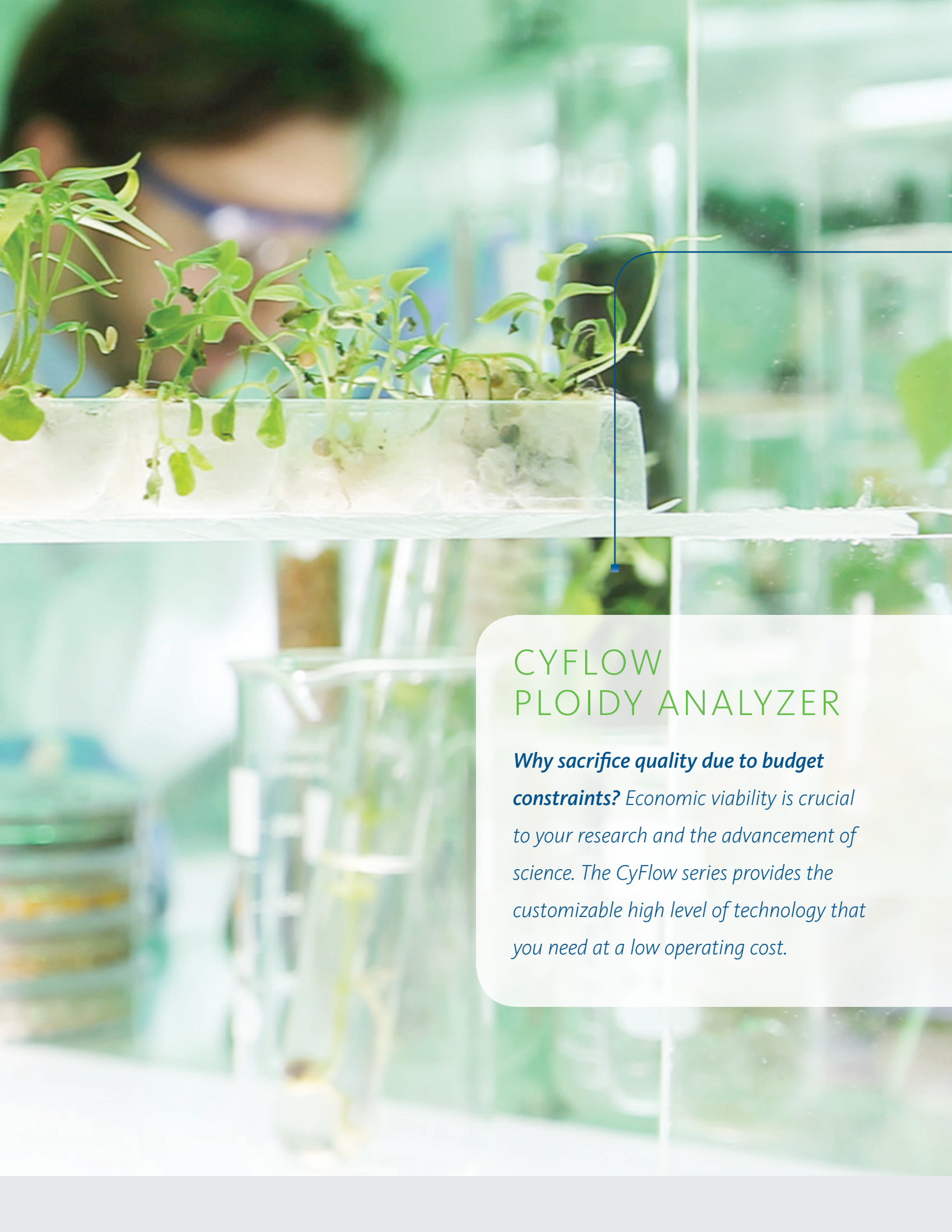
CYFLOW™ PLOIDY ANALYZER

High-resolution DNA Analysis for Agroscience, Breeding, and Aquaculture

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



CYFLOW PLOIDY ANALYZER

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

A DEDICATED SOLUTION FOR PLOIDY ANALYSIS AND GENOME SIZE DETERMINATION

Determining ploidy is a particularly important form of analysis in plant breeding and aquaculture: controlling the ploidy level is often essential for monitoring the outcome of breeding procedures and quality in seed and plant production.

Accurately determining genome size and ploidy levels plays a major role in today's evolutionary biology, taxonomy and ecology. This determination helps to characterize and understand how species develop and the details of population structures.

Counting chromosomes by classical light microscopy has been replaced by flow cytometry, i.e. determining fluorescently labeled nuclei and their analysis in a flow cytometer. This method saves time and cost, as it provides precise results quickly with an efficient and validated work-flow.

Flow Cytometry is the gold standard in industry and research for determining both the ploidy level and genome size in plants, animals and microorganisms.

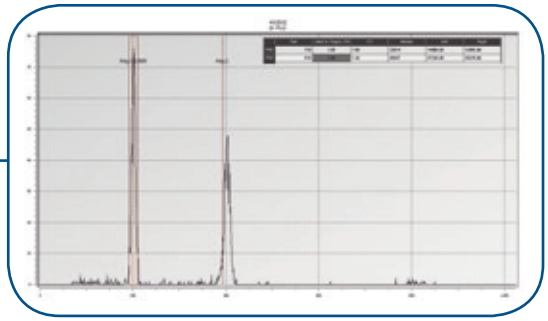
SYSMEX:
YOUR FLOW CYTOMETRY SOLUTION

Based on the proof of concept of its predecessors in industry and research, Sysmex is proud to offer you the latest flow cytometry solution with its third-generation CyFlow Ploidy Analyzer.

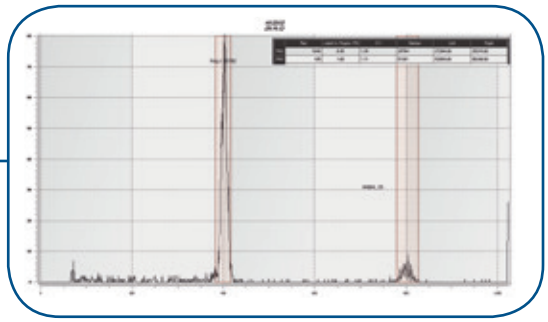
- **Genome size determination requires stoichimetric DNA labeling** and the lowest coefficients of variation in DNA quantification. CyFlow uses a 532 nm laser and the DNA fluorochrome propidium iodide, which produces superior results for genome size analysis compared to standard flow cytometers using lasers of 488 nm.

- Due to its **superb high-resolution DNA histograms** and its ease of use, the fluorescent dye DAPI is the fastest and most economical solution for analyzing ploidy level and detecting aneuploidy.

  Sysmex's unique UV LED (365 nm) is the optimal light source to fully exploit this fluorochrome's features.



Zea mays, 2n - diploid, CyStain™ DAPI staining



Zea mays, 4n - tetraploid, CyStain DAPI staining

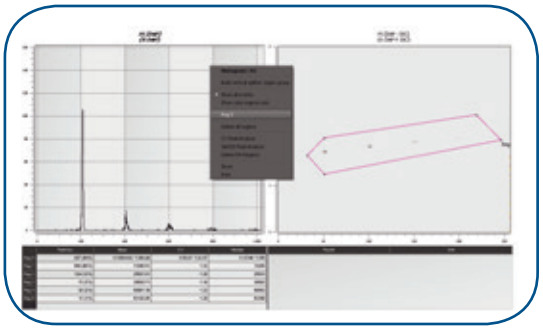
The CyFlow Ploidy Analyzer provides ploidy and genome size analysis in less than two minutes. The instrument is available in the three following versions: for the analysis of samples stained with (1) DAPI, (2) PI or (3) DAPI and PI.

For higher throughput, you can equip the system with an Autoloading Station that accepts up to two 96-well plates or 120 test tubes as a single load. Sample preparation is easy, quick and cost-effective thanks to Sysmex's ready-to-use staining reagents and protocols.

SYSMEX REAGENT KITS

Optimal Sample Preparation

We offer a range of Sysmex reagent kits to prepare your samples for flow cytometry analysis on your CyFlow. The reagent kits include ready-to-use staining solutions and nuclei extraction for analyzing absolute or relative genome size variation and ploidy level of plant cells and cells of different origin (e.g. leaf and root tissue, seed, in vitro material). The staining can be applied to various biological tissue specimens.



The CyView™ software integrates instrument control and complete data analysis for ploidy and genome size measurements. It combines a 1-parameter DNA histogram display for genome size and ploidy determination with a 2-parameter dot-plot display (64 – 4,096 channels) to gate and separate intact and fragmented nuclei.

CyView features two automatic peak-finding algorithms and manual peak definition. The software also lets you create user-defined peak-finding procedures to optimise this function in terms of the requirements of specific experiments. Results of data analysis are clearly represented on screen and can be exported together with the related DNA histograms to Microsoft® Excel® worksheets for further analysis.

CyStain™ PI Absolute T reagent kit

Order No.	Reagents	Dye
05-5001	CyStain UV Ploidy	DAPI
05-5002	CyStain UV Precise P	DAPI
05-5002-a	CyStain UV Precise P automate	DAPI
05-5003	CyStain UV Precise T	DAPI
05-5003-a	CyStain UV Precise T automate	DAPI
05-5004	CyStain DNA 1 Step	DAPI
05-5005	CyStain DNA 2 Steps	DAPI
05-5022	CyStain PI Absolute P	PI
05-5023	CyStain PI Absolute T	PI

CYFLOW PLOIDY TECHNICAL SPECIFICATIONS

Instrument Models and Light Sources

Model	Light Source(s)
CyFlow Ploidy Analyzer DAPI	UV LED (365 nm)
CyFlow Ploidy Analyzer PI	Green Laser (532 nm, 30 mW)
CyFlow Ploidy Analyzer DAPI + PI	UV LED (365 nm) Green Laser (532 nm, 30 mW)

Optics

- 1 or 2 optical parameters with selected photomultiplier tubes (PMT)
- Standard set-up and filters for propidium iodide (PI) and/or DAPI/SSC

Flow system

- Quartz flow cuvette for laminar sample transport and hydrodynamic focusing
- Sample port with biosafety cleaning function
- True Volumetric Absolute Counting (TVAC) based on mechanical volume measurement
- Computer-controlled syringe pump speed, adjustable from 0 – 20 µL/s
- Fluid and waste reservoirs with fluid level sensors

Electronics and signal processing

- Selectable linear or 4-decade logarithmic scale
- 16-bit analog-to-digital converters, selectable trigger parameter and individual threshold level settings

Software

- Operating system: Microsoft Windows®
- Sysmex CyView operating software for real-time data acquisition, display, analysis and reporting
- Data format: flow cytometry standard (FCS)

Computer system

- Integrated Microsoft Windows PC
- Integrated, fold-down 15" color LCD TFT display
- Ethernet and USB ports
- DeskJet color printer
- Optional external screen (dual screen mode)

Options

- CyFlow Robby 6 Autoloading Station

Weight

- 40 lbs; with Autoloading Station 66 lbs

Dimensions (W x H x D)

- 15.2" W x 11.4" H x 11" D; with open display 20.8" H; with Autoloading Station 29.2" W

Visit us at: www.sysmex.com/flowcytometry

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