

Flow Cytometers for Research and Industry

# CyFlow Cube Series

Reliable, Compact and  
Economical Flow  
Cytometers with  
Great Performance



CUB<sub>8</sub>



CUB<sub>6</sub>

# CyFlow Cube 6 and Cube 8

## Compact, Economic Flow Cytometers with Exceptional Performance

Flow cytometry (FCM) is no longer limited to high-end cell biology laboratories or core research facilities. When performing basic research and/or industrial monitoring, you need access to easy and cost-effective FCM technology that will help you advance your research.

Standard applications and beyond are now within your reach, such as:

- Cell Counting
- Viability testing
- Ability to determine apoptosis
- Fluorescent protein expression
- Immunophenotyping

The CyFlow Cube series, CyFlow Cube 6 and the CyFlow Cube 8 instruments are fully integrated, compact, robust FCM solutions that will meet your daily research laboratory needs. These innovative, stand-alone flow cytometers offer all you need to precisely acquire cells or particles from samples in a powerful single device.

A network-ready computer, a foldable LCD monitor, and state of the art software make the CyFlow series the complete research solution. FCM technology integrated in an award-winning product design.



★ red dot design award  
winner 2012

(CyFlow<sup>®</sup> Cube 8)



red dot design award  
best of the best 2013

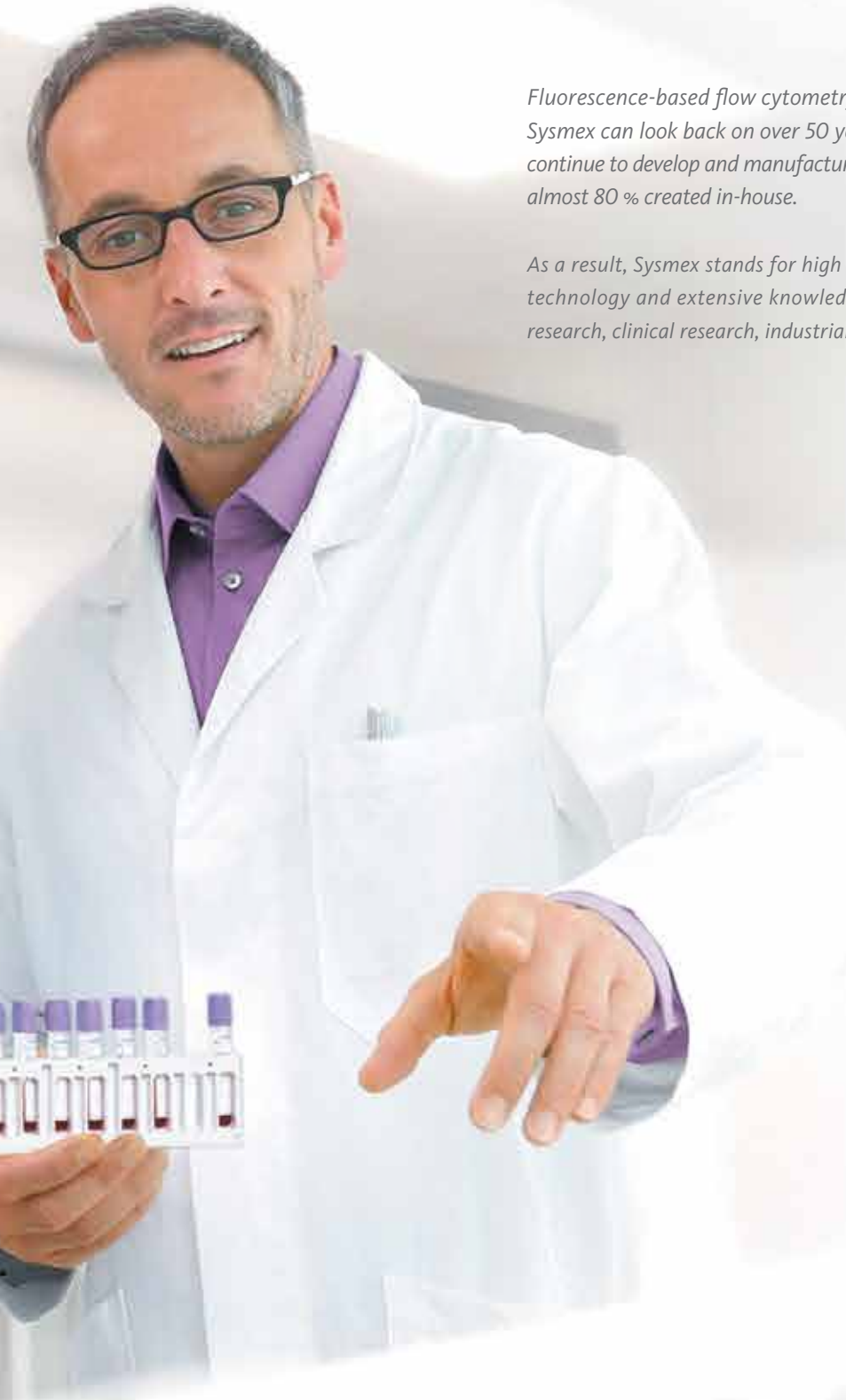
(CyFlow<sup>®</sup> Cube 6)

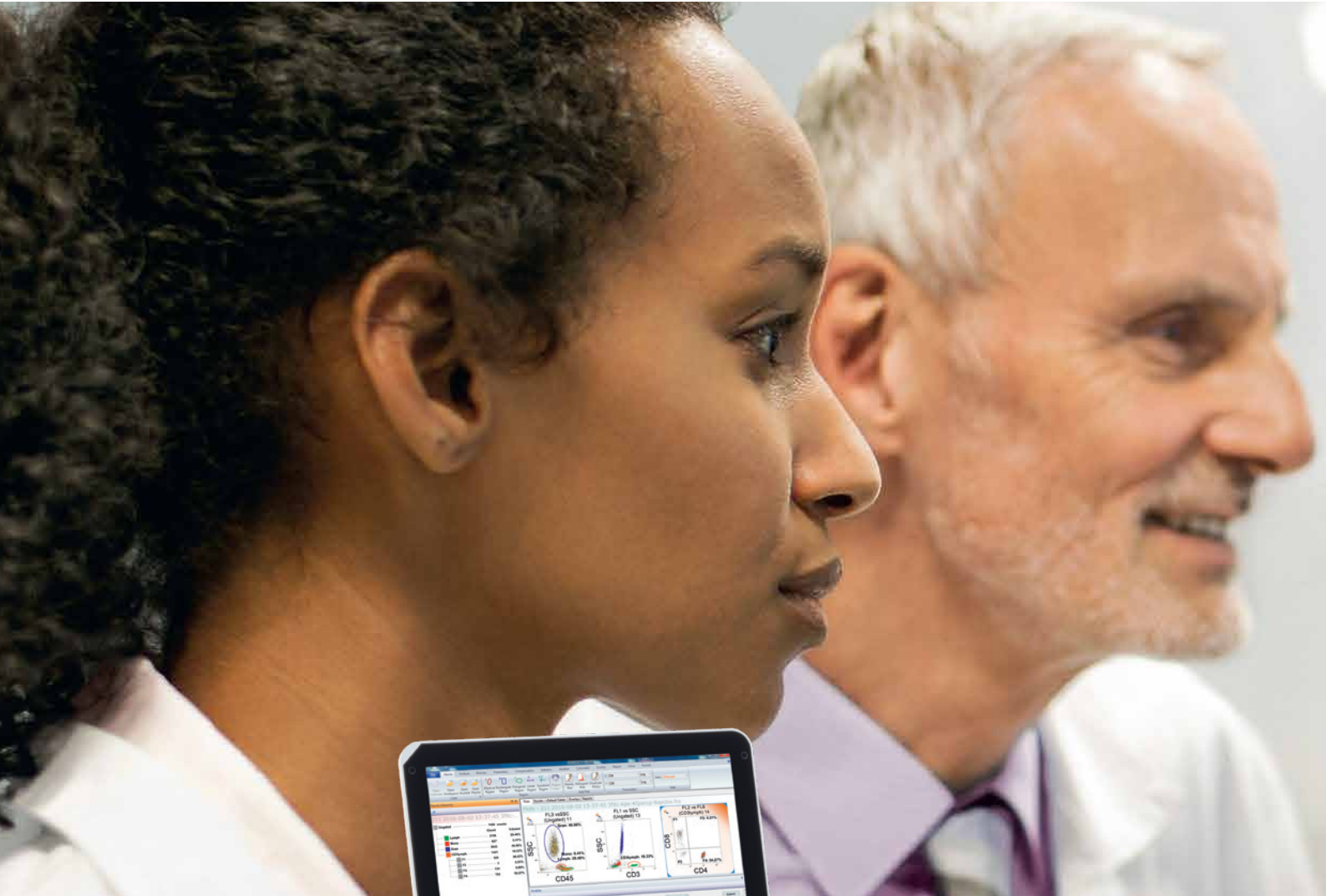


Economic viability is crucial to your research and the advancement of science. Why sacrifice quality due to budget constraints? The CyFlow Cube series provides the customisable high level of technology that you need at a low operating cost.

*Fluorescence-based flow cytometry (FCM) was invented by Partec in 1968. Today Sysmex can look back on over 50 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 extensive knowledge are appreciated in various fields, such as basic research, clinical research, industrial applications and disease monitoring.*





## 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.

## Take your Research from Basic Application to an Optimised Solution.

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 CyFlowSoftware 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

## 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.



## Technical specifications

Lasers / LEDs	Detectors	Exemplary dyes	Available for
<b>BLUE LASER</b> 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
<b>RED LASER</b> 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
<b>VIOLET LASER</b> 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
<b>UV LASER</b> 375 nm (60 mW) <b>HIGH-POWER UV LED</b> 365 nm	■ Blue	DAPI / Hoechst 3342	Cube 8
<b>GREEN LASER</b> 532 nm (30 / 100 mW)	■ Orange ■ Red	mStrawberry / PE mCherry / PI / PE-Texas Red®	Cube 8
<b>YELLOW LASER</b> 561 nm (100 mW)	■ Orange ■ Red	PE / DS Red / PE-Texas Red® PE-Cy5 / PI / mCherry	Cube 8
<b>ORANGE LASER</b> 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

- n CyFlow Cube 6, CyFlow Cube 8

### Light sources and optics

- n CyFlow Cube 6:  
optical parameters: max. 6 (4 colours + FSC + SSC)  
light sources: max. 2 lasers (488 nm and 638 nm or 640 nm)
- n CyFlow Cube 8:  
optical parameters: max. 8 (6 colours + FSC + SSC)  
light sources: max. 3 lasers plus UV LED
- n CyFlow Cube Sorter (Cube 8 with integrated sorter module):  
optical parameters: max. 5 (3 colours + FSC + SSC),  
light sources: max. 2 lasers
- n optical parameters with selected PMTs and exchangeable optical filters

### Flow system

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

### Electronics and signal processing

- n Selectable linear or 4-decade logarithmic scale
- n 16-bit analogue-to-digital converters, selectable trigger parameter (with 'and/or' logic) and individual threshold level settings
- n V-Log (providing access to negative value display)

### Software

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

### Computer system

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

### Options

- n CyFlow Robby 6 Autoloading Station for CyFlow Cube 6,  
CyFlow Robby 8 Autoloading Station for CyFlow Cube 8
- n CyFlow Cube Sorter module for CyFlow Cube 8

### Weight

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

### Dimensions (WxHxD)

- n Cube 6: 385 x 290 x 280 mm; with open display 528 mm height
- n Cube 8: 500 x 370 x 470 mm; with open display 670 mm height

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