

CyFlow[®] Ploidy Analyser

DNA Analysis



reddot design award
best of the best 2013

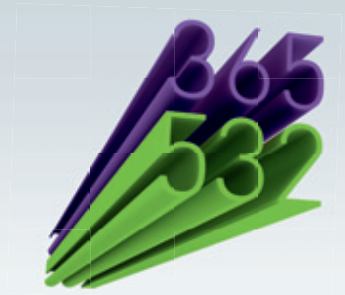
The Ideal Solution for Agrosiences | Breeding | Aquaculture



Unique Instrument Design



Built-in 15" TFT Screen

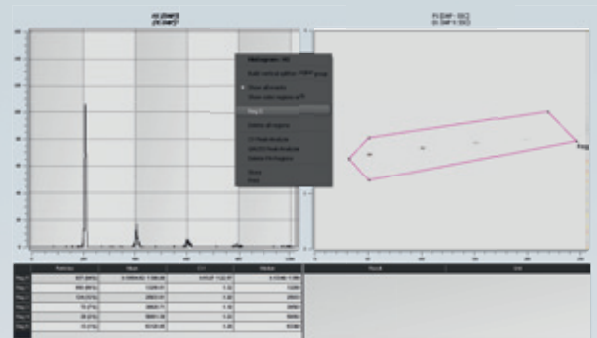


Two different Wavelengths available

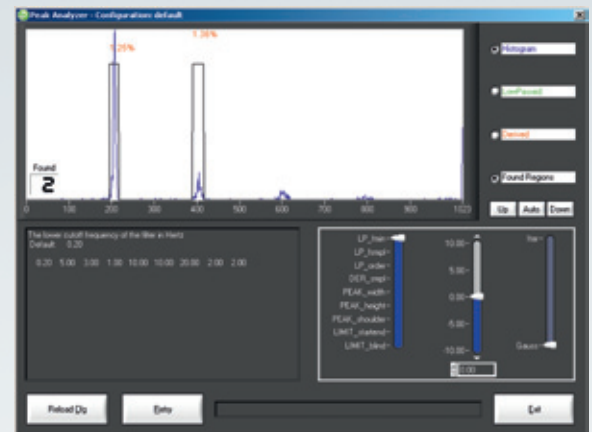
CyFlow[®] Ploidy Analyser



CyFlow[®] Ploidy Analyser with optional autoloading station



The CyView[™] software integrates instrument control and a complete data analysis solution 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 to gate and separate intact and fragmented nuclei.



CyView[™] features two automatic peak finding algorithms and a manual peak definition. The software offers also the possibility to create user defined peak finding procedures in order to optimize this function to the requirements of specific experiments. Results of data analysis are clearly represented on-screen and can be directly exported together with the related DNA histograms to external MS Excel worksheets.



HIGHLIGHTS

Comfort

- Ploidy and genome size analysis in less than 2 minutes
- Preparation and staining of metaphase chromosomes is not necessary
- Replaces time-consuming microscopic evaluation
- Easy and quick sample preparation by ready-to-use Partec Protocols
- Optional autoloading station for 96-well plates or 120 test tubes

Versatility

- Any living plant material can be analysed: leaves, seedlings, roots, flowers, seeds

Precision

- Detection with +/- 1 chromosome accuracy in many plants

Mobility

- Compact and robust instrumentation allows measurement at various locations

Agrosciences | Breeding | Aquaculture

- Ploidy determination
- Genome size determination
- C - values
- Homo-/heteroploid Hybrids
- Aneuploidy
- Endopolyploidy
- Agmatoploidy
- Apomixis and breeding mode
- Allopolyploid genome composition
- Sex determination
- Cytotype distribution
- Rare cytotypes
- Cell- and sperm cell counting



Intuitive Powerful FCM Software



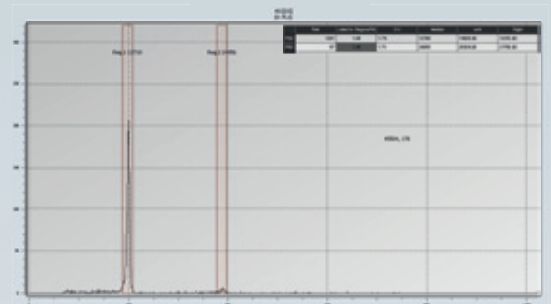
Optional CyFlow® Robby 6 Autoloading Station



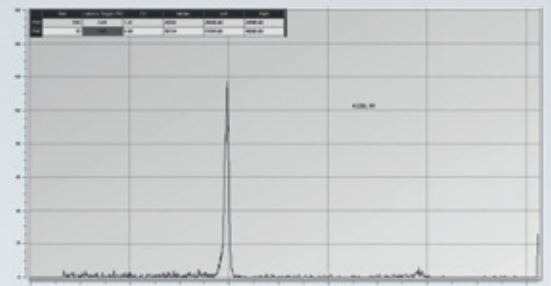
Minimal Setup Time

High resolution DNA analysis with DNA-specific fluorochromes DAPI or propidium iodide

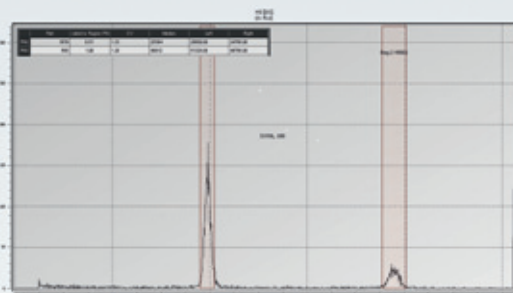
In the CyFlow® Ploidy Analyser dedicated and perfectly suited DNA fluorochromes for both, ploidy analysis and genome size analysis can be used. The analysis of genome size requires a stoichiometric staining by a DNA intercalating dye as well as low coefficient of variation of DNA peaks. In the CyFlow® Ploidy Analyser the dye Propidium Iodide (PI) fulfils these requirements at its best as the Partec green solid-state laser excites PI with highest efficiency at 532 nm and therefore delivers superior results compared to standard flow cytometers exciting PI with 488 nm at lower efficiency. Due to its superb, well-known DNA histograms of highest-resolution combined with its ease-of-use and a low susceptibility to other cellular components the fluorescent dye DAPI represents the most powerful and economic solution to analyse ploidy level and an-euploidy. The unique Partec UV-LED with light emission at 365 nm is the optimal light source to fully exploit these features.



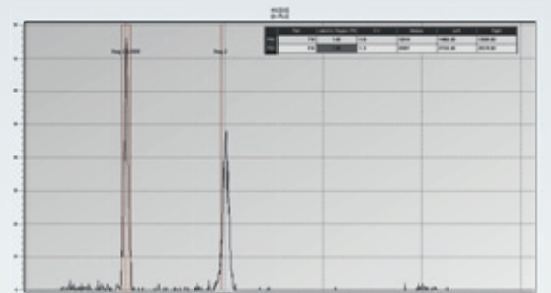
Vicia faba 2n - diploid, test for ploidy, DAPI staining



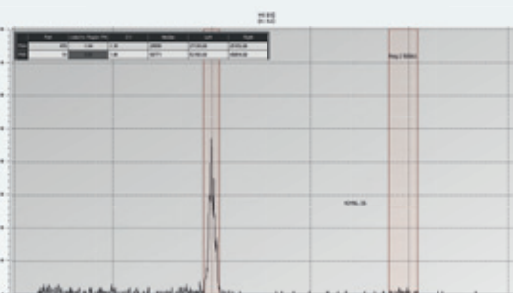
Vicia faba 4n - tetraploid, test for ploidy, DAPI staining



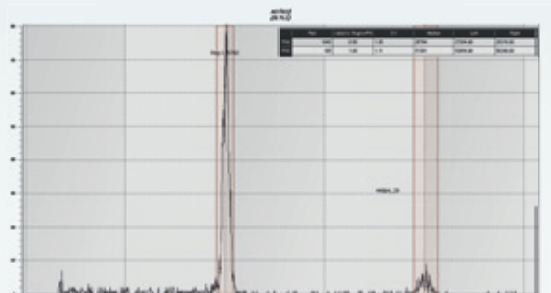
Lycopersicon esculentum, 1.96 pg DNA (2n), Propidium Iodide



Zea mays, 2n - diploid, CyStain DAPI staining



Pisum sativum, 9.09 pg DNA (2n), Propidium Iodide



Zea mays, 4n - tetraploid, CyStain DAPI staining



CyFlow® Ploidy Analyser



CyFlow® Ploidy Analyser

TECHNICAL DATA

General

The CyFlow® Ploidy Analyser is a compact flow cytometer for ploidy analysis, high resolution DNA and genome size analysis for plants, animals and micro-organisms.

Light Sources

This modular instrument is equipped with a UV LED (365 nm) and/or a Nd-YAG green laser at 532 nm (30 mW).

Optics

- _ Instrument configurations with 1 or 2 optical parameters with photomultiplier tubes (PMT).
- _ Standard set-up and filters for propidium iodide PI (long pass filter 590 nm) and/or DAPI/SSC (long pass filter 435 nm).

Flow System

- _ Synthetic quartz flow cuvette for laminar sample transport with sheath fluid
- _ Sample port with computer controlled BioSafety cleaning system, avoids sample droplets and minimizes cross contamination
- _ Contamination-free computer controlled precision syringe pump
- _ Sample volume up to 1000 µl with adjustable sample speed between 0.2 and 20 µl/s
- _ Easily accessible sheath fluid and waste reservoirs with fluid level sensors
- _ 2 x 1 litre glass bottle for sheath and waste fluid.

Computer

- _ Built-in WIN 7 computer
- _ External screen optional (dual screen mode)
- _ Integrated 15" TFT LCD display
- _ 4 USB ports
- _ Color printer
- _ Keyboard and mouse
- _ Ethernet connection

Software

- _ Windows™ 7 operating system
- _ CyView™ software for real-time data acquisition, data display and analysis
- _ Flow Cytometry Standard data format FCS 3
- _ 16 bit resolution
- _ Multiple language support
- _ True Volumetric Particle counting function
- _ Auto-start and auto-store function
- _ DNA histogram and 2-parameter dotplot display (64 – 4096 channels displayed)
- _ Linear and logarithmic data display
- _ Manual and automated DNA peak analysis with different algorithms
- _ Doublet discrimination
- _ Direct reporting into PDF
- _ Multiple tube reporting
- _ Data export to Excel and Power Point format
- _ Automated workflow for ploidy analysis of 96-well plates

Requirements

- _ Power: 100/240 V AC, 60 VA, 50/60 Hz
- _ Operating environment: temperature from 15 to 30 °C, humidity 20 – 85 % relative (non-condensation), clean room environment, direct sunlight should be avoided

Size

- L 381 x H 279.5 x D 280 mm (no autoloader)
- L 741 x H 279.5 x D 370 mm (with autoloader)
- Height with open screen 528 mm
- Weight: 11.5 kg

Quality Control and Calibration

- _ Calibration Beads UV (Order-No. 05-4022)
- _ Calibration Beads green (Order-No. 05-4006)
- _ DNA Control UV (Order-No. 05-7302)
- _ DNA Control PI (Order-No. 05-7303)

Accessories

- _ Sample tubes (Order-No. 04-2000)
- _ CellTrics 30 µm disposable filters (Order-No. 04-0042-2316)
- _ CellTrics 50 µm disposable filters (Order-No. 04-0042-2317)
- _ Cleaning Solution (Order-No. 04-4009)
- _ Decontamination Solution (Order-No. 04-4010)
- _ Hypochlorite Solution (Order-No. 04-4012)
- _ Sheath Fluid (Order-No. 04-4007)

| Order-No. | Instruments | |
|-------------|--|---|
| 11-01-1002 | Partec CyFlow® Ploidy Analyser „DAPI“ | UV-LED 365 nm + 1 optical parameter DAPI |
| 11-01-1003 | Partec CyFlow® Ploidy Analyser „PI“ | Nd-YAG green laser 532 nm (30 mW) + 2 optical parameters SSC, PI |
| 11-01-1004 | Partec CyFlow® Ploidy Analyser „DAPI + PI“ | Nd-YAG green laser 532 nm (30 mW) UV-LED 365 nm + 2 optical parameters DAPI/PI, SSC |
| CY-S-3080-6 | CyFlow® Robby 6 Autoloading Station | 96 well plates 120 tubes |

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



WolfLabs

Pricing on any accessories shown can be found by keying the part number into the search box on our website.

The specifications listed in this brochure are subject to change by the manufacturer and therefore cannot be guaranteed to be correct. If there are aspects of the specification that must be guaranteed, please provide these to our sales team so that details can be confirmed.

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Please contact us if this literature doesn't answer all your questions.