB hard drive, small form factor, optional higher configuration workstation
	Monitor	23.8 in flat panel (1,920 × 1,200 resolution)
	Computer operating system	Microsoft Windows 10 Professional (64 bit) or new version with Microsoft Office preinstalled
	Usage monitor	Comprehensive transaction log and system log
	User management	Administrative creation of individual user accounts and user groups with privilege control. Configurable roles for individual users. User operation time tracking.
Physical parameters	Dimensions (W × D × H)	NovoCyte Penteon: 33.5 × 18.1 × 18.8 in (85 × 46 × 48 cm) with Agilent NovoSampler Q NovoCyte Quanteon: 33.5 × 18.1 × 18.8 in (85 × 46 × 48 cm) with Agilent NovoSampler Q NovoCyte Advanteon: 33.5 × 18.1 × 18.8 in (85 × 46 × 48 cm) with NovoSampler Q
	Weight	NovoCyte Penteon 138 lbs (62.5 kg) With NovoSampler Q NovoCyte Quanteon 138 lbs (62.5 kg) With NovoSampler Q NovoCyte Advanteon 123 lbs (56 kg) with NovoSampler Q
	Operating temperature	+15 to +30 °C
	Operating humidity	Relative humidity: 80% maximum
	Power requirements	100/115/230 VAC, 50 to 60 Hz

NovoSampler Q specifications

Specification		Description
Physical Parameters	Dimension (W × D × H)	16.9 × 11.0 × 11.8 in (43 × 28 × 30 cm)
	Weight	29.3 lb (13.3 kg)
Installation	Installation method and calibration	Automated self-calibration after installation. No need to reconfigure fluidics tubing or connection.
Performance and Capability	Labware compatibility	40-tube rack for 12 × 75 mm tube, 24-well, 48-well, 96-well (flat, U-, V-bottom), and 384-well microplates.
	Labware calibration	Automated bottom height mapping and calibration to accommodate different labware. Calibrated labware template can be saved for future use.
	SIP collision detection	Automated fluidics system recovery after detection of SIP collision; automatic acquisition of the next sample after successful recovery.
	Carryover	<0.1%
	Mix mode	Orbital shaking up to 3,000 rpm. User-definable mixing frequency, speed, acceleration, and duration.
	Bar code reading	Integrated barcode reader. Automatically prompt barcode as specimen name in the software.
	Fluidics system rinse	Automated postsampling rinse for every sample. User-definable extra rinse cycle and rinse frequency.

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