

NucleoCounter[®] NC-3000[™]

The All-in-one Instrument for Instant Cytometry



INSTANT CYTOMETRY
NO WARM UP



ALL-IN-ONE
INSTRUMENT



NO FLOW, RINSING
OR CLOGGING



NO NEED FOR
CALIBRATION



NO SERVICE OR
MAINTENANCE



LOW
RUNNING COSTS



GET VISUAL
INSPECTION

Next Generation Cell Analysis is here!



- ✓ High-speed cell count and viability
- ✓ Plug and play analytical protocols
- ✓ User-defined analytical protocols

The all-in-one instrument for cell analysis



The NucleoCounter® NC-3000™

Next generation cell analysis is here!

High-speed cell count and viability, fast cell cycle analysis and flow cytometry-like analysis. As a true all-in-one instrument, the NucleoCounter® NC-3000™ does it all fast and easy.

Unlike many instruments for cell analysis, you will not encounter a time-consuming warm-up period or problems with calibration or clogging, nor do you need an expensive service contract. The NucleoCounter® NC-3000™ allowing you to get right to your analysis with instant cytometry.

The NucleoCounter® NC-3000™ is an automated full-spectrum fluorescence microscope with integrated collection, analysis and reporting of data. The automated image cytometry technology from ChemoMetec provides advanced, fast and precise analysis of your cells – without the risk of clogging.

The NucleoCounter® NC-3000™ offers a wide array of reliable and user-friendly analytical assays including high-speed cell counting. Furthermore, user-defined protocols with up to five fluorescent channels can be defined.



High-speed cell counting and advanced cell analysis
- all in one flexible instrument



Avoid calibration, rinsing and clogging
- get right to your analysis with instant cytometry



No need for maintenance and service
- reduce your running costs significantly



Get visual inspection of your analyzed cells
- linkage between plot and image



Superior data visualization with the PlotManager
- unlimited number of software licenses included



Experience the unique service of ChemoMetec's Science Support Center
- the best instruments deserve the best support

FlexiCyte™ (user adaptable protocols) | Viability and Cell Count | Cell Cycle Assays | Caspase 3/7, 8 & 9 | Annexin V | Mitochondrial Potential | Cell Vitality | DNA Fragmentation | GFP Transfection Efficiency

Revolutionary Products with excellent support

At ChemoMetec, we don't believe in hidden costs: The NC-3000™ is service and maintenance free, and everything is included in the package:

- Support by our Science Support Center
- Unlimited software licenses
- Free software updates

The NC-3000™ reduces your running costs and the flexibility of the instrument secures your need for future analysis. For more information, please visit:

www.chemometec.com/nc-3000



Experience the Flexibility of a true all-in-one instrument

Choose between fast and easy cell count and viability analysis

EASIEST count & viability ever!

Calibrated volume for high precision

chemometec Via1-Cassette™ Lot: 0211.01

Acridine Orange

DAPI

One-step cell count and viability without pre-treatment

In order to determine viability and cell concentration, a sample of the cell suspension is drawn directly into the Via1-Cassette™.

The inside of the Via1-Cassette™ is coated with two different dyes, which stain the entire cell population and the non-viable cells respectively.

FASTEST count & viability ever!

Perform 8 cell counts and viability assays in less than 3 minutes

The multi chamber NC-Slide A8™ enables high-speed cell counting with accuracy and precision.

Within 3 minutes, you will have 8 cell counts and viability measurements, and only a small sample volume is needed.

Includes a wide array of plug-and-play analytical protocols

PLUG & PLAY fixed analytical protocols

Organism: Mammalian, Yeast, Insect

Analysis: Total Count and Viability, Apoptosis, Cell Cycle, Transfection Efficiency, AutoFluorescent Proteins, FlexiCyte, Thiol Measurement

Media Types: Via 1-Cassette, PI-Cassette, NC-Slide A2, NC-Slide A8

Protocol: 2-Step Cell Cycle Assay, Annexin V Assay, Caspase Assay, DNA Fragmentation Assay, Fixed Cell Cycle-DAPI Assay, Fixed Cell Cycle-DAPI Assay

Sample Unit: NC-Slide A2, NC-Slide A8

Imagine a complete cell cycle analysis performed in just 5 minutes, a 1 minute apoptosis assay, no instrument warm-up, calibration and adjustments. The NucleoCounter® NC-3000™ comes with a wide array of analytical assays: Just select a pre-defined protocol and press 'RUN'.

Advanced cell analysis has never been easier to perform!

- Cell Cycle Analysis
- Mitochondrial Potential
- DNA Fragmentation
- Cell Vitality
- GFP Transfection Efficiency
- Annexin V
- Caspase 3/7, 8 & 9

Perform flow cytometry-like analysis - without the flow limitations

User Adaptable Protocols

The FlexiCyte™ module enables the user to perform advanced cell analyses of a broad range of mammalian cells.

Use the build-in "Protocol Adaptation Wizard" to setup protocols to measure up to four different biomarkers using any combination of the five LEDs listed below (figure 1). The LEDs cover the range from UV to far red and can be combined with the emission filters in the most optimal way to detect a wide range of fluorescent markers.

In addition to selecting optimal combinations of LED's and emission filters, exposure time can be optimized for specific fluorophores. The advanced algorithms in the software provide the option to include or exclude aggregated cells and to specify the minimum number of cells to be analyzed.

	Darkfield	UV (Counterstain)	UV LED	Violet LED	Blue LED	Green LED	Red LED
Light source	Darkfield / Ex365	Ex365	Ex405	Ex475	Ex530	Ex630	
Available emission filters	- / Em470/55	Em430/20 Em470/55 Em475/15 Em560/35 Em675/75 Em630LP Em740/60	Em475/15 Em530/15 Em560/35	Em560/35 Em580/25 Em675/75	Em675/75 Em630LP Em740/60		

Figure 1: A full list of possible LED/Emission filter combinations.

The denotation of emission filter as e.g. Em530/15, means a bandpass filter that allows light of wavelength 530nm ± 15nm (515 nm - 545nm) to pass.



Superior Data Visualization

Making cytometry accesible to everyone

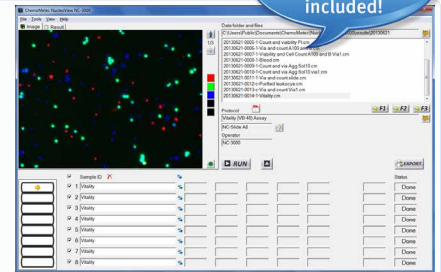
Powerful NucleoView™ NC-3000 Software

UNLIMITED
number of licenses
included!

The ease of use of Nucleoview™ NC-3000 makes cytometry accessible to everyone, and eliminates the need for specialized personnel. The data is presented in histograms, scatter plots and result boxes, offering the user a clear overview of the results.

The Nucleoview™ NC-3000 software displays an image of the cell sample gathered, at 2x magnification, offering the user an option to visually inspect and qualify the cell sample.

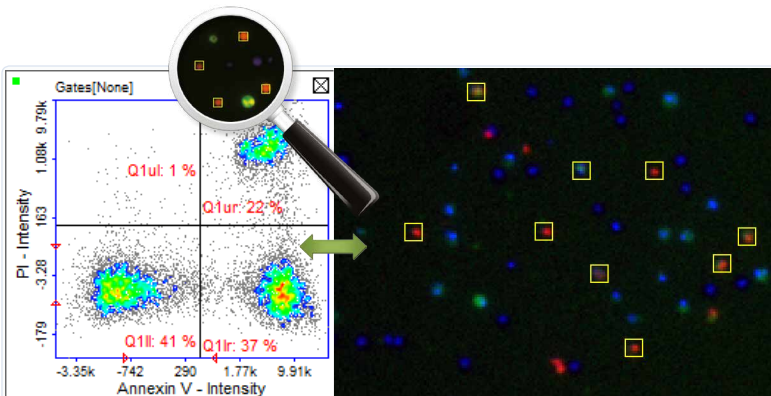
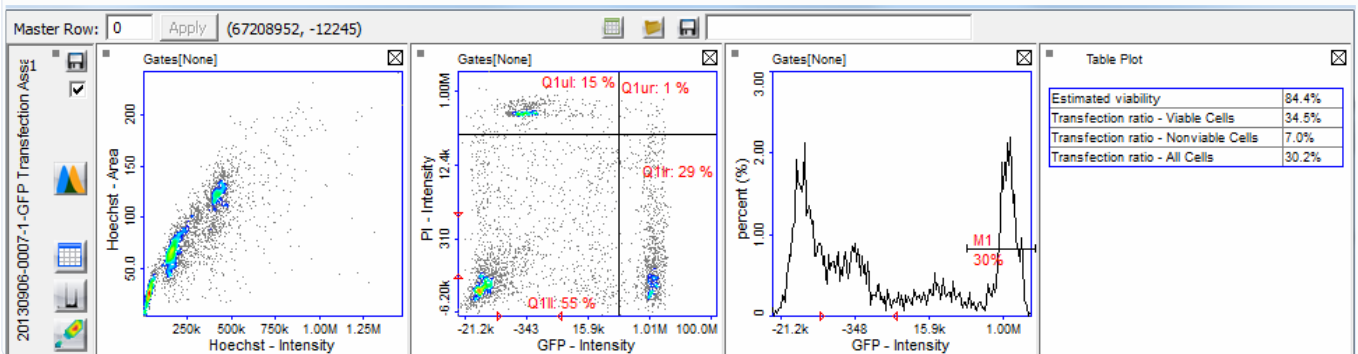
The software includes one-click access to application notes and context sensitive help.



PlotManager

The PlotManager is used for analyzing the events acquired by the NucleoCounter® NC-3000™.

Polygons, quadrants and markers can be drawn in the plots and are used for counting and gating of subpopulations.



Linkage between plot and image

Gated cells can be visually inspected in the image acquired with the NucleoCounter® NC-3000™.

Shown here by induced apoptosis in Jurkat cells which is measured using the Annexin V assay.

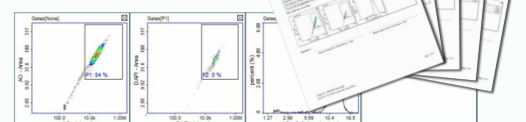
Create your own PDF reports

Create PDF reports of your data for use in e.g. GMP facilities. This opens the possibility to show your cell images, results and plots in a layout that facilitates any approved procedures e.g. by creating designated areas for signatures.

The reports can be auto generated and printed directly by your default printer.



Viability (%)	99.8
Live cells/ml	2.5296
Dead cells/ml	2.2463
Total cells/ml	2.7565
Estimated cell diameter (um)	11.8
Cell diameter standard deviation (um)	3.5
% of cells in aggregates with five or more cells	1



Examples of Applications

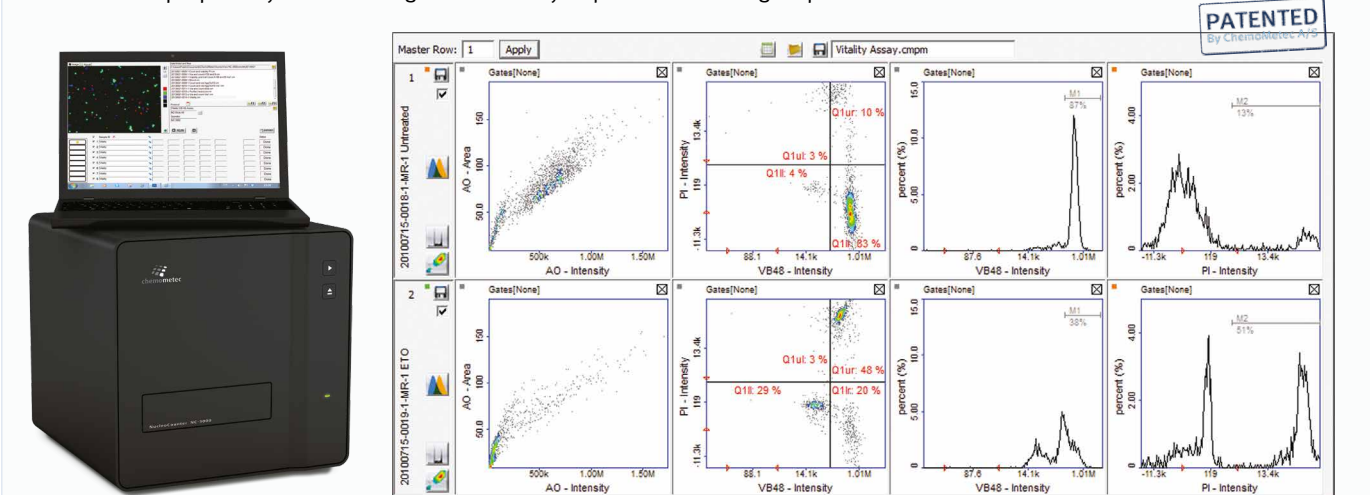
Cell analysis made easy

1 MINUTE
total assay
time

Evaluation of cellular health in 1 minute!
The NC-3000™ Vitality Assay

Add VitaBright-48™ → Instant Cytometry

Scatter plots and histograms showing the distribution of living, dead and stressed/apoptotic cell populations can be shown with one simple solution. Cells which are stressed or apoptotic are readily identified as having low intracellular thiol levels using ChemoMetec's proprietary VB-48™ reagent. The assay requires no washing steps hence it is fast and sensitive.



Hybridoma cells were grown in the absence (upper row) or in the presence (lower row) of etoposide. Cells were stained with VB-48™, Acridine Orange (AO) and Propidium Iodide (PI) and analysed using the Vitality Assay and a NucleoCounter® NC-3000™. Scatter plots and histograms were obtained from the NucleoView™ NC-3000 software. Polygons and markers in the displayed plots were used to demarcate the various cell populations. In this example etoposide causes a decrease in the thiol levels in a subpopulation (cells with low VB-48™ intensity).

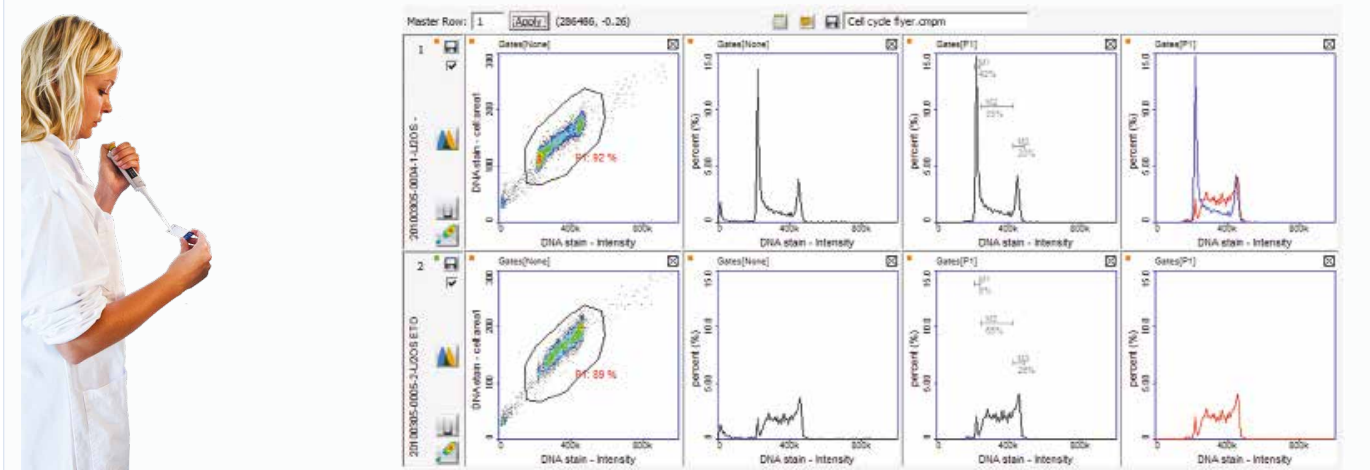
5 MINUTES
total assay
time

Complete cell cycle in just 5 minutes!
The NC-3000™ Two-Step Cell Cycle Assay

Lysis buffer + DAPI → Stabilization buffer → Instant Cytometry

The Two-Step Cell Cycle Assay facilitates detaching, permeabilization, declumping and homogenous staining of the cell population in two simple steps.

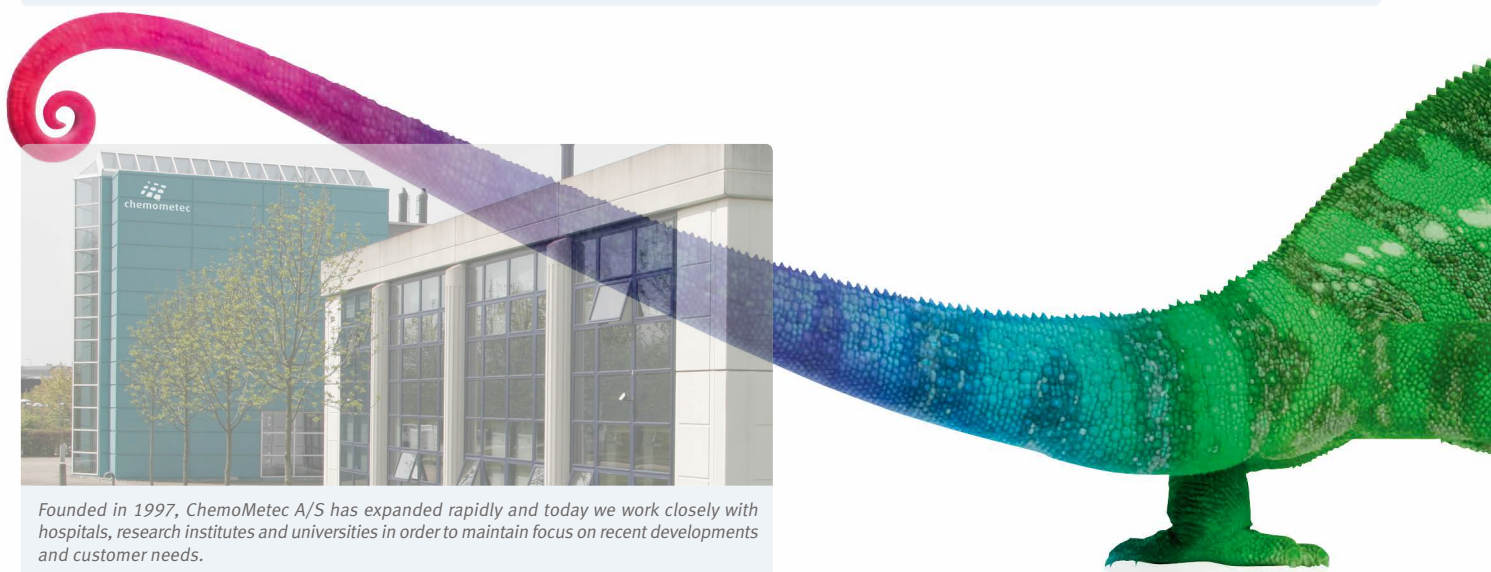
Preparation of samples takes only 5 minutes.



U2OS cells were grown in the absence (upper row) or in the presence (lower row) of etoposide and the DNA content was measured using the Two-Step Cell Cycle Assay and a NucleoCounter® NC-3000™. Scatter plots and histograms were obtained from the NucleoView™ NC-3000 software. Markers in the displayed histograms were used to demarcate cells in the different cells cycle phases. Colored histogram is a merge between untreated (red line) and etoposide treated (blue line) samples.

Technical Specifications

Optics	Lens with x2 magnification, 1/2" CCD with 1392 x 1040 pixels
Sample device	NC-3000 cassettes, NC-3000 disposable chamber slides (2 and 8 chambers per slide)
Excitation (nm)	Seven LED light sources with peaks at 365, 405, 455, 475, 530 and 630 (standard-version).
Emission (nm)	Nine interchangeable emission filters: Em 430/20, Em 470/55, Em 475/15, Em 530/15, Em 560/35, Em 580/25, Em 675/75, Em 630 LP, Em 740/60 (standard version)
Sample consumption	60 µl (cassettes), 30 µl (A2 slides), 10 µl (A8 slides)
Analyzed volume	3.2 µl sample (cassettes), 0.8-16 µl sample (chamber slides)
Optimal range	5×10^4 - 5×10^6 cells/ml (for counting)
Cell types	Mammalian cells, yeast, insect cells, avian cells
Minimum requirements	Windows 7, 8.1 or 10, USB 2.0, screen resolution 1366 x 768 pixels, 4 GB RAM and 10 GB free disc space
Data presentation	Images, tables, histograms, scatter plots
Data export	CSV, ACS, FCS, PDF
Weight/Dimensions	14 kg, 29 x 29 x 31 cm [H x W x D]
Supply voltage	100-240V~ 50-60Hz
Power consumption	5/50W (power save mode/peak)



Founded in 1997, ChemoMetec A/S has expanded rapidly and today we work closely with hospitals, research institutes and universities in order to maintain focus on recent developments and customer needs.

We are located near Copenhagen, Denmark, with modern administration, production and laboratory facilities. A subsidiary is located in the San Francisco area in the USA.

The ChemoMetec product range is marketed globally to a wide range pharmaceutical and biotech companies, universities and institutes.

ChemoMetec is listed on the Nasdaq OMX in Copenhagen. **NASDAQ OMX**



For more information, please visit
www.chemometec.com/NC-3000

www.youtube.com/chemometec

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The information contained herein is to the best of our knowledge accurate and complete. However cell species and cell environments may vary in property. Therefore systematic and/or random deviation between estimates obtained by the NucleoCounter® NC-3000™ and other cell counting methods may occur. As such, nothing contained or stated herein, including results obtained from use of the NucleoCounter® NC-3000™, shall be construed to imply any warranty or guarantee. ChemoMetec A/S and affiliated companies shall not be held liable for damages, and customers shall indemnify ChemoMetec A/S and affiliated companies against liability flowing from use of potentially inaccurate data generated by the NucleoCounter® NC-3000™. It is recommended that all results obtained with the NucleoCounter® NC-3000™ be validated against appropriate reference methods and/or traditional laboratory methods at regular intervals.