CyFlow® Space

Your Flexible Flow Cytometer

Ultimate Flexibility

Modular System

The CyFlow Space flow cytometer is a modular system with ultimate flexibility: from a basic configuration up to a multi-laser and multi-parameter system, you're sure to have access to the right tools.

Forget about the limitations of fixed instrument configurations and restricted laser wavelengths. The CyFlow Space lets you adapt your flow cytometer to your individual application and can accommodate complex customized panels and experiments. With 10+ different laser choices, up to 16 parameters and a large range of optical filters from which to choose, you can optimize every fluorescence channel to meet your needs. Upgrades or changes are quick, easy and can be performed on site.

Application Areas

Research field	Industrial field
Biomedical research	Quality control
Microbiology	Industrial biotechnology
Cell biology	Industrial microbiology
Biotechnology	Food & beverage industry
Agroscience	Plant & animal breeding
Marine biology	Aqua culture
Environmental science	Industrial development

Report of a multi-color analysis of CD3/CD4/CD45 on CyFlow Space with FloMax® software.

CyFlow® Space Flow Cytometer

Flexibility for Your Changing Needs

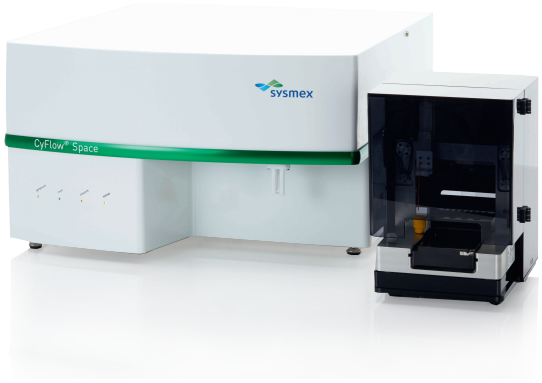
Analyzing cells and particles, whether from blood, plasma, tissue, plants, cell cultures or other materials, is an important part of research and industrial development. To obtain statistically significant results and the confidence to proceed and invest further in your project, you need high throughput and a precise system for the detection of each cell type. The ability to measure thousands of cells within seconds is essential.

Flow Cytometry (FCM) is the answer. Since it is a non-destructive method, it reflects the real distribution on a cellular level, quickly and with the utmost accuracy. Of course, FCM is not new as it has been a proven technology for over 45 years. With many available options, choosing the analyzer that meets both your immediate and future needs is critical.

The CyFlow Space Affords You Space to Grow and Adapt

The CyFlow Space flow cytometry system is unique in its offering of flexibility and precision. Thanks to its adaptable configuration, it allows you to grow with your ever-changing needs. Should those needs change, you can extend it or upgrade it, modularly. This kind of flexibility delivers the freedom to operate the instrument in routine settings, in specialized research departments or in core facilities with a range of connected working groups.

In terms of FCM protocols, new fluorochromes with different spectra are launched to the market regularly. To take advantage of these changes, the ability to work with optimized excitation lights through different color lasers and suitable optical filter sets is a necessity. This calls for instruments that can be customized with respect to their configuration, but at the same time, remain user-friendly with a straightforward workflow. You want to concentrate on your research and not a complicated tool.



CyFlow Space with Autoloading Station for high-speed automated sampling.

Ease of Use

The CyFlow Space operation is intuitive and gives users easy access to the instrument's full capabilities. CyFlow Space maximizes up-time with a 5-minute startup and easy automatic shutdown.

To further its user-friendliness, the CyFlow Space's operating software, FloMax®, is intuitive and efficient. It integrates instrument control, including convenient acquisition and analysis, with both online and offline data analysis and a compensation tool in a single software package. Many of its functions are just a click away, such as digital compensation of fluorescent cross talk. Pre-defined and freely adaptable instrument setting and panel modes facilitate switching between different applications.

FloMax is designed for applications including immunology, cell biology, microbiology, and biotechnology. To ensure compatibility with many of the most common FCM analysis programs, it uses the Flow Cytometry Standard (FCS) data format and lets you generate individual data reports in flexible formats.

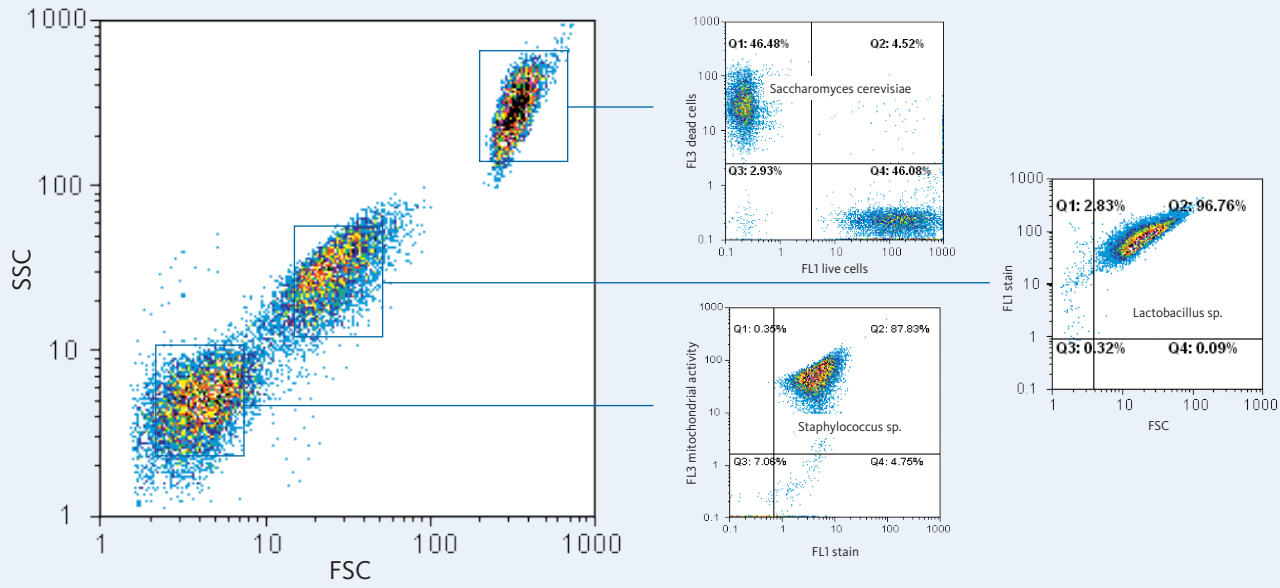
The unique Sysmex counting principle of 'True Volumetric Absolute Counting' (TVAC) eliminates the need for time–consuming and costly counting beads. The integrated CCD camera allows you to monitor the signal directly on the display to instantly check the sample flow.

Modular Extension Possibilities

As part of the Sysmex FCM concept, the CyFlow Space can be expanded and upgraded modularly by adding an Autoloading Station and other units, such as a piezoelectric cell sorter device. Upgrade options include adding laser light sources, optical parameters and fluorescence channels.

CyFlow Space Autoloading Station

To achieve higher throughput, you can add the Autoloading Station, which enables automated and accurate uptake of samples with high-speed sample loading. The station performs a flexible sample-to-sample cleaning procedure and can read both 96- and 384-well plates.



Separation of differently sized organisms during a single measurement in a scatter plot: Staphylococcus sp. – Lactobacillus sp. – Saccharomyces cerevisiae. The subsequent analysis comprised mitochondrial activity measurement of Staphylococcus DNA staining of Lactobacillus, and viability measurement of Saccharomyces.

CyFlow Space Sorting Module

The sorting module is one of our unique technical solutions. It works as a closed system and lets you sort cells and particles precisely and stably, without sacrificing purity. It combines a high-resolution flow chamber with a piezo element and electric activation. In contrast to standard droplet sorters, the process in Sysmex sorters is smooth and reduces mechanical stress – essential for numerous applications with fragile cell types, such as neuronal stem cells. As a closed sorting solution, it also offers the advantages of 'closed system' sorting of viable cells for subsequent cell culture and aerosol-free sorting to prevent biohazardous exposure.

Other modules, such as light polarization component or an anaerobic cabinet, are available on request.

A Long History of Quality and Accuracy

Since 1968, when Partec launched the first commercially available flow cytometer, we have been tightly focused on developing our technology in line with market demands. Sysmex stands for high precision and quality. With decades of experience in the biotechnology market, our technology has been used with great success in various fields in industry, research and development.

The high quality of our FCM instruments results in systems with exceptional stability and sensitivity. In the CyFlow Space system, a highly precise optical bench is combined with a powerful electronic and computer system resulting in real-time signal analysis.

Technical Specifications

Lasers / LEDs	Detectors	Exemplary dyes
BLUE LASER 488 nm (50 mW fixed/ adjustable to 200 mW)	Green Orange Orange Red Red I Red II Far Red	FITC / GFP / Alexa Fluor 488 PE / YFP PE-Texas Red / PI PE-Cy5 / PerCP PE-Cy5.5 / PerCP-Cy5.5 PE-Cy7
RED LASER 638/640 nm (25/40 mW)	Red I Red II Far Red	APC / APC-Cy5 APC-Cy5.5 / Cy5.5 APC-Cy7
VIOLET LASER 405 nm (100 mW)	Blue Green Orange	Pacific Blue / Alexa Fluor 405 / CFP Cyan / AmCyan / brilliant violet 510 Pacific Orange / brilliant violet 605
UV LASER 375 nm (60 mW) HIGH-POWER UV LED 365 nm	Blue	DAPI / Hoechst 3342
GREEN LASER 532 nm (30 /100 mW)	Orange Red	mStrawberry / PE mCherry / PI / PE-Texas Red
YELLOW LASER 561 nm (100 mW)	Orange Red	PE / DS Red / PE-Texas Red PE-Cy5 / PI / mCherry / mRuby
ORANGE LASER 594 nm (50 mW)	Orange Red Red Far Red	Texas Red / Alexa Fluor 594 / mStrawberry APC / mCherry / mRFP / JRed mPlum

Available light sources and exemplary detector configurations

Light Sources and Optics
Flexible choice of up to 5 light sources on the stand-alone analyzer and 3 light sources with the integrated sorter.

Flow System
Quartz flow cuvette for laminar sample transport and hydrodynamic focusing
Biosafety cleaning system
True Volumetric Absolute Counting (TVAC) based on mechanical volume measurement

Electronics and Signal Processing
Selectable linear, 3- or 4-decade logarithmic scale
16-bit analog-to-digital converters, selectable trigger parameter
Pulse height, area and width analysis for doublet discrimination

FloMax® Operating Software
Based on Microsoft Windows®
Master licence for instrument control, data acquisition and data analysis
Data analysis software for multi-parametric flow cytometry data files in FCS 2.0 or FCS 3.0 standard format

Computer System
Latest industry standard Windows® PC with Microsoft Office®
Microsoft Windows® 7 professional 32-bit operating system
22" color LCD TFT display
DVD-RW, USB and Ethernet ports

Options
Immersion gel coupling
CyFlow® Space sorter module
CyFlow® Space Autoloading Station with CyPad software

Weight
approx. 37 kg

Dimensions (W x H x D)
main unit: 560 x 300 x 650 mm

For Research Use Only.
Not for use in diagnostic or therapeutic procedures.

Manufacturer:
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Program availability varies by location. Programs and specification subject to change without notice.

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