

CyFlow[®] Cube series

Appealing from every angle



CUB⁸



CUB⁶

CyFlow[®] Cube 6 and Cube 8: compact, economical flow cytometers with a great performance

Panta rhei – a flexible solution for demands in flow

Flow cytometry (FCM) need no longer be limited to high-end cell biology laboratories or core facilities. Our small cytometers – easy to use and maintain – deliver high performance to your workbench. When performing basic research and/or industrial monitoring, you need easy and cost-effective access to FCM technology with various standard routine applications, such as cell counting, viability testing or the ability to determine apoptosis. Thanks to their flexibility, they are also suited to a range of other applications.

You need modern FCM technology in the shape of fully integrated, silent and compact systems. They have to be simple to use and robust enough to fulfil a role as your laboratory 'work horse'. A reliable and seamless workflow is a 'must'.

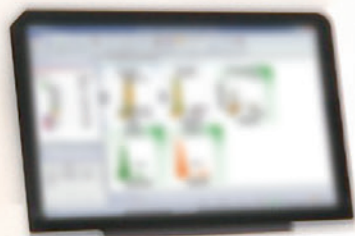
The budget is crucial. You need a high-quality solution that is economical yet fully flexible to be adapted to your flowing needs. Our solutions ensure your financial investment can be moderate, with an affordable total cost of ownership thanks to low service and calibration costs.



* **reddot design award**
winner 2012
(CyFlow[®] Cube 8)



reddot design award
best of the best 2013
(CyFlow[®] Cube 6)





CyFlow® Cube series – compact and economic

Our CyFlow® Cube series features two models, the CyFlow® Cube 6 and the CyFlow® Cube 8. These innovative stand-alone flow cytometers offer all you need to precisely acquire cells or most other particles from samples in a single, device with a small footprint – a powerful, network-ready computer, a foldable TFT monitor, and state-of-the-art software. Fluidic reservoirs are built-in (Cube 8). FCM technology integrated in a new, award-winning* product design – it's appealing from every angle.

Economic viability is crucial in research and industry. While the underlying technology is of superb quality, maintenance and running costs are low. And thanks to extensive customisation possibilities, your investment is long-term and operational costs are markedly reduced.

Fluorescence-based flow cytometry (FCM) was invented by Partec in 1968. Today Sysmex can look back on over 45 years' experience in this demanding field. We continue to develop and manufacture our own technologies and instruments, with almost 80% created in-house.

As a result, Sysmex stands for high precision and quality 'Made in Germany'. Our technology and intense knowledge are appreciated in various fields, such as basic research, clinical research, industrial applications and disease monitoring.

From basic applications to optimised solutions for individual assays

The modular architecture of the Sysmex CyFlow[®] Cube instruments offers you a variable choice of configurations to match your applications. Customise your device now, and then adapt it for your next project. You can select from a portfolio of the most recent lasers, optical parameters, an automated sample loading device and even a sorter module (Cube 8). This technological advantage paired with brand new software lets you adapt your instrument to suit most applications in industry and research.

CyFlow[®] Robby Autoloading Stations

There are two different models available. The Robby 6 and Robby 8 complement the Cube 6 and Cube 8 instruments to which they are directly connected. Our autoloading stations are controlled by the CyFlow[®] Software and let you quickly load your flow cytometer – automatically and accurately. Both stations can process two standard and deep-well 96-well-plates or 48-well-plates (with V, U and flatbottom) and up to 120 tubes from a single load.

CyFlow[®] Cube Sorter Module

The cell sorter module is one of Sysmex's unique technical solutions. As an optional add-on for the CyFlow[®] Cube 8 it

combines a flow chamber with a piezo element, including electric activation. This cell sorter lets you sort cells or particles stably and non-destructively with high yield and purity. It works as a closed system and, in contrast to typical droplet sorters, the process is smooth with reduced mechanical stress. This is important when working with fragile cell types, such as neuronal stem cells. As a closed sorting solution, it is aerosol-free so you avoid biohazardous exposure yet lets you deliver sterile sorting of viable cells for subsequent cell culture. For operator safety you can place your CyFlow[®] Cube 8 Sorter under a standard clean bench – this is possible thanks to its small footprint with no external components (see page 8).



CyFlow[®] Cube 6 with Robby 6 Autoloading Station



CyFlow[®] Cube 8 with Robby 8 Autoloading Station



CyFlow[®] Cube 6

This cost-effective system is our most compact flow cytometer. It comes in three basic configurations with the most commonly used lasers, blue 488 nm and red 640 nm, and with up to six optical parameters. You can expand this space-saving instrument with an autoloading station.

Quality through experience

Our instruments provide premium technology with high stability, sensitivity and resolution. The stability of the optical bench leads to a virtually calibration-free system with no need for daily functional verification. Its precision blends in excellently with the accurate fluidic system in variable configurations.

This high standard of the optical bench is complemented by electronics and a computer system to match that deliver the basis for real-time signal analysis and processing with high fluorescence and scatter sensitivity.



CyFlow[®] Cube 8

This model is more flexible and modular. You can configure it individually by choosing from ten different light sources and numerous optical filter sets. You can combine up to three lasers and a UV LED with up to eight optical parameters in your system. You can expand your CyFlow[®] Cube 8 with an autoloading station and/or integrate a piezo-electric cell sorter module.

Operational simplicity supports your workflow

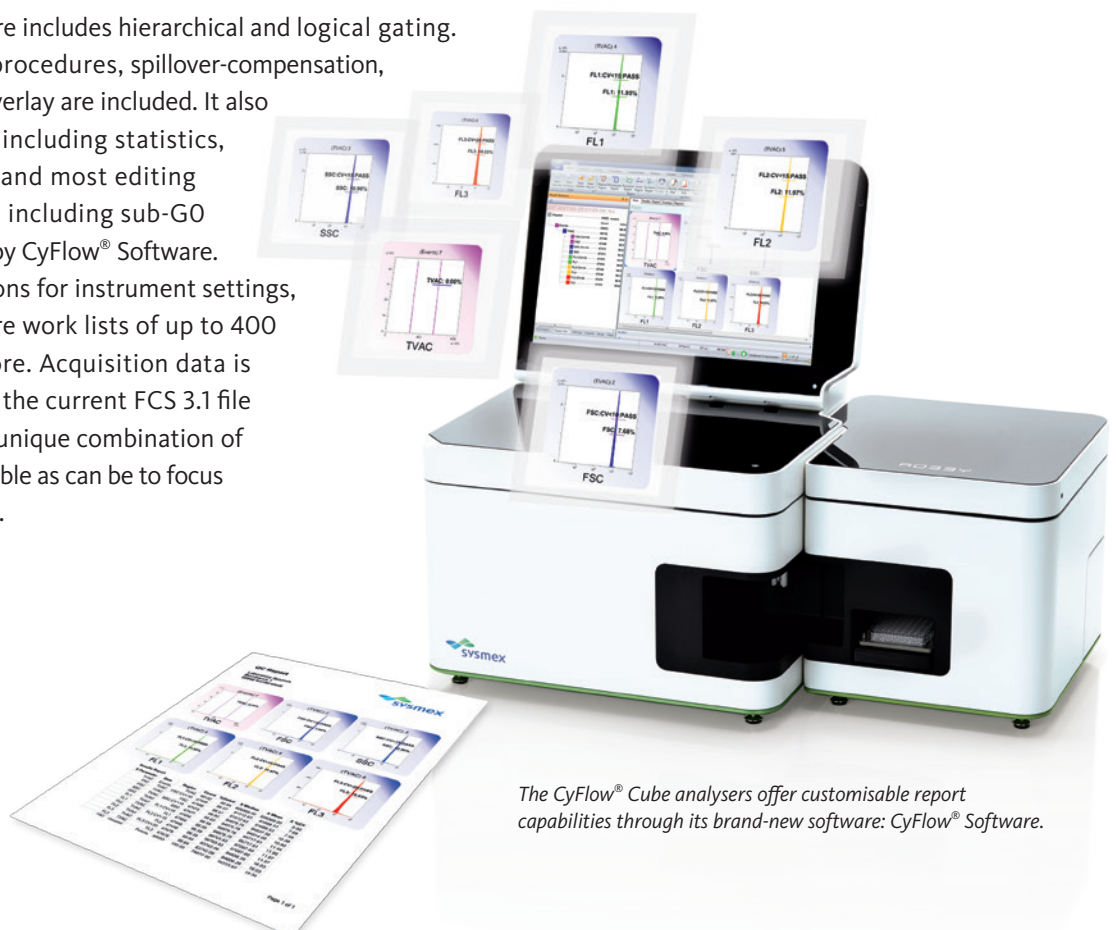
CyFlow® Cube instruments impress with their accessibility, simplicity and intuitive software operation. And thanks to its automated start-up process it takes less than five minutes to start up and you can get to work in the mornings pretty much straight away.

CyFlow® Software, the Cube series' software, provides state-of-the-art software functionalities as all-in-one software for acquisition and analysis. It is intuitive, easy-to-use and highly flexible for use with various applications. This helps you save valuable time in your laboratory. CyFlow® Software supports four analysis technologies: a pre-selected event limit in regions, syringe-controlled volumetric measurement, a time-controlled measurement and the special 'True Volumetric Absolute Counting' (TVAC) – Sysmex's unique counting principle that requires no time-consuming and cost-intensive reference counting beads.

With CyFlow®, you get an easy-to-learn and convenient tool for data acquisition and analysis in a single package. It is a highly adaptable and flexible operating tool for each application. Its many state-of-the-art functionalities provide instrument control and acquisition, on- and offline data analysis and safe data management. You can use CyFlow® for most applications in cell biology, especially in combination with the excellent Sysmex monoclonal antibody reagents, biotechnology and microbiology, and in industrial monitoring processes, such as beverage control.

As flexible as can be

This brand-new software includes hierarchical and logical gating. Wizards for cleaning procedures, spillover-compensation, histogram or dotplot overlay are included. It also offers a report wizard including statistics, compensation matrix and most editing options. DNA analysis including sub-G0 and Debris is provided by CyFlow® Software. It provides saving options for instrument settings, gating strategies, entire work lists of up to 400 samples and much more. Acquisition data is automatically saved in the current FCS 3.1 file format. Thanks to this unique combination of features, you are as flexible as can be to focus on your research results.



The CyFlow® Cube analysers offer customisable report capabilities through its brand-new software: CyFlow® Software.

Technical specifications

Lasers / LEDs	Detectors	Exemplary dyes	Available for
BLUE LASER 488 nm (50 mW fixed/ adjustable to 200 mW for Cube 8)	■ Green ■ Orange ■ Orange Red ■ Red I ■ Red II ■ Far Red	FITC / GFP / Alexa Fluor® 488 PE PE-Texas Red® / PI PE-Cy5 / PerCP PE-Cy5.5 / PerCP-Cy™ 5.5 PE-Cy7	Cube 6, Cube 8
RED LASER 638 nm (25 mW) 640 nm (40 mW)	■ Red I ■ Red II ■ Far Red	APC / APC-Cy™ 5 APC-Cy™ 5.5 / Cy™ 5.5 APC-Cy™ 7	Cube 6, Cube 8
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	Cube 8
UV LASER 375 nm (60 mW) HIGH-POWER UV LED 365 nm	■ Blue	DAPI / Hoechst 3342	Cube 8
GREEN LASER 532 nm (30 / 100 mW)	■ Orange ■ Red	mStrawberry / PE mCherry / PI / PE-Texas Red®	Cube 8
YELLOW LASER 561 nm (100 mW)	■ Orange ■ Red	PE / DS Red / PE-Texas Red® PE-Cy5 / PI / mCherry	Cube 8
ORANGE LASER 594 nm (50 mW)	■ Orange Red ■ Red ■ Far Red	Texas Red® / Alexa Fluor® 594 / mStrawberry APC / mCherry mPlum	Cube 8

Available light sources and exemplary detector configurations (various filters available)

Instrument models

- CyFlow® Cube 6, CyFlow® Cube 8

Light sources and optics

- CyFlow® Cube 6:
optical parameters: max. 6 (4 colours + FSC + SSC)
light sources: max. 2 lasers (488 nm and 640 nm)
- CyFlow® Cube 8:
optical parameters: max. 8 (6 colours + FSC + SSC)
light sources: max. 3 lasers plus UV LED
- CyFlow® Cube Sorter (Cube 8 with integrated sorter module):
optical parameters: max. 5 (3 colours + FSC + SSC),
light sources: max. 2 lasers
- optical parameters with selected PMTs and exchangeable optical filters

Flow system

- Quartz flow cuvette for laminar sample transport and hydrodynamic focusing with sheath fluid
- Sample port with biosafety cleaning system
- True Volumetric Absolute Counting (TVAC) based on mechanical volume measurement (bead-free)
- Computer-controlled syringe pump speed, continuously adjustable from 0.1–20 µL/s and three fixed speed settings (low 0.5 µL/s, medium 2 µL/s, high 5 µL/s)
- Cube 6 2x bottles (external), Cube 8 2x bottles (built-in with drawer) without external components
- Syringe-based silent operation

Electronics and signal processing

- Selectable linear or 4-decade logarithmic or v-log scale
- 16-bit analogue-to-digital converters, selectable trigger parameter (with 'and/or' logic) and individual threshold level settings
- Maximum acquisition rate 15,000 particles/s
- Particle size detection: 0.1–100 µm

Software

- Operating system: Microsoft Windows™
- CyFlow™ Software for data acquisition, analysis and reporting

Computer system

- Integrated Microsoft Windows™ PC and network capability
- Integrated, foldable colour LCD TFT display (15" Cube 6 / 19" Cube 8)
- 4x USB port, 2x display port, 1x VGA port, 1x Ethernet port

Options

- CyFlow® Robby 6 Autoloading Station for CyFlow® Cube 6, CyFlow® Robby 8 Autoloading Station for CyFlow® Cube 8, both for well plates and sample tubes
- CyFlow® Cube Sorter module for CyFlow® Cube 8, for closed cell and particle sorting

Weight

- Cube 6: 18 kg; Cube 8: 40 kg

Dimensions (WxHxD)

- Cube 6: 385 x 290 x 280 mm; with open display 528 mm height; with autoloading station: W 745 mm
- Cube 8: 500 x 370 x 470 mm; with open display 670 mm height; with autoloading station: W 840 mm

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