NovoCyte Quanteon
Flow Cytometer

When Exceptional Performance Meets Simplicity

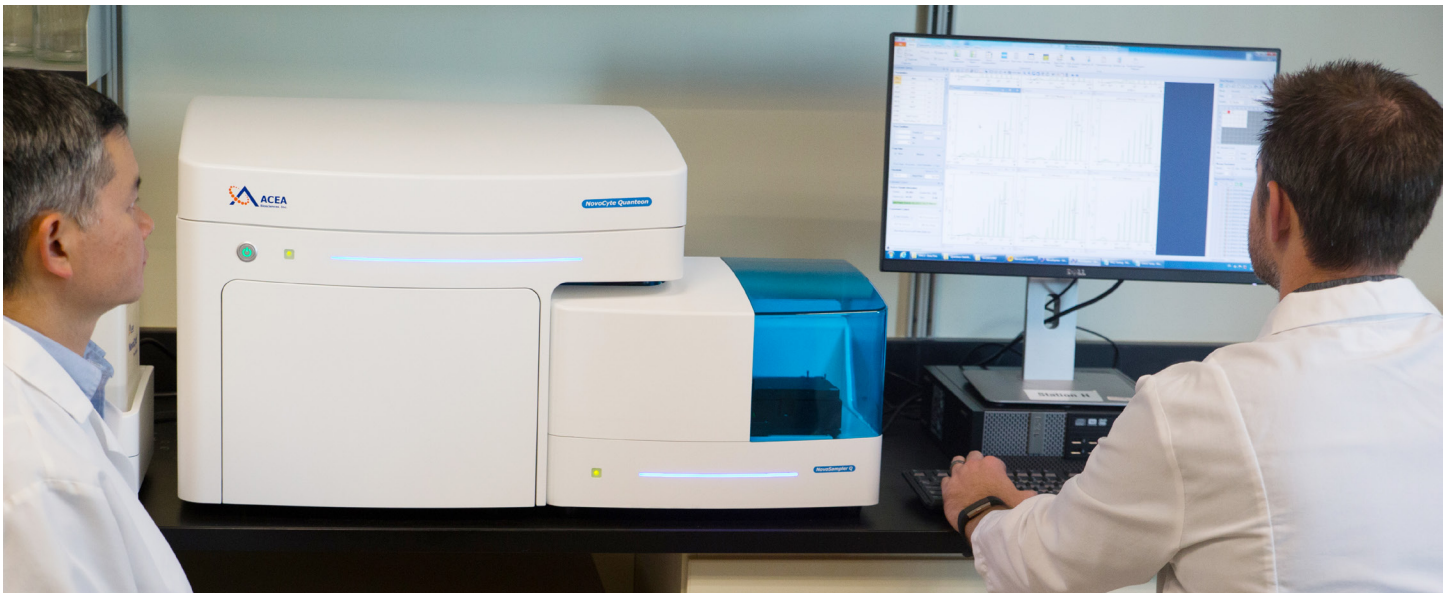
ACEA Biosciences, Inc.

A Quantum Leap In Benchtop Flow Cytometry

The NovoCyte Quanteon™

The NovoCyte Quanteon flow cytometer builds on its successful predecessor, the NovoCyte, to provide an expanded set of capabilities that accommodate today's high-end and increasingly sophisticated multi-color flow cytometry assays. Scientists now have the flexibility to choose from 25 fluorescent channels utilizing four lasers with 25 independent detectors. The NovoSampler Q™, which can be integrated into different laboratory automation platforms, efficiently processes both FACS tubes (using a 40-tube rack) and 24-, 48-, 96-, and 384-well plates. The intuitive and industry leading NovoExpress® software has been further advanced, providing an exceptional user experience in data acquisition, analysis and reporting.

- Expanded flexibility with 25-color options utilizing 4 lasers
- Superior sensitivity and resolution
- Intuitive and powerful software for data acquisition, analysis, and reporting
- Smart-design functionalities and walk-away operation to simplify your workflow
- Automation-ready capability for high throughput needs
- Wide, 7-log dynamic range eliminates the need for routine detector adjustments



Expand Your Capabilities

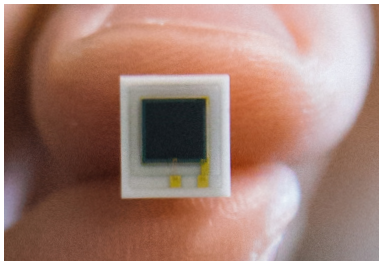
Up To 27 Parameter Analysis

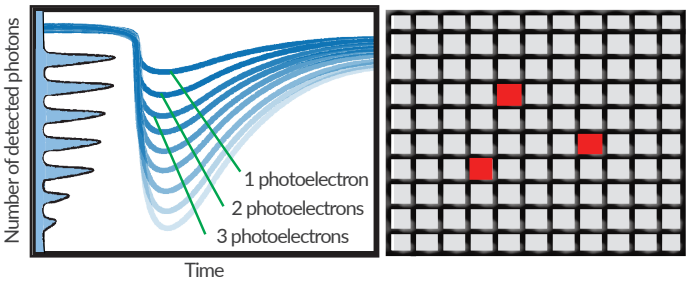
Equipped with 25 fluorescence channels from 4 lasers (405, 488, 561, and 637nm), the Quanteon offers tremendous flexibility in panel design. Optimized detector settings eliminate the need for complicated and laborious adjustments, making data acquisition as simple as load-and-go.

Above, we show a 17-color pan-leukocyte immunophenotyping panel on PBMCs using the NovoCyte Quanteon, adapted from OMIP-024 (Cytometry Part A, 85A:995-998, 2014). This panel was designed to monitor different immune subsets with activation and differentiation markers.

The Sensitivity You Have Been Expecting

Silicon Photomultiplier (SiPM) — The Ultimate Photodetector



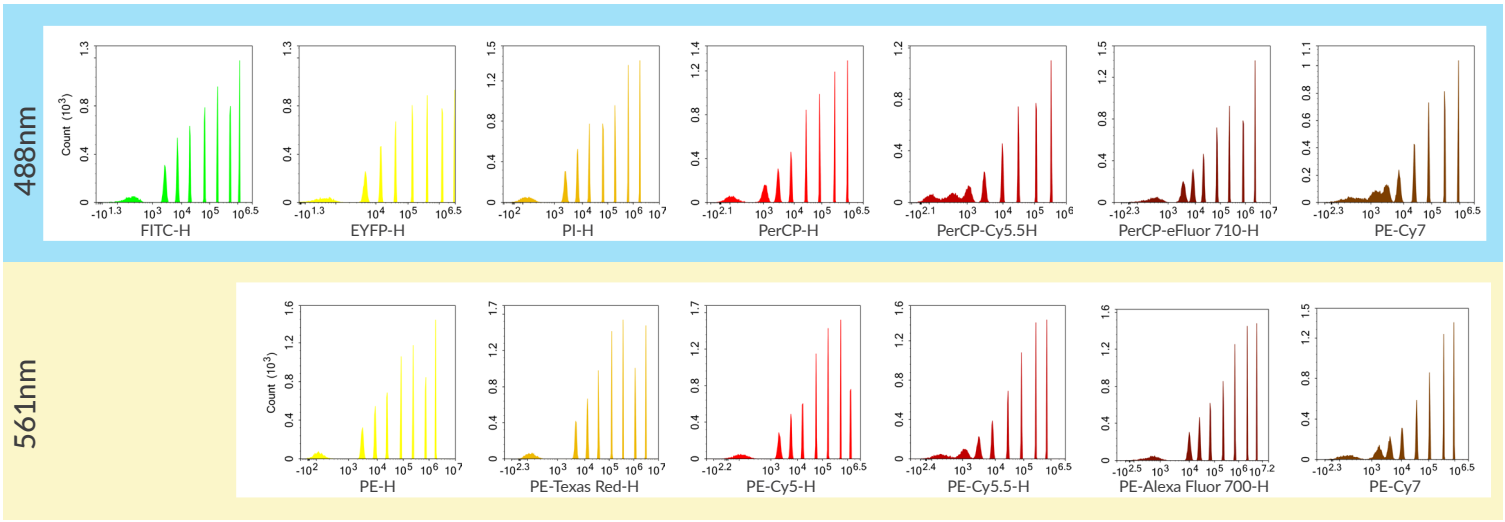


What is a SiPM?

Silicon photomultipliers (SiPM) are solid-state, photon-level-sensitive semiconductor devices. Consisting of a compact array of avalanche photodiodes operating in unison, SiPM is a detector with photon counting capability. Innovative optics design in NovoCyte Quanteon incorporates 25 independent SiPM for collecting and processing signals for each of its fluorescence channels.

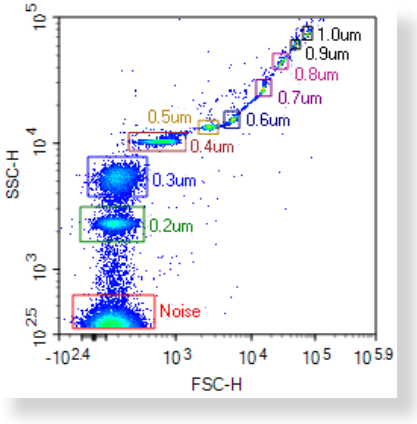
SiPM's strengths:

- Superior photon detection sensitivity
- High gain and high quantum efficiency
- Instantaneous warm up and fast response
- Robust and long lifespan
- High durability



Superior FSC/SSC detection resolution

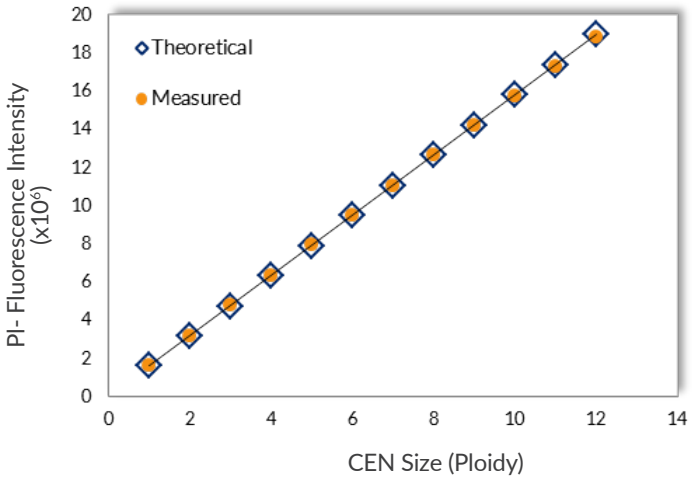
NovoCyte Quanteon's FSC/SSC detection optics and signal processing electronics have been optimized to resolve particles of size down to 0.2 µm. With such superior resolution, platelets, bacteria, and various sub-micron particles can be readily identified and analyzed.

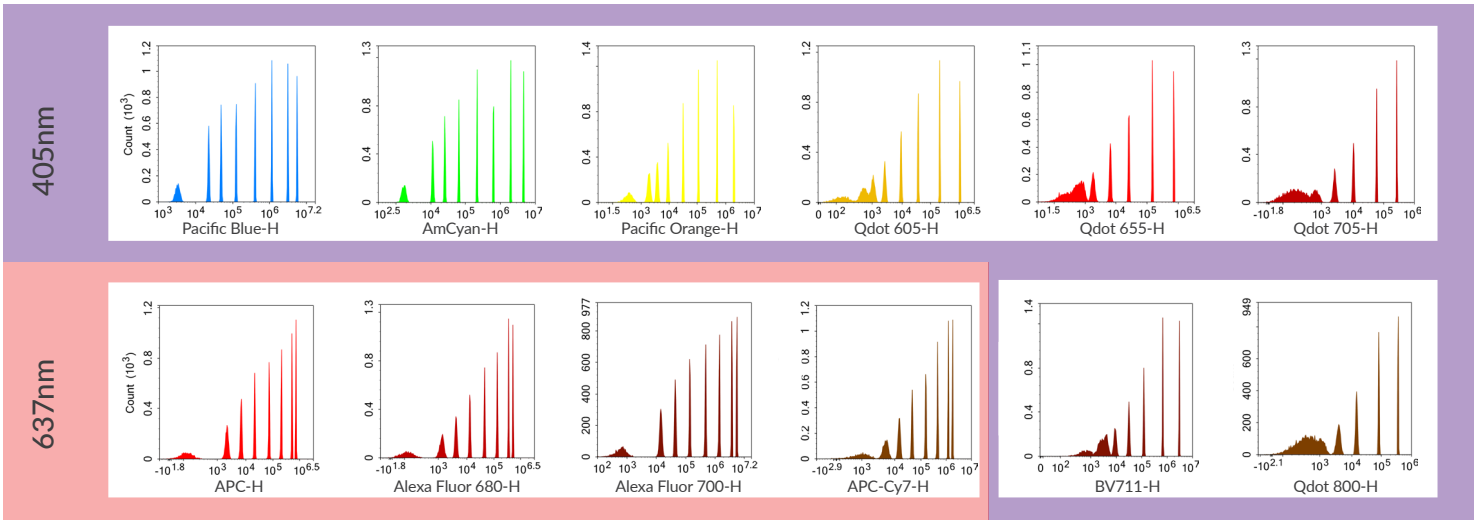


Confidently Quantify Fluorescence Signals

Engineered to be the state of the art in both its optical and electronic subsystems, the Quanteon delivers a highly linear fluorescent signal response for all channels and across a wide dynamic range.

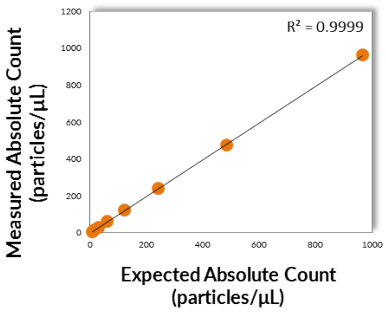
To demonstrate the detection linearity, Chicken Erythrocyte Nuclei (CEN) ploidy was measured in relation to the mean fluorescence intensity of propidium iodide (PI) staining.





Direct Absolute Cell Count Makes Reference Beads Obsolete

NovoCyte Quanteon uses a high accuracy syringe pump to drive the sample, directly providing accurate absolute count results in every single run. Why use reference beads when you don't need them?



- Volumetric absolute count is determined for each and every sample automatically
- Complicated calibration of the fluidics system is not required
- Expensive reference beads are not required

Walk-away Automation Simplifies Your Workflow

Easy startup & shut down

Quick startup with automated fluidic rinsing takes only minutes to prepare the instrument for your daily use. The configurable pre-scheduled shutdown thoroughly cleans at a specified time each day to eliminate the hassle of end-of-day manual cleaning.

Embedded quality control

Quickly run daily QC, automatically generate comprehensive QC reports, and conveniently track performance over time with Levey-Jennings plots. The automatic QC test ensures proper performance monitoring on not only a day-to-day basis, but also over long-term use.

Continuously monitors fluidic levels for you

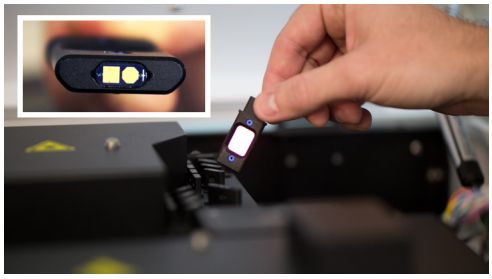
A fluidic station capable of sensing low fluid or high waste levels eliminates the need of manual inspection. Fluidics consumption is estimated before plate runs to ensure uninterrupted sample acquisition.

Hassle-free fluidics

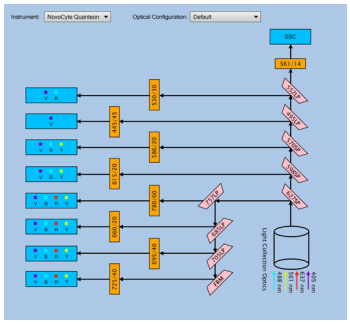
Electronically monitored valves and sensors allow for automatic clog detection and recovery. A feedback control system continuously manages sheath flow rate to maintain great stability.

"Smart" optical filters

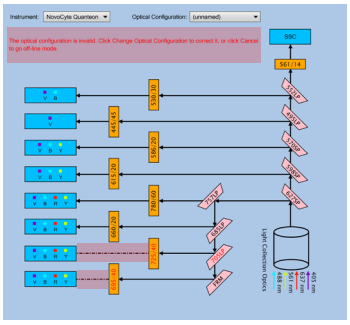
Optical filters are automatically recognized by the instrument to ensure correct configuration with easy filter exchange. Once a filter is inserted, it appears in the configuration display, and the software reports any filter misplacement to ensure a properly-arranged optical configuration.



Correct configuration



Incorrect configuration



Optical configuration layout in the software shows interchangeable mirrors and filters with independent detectors for each fluorescence channel corresponding to different excitation laser

Versatile Sample Injection Probe (SIP)

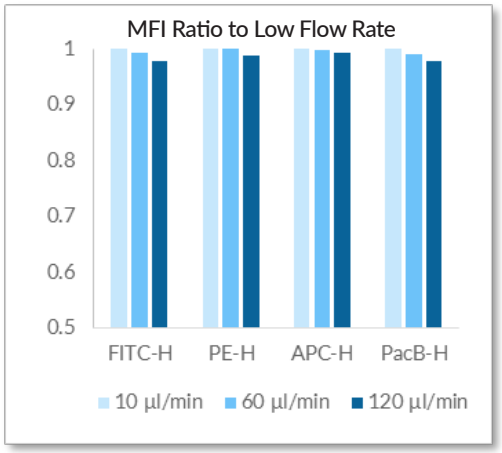
- Tapered design to minimize dead volume
- Sample aspiration by syringe pump ensures precise absolute counting
- Automated SIP wash rinsing following sample acquisition minimizes cross-sample carryover
- Easy cleaning and maintenance
- Automated SIP collision detection and recovery

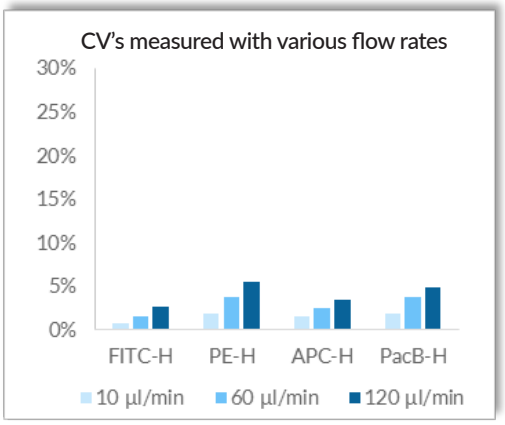
A Flow Cytometer With Exceptional Reliability

Consistent Results, Fast or Slow

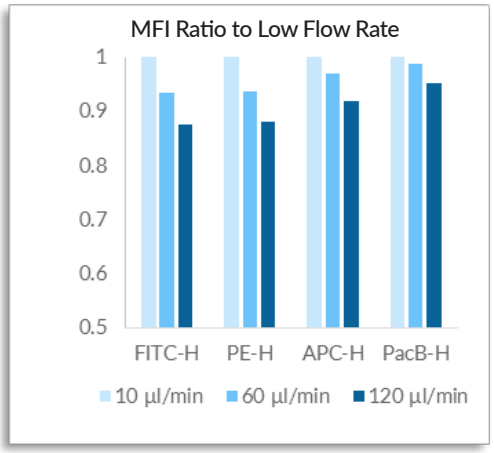
Equipped with high quality lasers, optical filters and detectors to ensure consistent signal detection, and combined with fluidic feedback control mechanisms to maintain steady flow rates, the NovoCyte Quanteon is the flow cytometer you can always rely on. It has demonstrated superior stability across a wide range of sample flow rates, a critical requirement for a high end flow cytometer to provide consistent results under variable operating conditions. The NovoCyte Quanteon gives you peace of mind so you can focus more on your experiments.

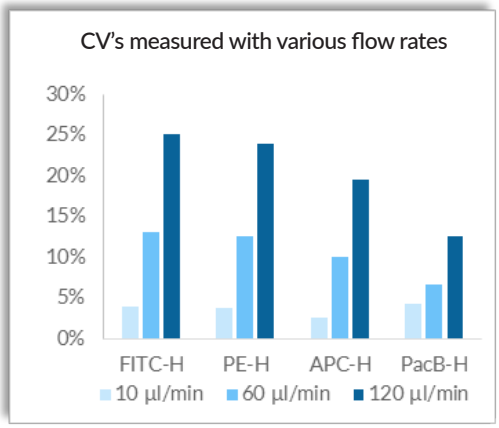
Quanteon





Competitor

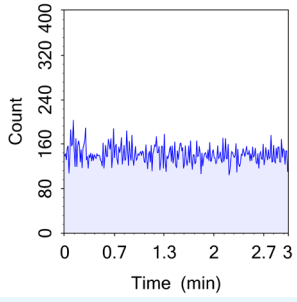




Superior Reproducibility & Stability

The Quanteon's fluidic system is designed to deliver superior performance. When compared to other flow cytometers, the fluidic consistency and stability of the Quanteon is unmatched. Other instruments utilizing peristaltic pumps are often plagued with fluidic pulsation, causing inconsistency and inaccuracy in absolute cell counts.

Quanteon



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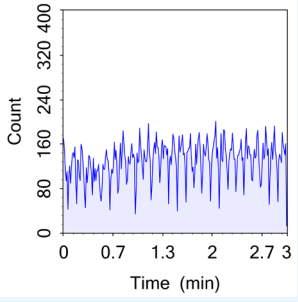
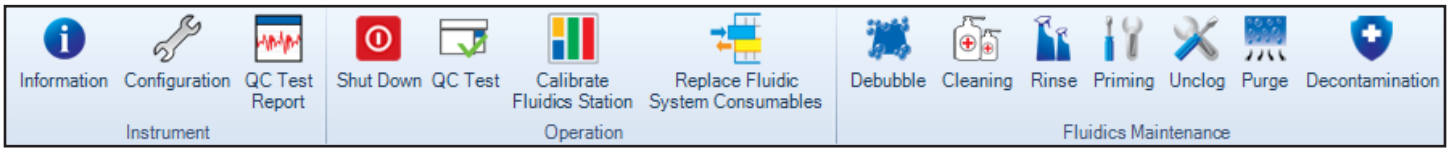


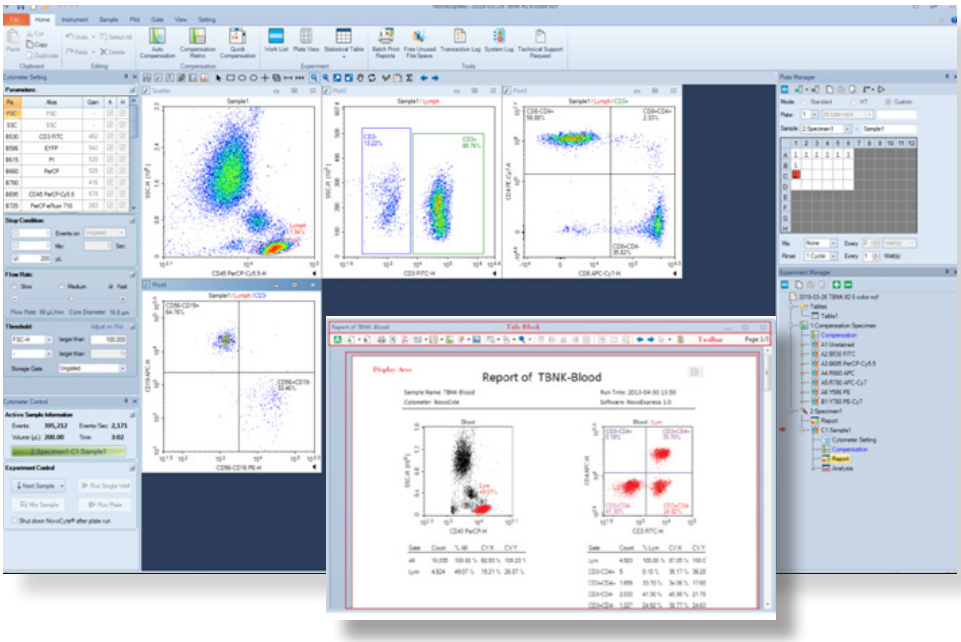
Streamline Your Sample Acquisition & Data Analysis With The NovoExpress Software

Improved Versatility & Ease Of Operation

- One software interface for all: combining sample acquisition and data analysis
- Analyze acquired data in real time during flow experiment to maximize productivity and efficiency
- Customizable statistical parameters with live updates when running samples
- Powerful compensation tools and convenient adjustments allow accurate pre- and post-acquisition compensation
- Batch analysis and reporting
- Easily create publication-quality figures with customizable plot scale, font, and legend
- Export as FCS (3.0, 3.1) or CSV files, import FCS files for analysis



Instrument toolbar showing quick access to QC and fluidic maintenance functions



NovoExpress user-friendly interface for easy access to settings, analysis, reports and plates/sample layout.

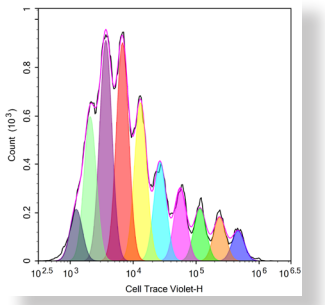
"This software is straightforward, and the software interface is easy to handle. The implemented auto compensation and hierarchic tree structure is a highlight for effective organization of experimental data."

– Matthias Schiemann, Technische Universität München

Advanced Data Analysis Is Made Easy By NovoExpress

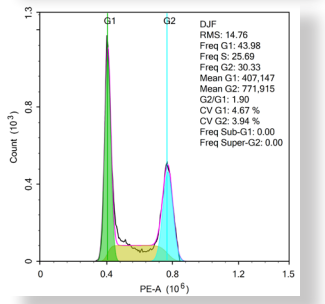
Cell Proliferation Modeling

Automatic analysis of cell proliferation to quickly identify generations of cell division and calculate the proliferation index for easy quantitation



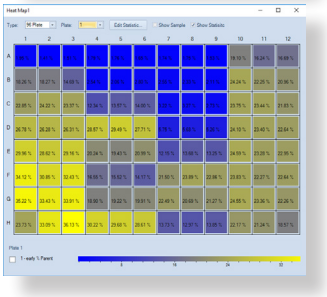
New Cell Cycle Analysis Module

Dean Jett Fox (DJF) and Watson Pragmatic algorithms are both incorporated in the NovoExpress cell cycle analysis module. This provides additional flexibility for your cell cycle analysis and quantitation of G1, S, and G2/M transitions, as well as other parameters such as CV's and G2/G1 ratio.



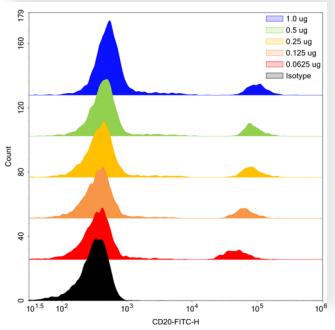
Heat-map Data Display

Color representation of user-defined parameters allow quick visualization and comparison of many samples simultaneously.

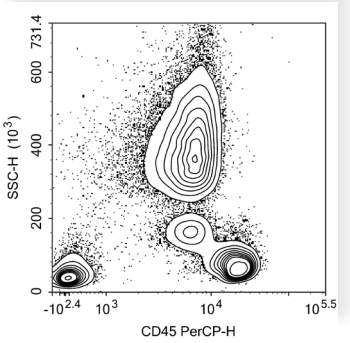


Templates, Batch Analysis & Reporting

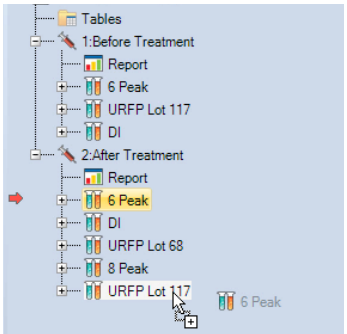
The industry-leading NovoExpress software allows intuitive data acquisition, data analysis and report generation. It provides flexible analysis templates and plotting tools, offering enhanced data analysis efficiency. **Let NovoExpress multitask for you - analyze sample data while simultaneously acquiring your remaining samples to maximize your productivity.**



Histogram overlay (half-offset)



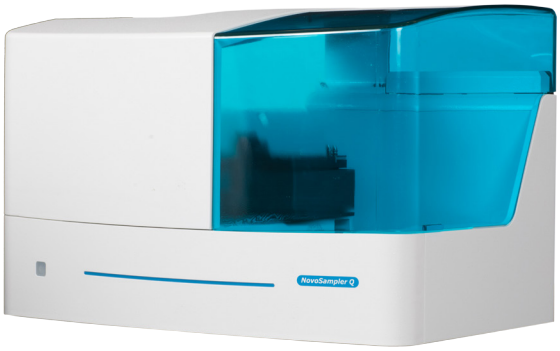
Contour plot with outliers



Drag-and-drop functionality to copy settings/analysis

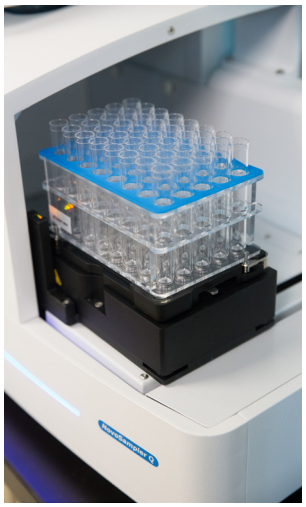
Automate Sample Loading For Your Versatile Sampling Needs

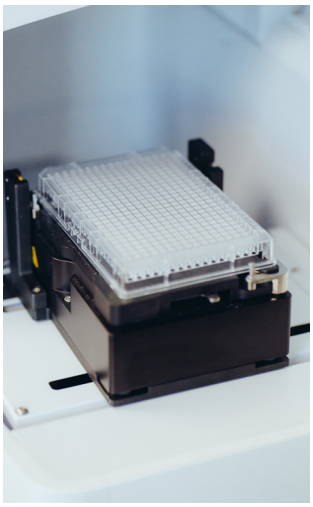
The NovoSampler Q



The NovoSampler Q is an automatic sample loading system that fulfills the requirement of high-throughput and automated sample acquisition. It seamlessly integrates with the NovoCyte Quanteon flow cytometer, making it very easy to operate, delivering high-speed analysis and processing performance.

- Automated plate calibration eliminates the needs for manual alignment and calibration
- Versatile loading mode and increased throughput utilizing various sample formats (40 tube rack, 24/48/96/384 well plates) including customizable plates
- Rapid and high-throughput reading as fast as <20 mins for a 96-well plate and <80 mins for a 384-well plate
- Lab automation friendly with open architecture and developer-ready API
- Reliable orbital shaking keeps samples in suspension all the time



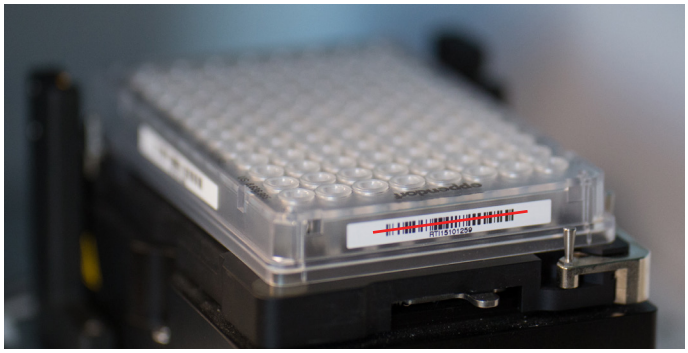


Minimal Sample Carryover

A wide range of flow cytometry applications require the sequential processing and quantitative analysis of many samples. Minimizing sample carryover is important not only when acquiring multiple samples, but also during the analysis of rare events as carryover from previous samples can substantially affect the quantitation of rare event detection. Therefore, it is important for a flow cytometer to limit sample carryover without manual intervention. An optimized fluidics system design allows for less than 0.1% carryover with the NovoCyte Quanteon.

Barcode Provides Rapid Sample Identification & Tracking

The barcode reader automatically and instantaneously identifies plate information for keeping track of numerous samples in high throughput experiments.

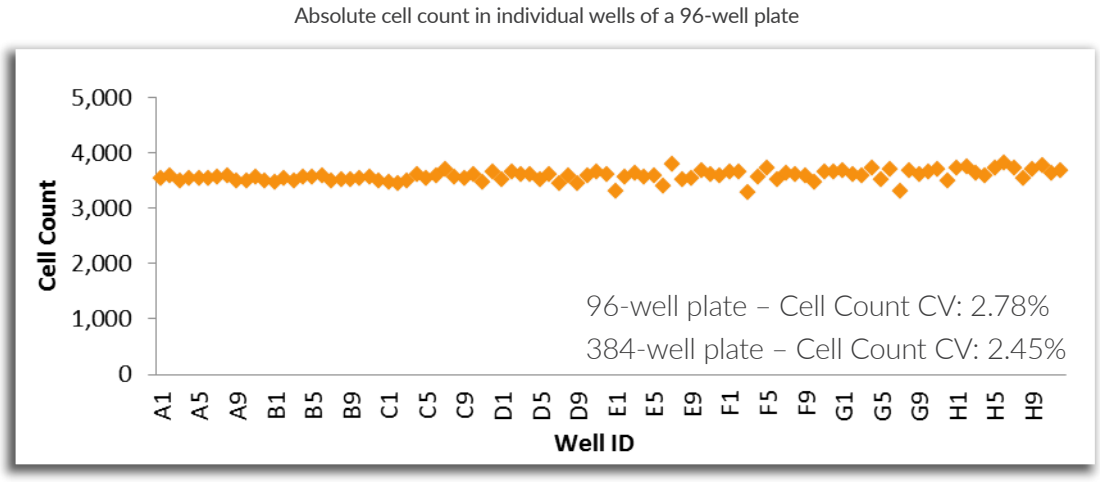


Flexible Run Time

Optional large sheath and waste fluid containers with five times the standard capacity, up to 15L to allow long and continuous instrument operation. You can now maximize productivity and run up to one hundred 96-well plates using the high capacity container without having to replenish sheath fluid or empty the waste.

Uniform Mixing Ensures High Reproducibility

The NovoSampler Q ensures thorough sample mixing with default parameter settings and customized options for high performance acquisition. Easily adjust the mixing speed, duration and acceleration to optimize mixing efficiency for your sample type. The orbital shaker maintains cells in suspension while running an entire plate to allow for consistent and reproducible results.



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