

Configurations & Specifications

Quantum P Flow Cytometer

Frequently Used configurations

Plant Breeding Application	Analysis type	Light Sources Excitation	Optical Channels
Cell Vitality & Counting - pollen - spores (fungi) - bacteria - etc.	FDA / PI ⁽¹⁾ stained cell analysis	Laser Blue 488 nm/200 mW	FSC Forward Scatter SSC Side Scatter FL1 Green (510-540 nm: FITC, FDA, GFP, ...) FL2 Orange (540-590 nm: PE, PI, ...) FL3 Red (>590 nm: Cy5, ...)
Ploidy Analysis	DAPI stained DNA analysis	LED UV 465 nm/500 mW (UV/PI)	FL1 Blue(> 435 nm), DAPI
DNA-content	PI stained DNA analysis	Laser Green 530 nm/30 mW	FL1 Orange (>530 nm), PI
Ploidy Analysis & DNA-content	DAPI / PI stained DNA analysis	LED UV 465 nm/500 mW (UV/PI) Laser Green 530 nm/30 mW	FL1 Blue(> 435 nm), DAPI FL2 Orange (>530 nm), PI
All of the above - advised for flow cytometry R&D purposes	DAPI / PI stained DNA analysis FDA / PI stained cell analysis	Laser UV 365nm / 60mW Laser Blue 488 nm/200 mW	FSC Forward Scatter SSC Side Scatter (blue laser) SSC Side Scatter (UV laser) FL1 Green (510-540 nm: FITC, FDA, GFP, ...) FL2 Orange (540-590 nm: PE, PI, ...) FL3 Red (>590 nm: Cy5, ...) FL4 Blue(> 435 nm), DAPI
Custom	Custom build ⁽²⁾	Contact us for additional options	

Features and Specification

Feature	Specification
Analysis Time⁽³⁾	Manual: <30 s/sample Sample autoloader: down to 6 s per well <3 min/24 well plate/individual sample tubes <10 min/96 well plate <40 min/384 well plate
Counting Precision/Accuracy	1%/3% (standard deviation)
Analysis Volume Range	5-1000 µl
Minimum Sample Volume	50 µl
Sample Cross Contamination⁽³⁾	<0.1%
Particle Size Range	0.05-100 µm
Molecular Sensitivity⁽³⁾	<500 MESFL
Sample Analysis Speed	0.5-20 µl/s
Supported Sample Entry	3.5 ml tube 96, 384 well plate (including deep wells)
Customer Specific Configurations	Open system design, individual support
Excitation Light Source⁽³⁾	Solid state laser Light emitting diode (LED)
Optical Detection⁽³⁾	High efficiency light collection Modular spectral selection filter sets (user exchangeable) Photomultiplier (PMT) with wide dynamic range Single Photon Detection (pantau® technology) ⁽⁴⁾ Flow quality camera
Software/Computer System	CyPAD® instrument control and data analysis Linear/2D barcode support Configured compact personal computer Ethernet connection Microsoft Windows 10 Multi- touch monitor Keyboard + mouse
Automated Results Reporting	Microsoft Excel (macro-free), XML, LIMS connections
Data Formats	FCS 3.0, XML, CSV, Excel
Sample Preparation (add/incubate reagents)⁽⁴⁾	Flexible configurations upon request
Sample Re-Suspension	Yes
Compact Size	415 x 270 x 360 mm (w x h x d), 8 kg 750 x 295 x 360 mm, 14 kg including sample loader ⁽⁴⁾
Standards	CE (Safety, EMC) CDRH/FDA RoHS (EU/China) TUV ISO 9001:2015

Notes

(1) PI = Propidium Iodide

(2) Any combination of light sources and optical channels is possible (eg. Ploidy determination + pollen vitality in one Quantum P).
For easier maintenance we recommend using different setups for each application.

(3) Application and configuration dependent

(4) Optional

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