

CytoFLEX™ Flow Cytometer

Technical Specification



The CytoFLEX™ flow cytometer is designed to deliver superior performance, flexibility, and ease of operation for research applications. Simplified system setup, data acquisition, analysis, and export of experimental results are integrated into a complete workflow solution with CytExpert software.

The CytoFLEX™ system features a compact footprint, integrated detection optics and lasers, and a simplified, highly reliable fluidics system. The CytoFLEX flow cytometer is easily installed and upgradeable.

Twenty one (21) standard configurations are available to provide the ultimate in application flexibility with up to three lasers and 15 parameters.

Together, the CytoFLEX™ system and CytExpert software brings high performance flow cytometry to a variety of researchers with simple to complex needs.

OPTICS

Excitation Optics

The CytoFLEX system optical deck is designed for up to three lasers.

The system has fixed alignment. The built-in capability to automatically check laser alignment during daily QC which adjusts laser delays as needed to ensure for optimal performance.

Laser Specifications

BLUE LASER

Wavelength: 488 nm; 50 mW Beam spot size: 5 μ m x 80 μ m

RED LASER

Wavelength: 638 nm ; 50 mW Beam spot size: 5 μ m x 80 μ m

VIOLET LASER

Wavelength: 405 nm; 80 mW Beam spot size: 5 μ m x 80 μ m

Emission Optics

Flow Cell

Patent-pending alignment-free integrated optics cuvette flow cell design with >1.3 NA
Flow Cell dimensions: 420 μ m x 180 μ m internal diameter

Forward Scatter Detection

Si-photodiode with built-in 488/8 band pass filter: Patent pending coherent detection using photodiodes

Fluorescence And Side Scatter Detection

Light collected by the objective lens is delivered by fiber optics to Fiber Array Photo Detector arrays. High-performance customized FAPD modules for all fluorescence and SSC channels.

Reflective optics with single transmission band pass filter in front of each FAPD.

Violet Side Scatter Configuration

CytoFLEX offers ability to configure the violet laser detector to collect side scatter, to better resolve nano particles with the VSSC parameter

PERFORMANCE

Side Scatter Resolution

<300 nm

Violet Side Scatter Resolution

<200 nm

Forward And Side Scatter Resolution

Scatter performance is optimized for resolving lymphocytes, monocytes, and granulocytes.

Carryover

Less than or equal to 1.0%

Sensitivity

FITC: <30 molecules of equivalent soluble fluorochrome (MESF-FITC)

PE: <10 molecules of equivalent soluble fluorochrome (MESF-PE)

Fluorescence Resolution

rCV <3%



Nominal Acquisition Rate

30,000 events per second with 15 parameters

Signal Processing

Fully digital system with 7 decades dynamic range

Digital Sampling Rate

25 MHz

Signal

Pulse area, height for every channel, width for one selectable channel



Sample Flow Rates

Low 10 uL/min

Med 30 uL/min

Hi 60 uL/min

Adjustable from 10 uL/min to 240 uL/min

Fluid Capacity

Standard 4-L tanks

Sheath Fluid Consumption

Consumption rate 10 mL/min

Integrated Cleaning Cycles

Daily Clean, Deep Clean

Sample Input Formats

5 mL (12 x 75-mm) polystyrene and polypropylene

Microcentrifuge 1.5 mL and 2 mL



Software

CytExpert Software

Language

English and Chinese

Operating System

Windows® 7 Professional 64-bit

FCS Format

FCS 3.0

Minimum Specifications

CPU: Intel I3 @ 2.9 GHz

RAM: 4 GB

Storage: 256 GB

1 Gigabit Ethernet port

2 USB 3.0 ports

4 USB 2.0 ports

Compensation

Full matrix compensation, manual and automatic

Novel Compensation Library for storage of spillover values of dyes to easily determine the correct compensation matrix with new gain settings

Quality Control

Auto daily QC routine with Levey-Jennings tracking



Dimensions (W x D x H)

CYTOMETER

42.5 cm x 42.5 cm x 34 cm

16.7 in x 16.7 in x 13.4 in

TANKS AND HOLDER

14 cm x 35.6 cm x 43.4 cm

5.5 in x 14.0 in x 17.1 in

Weight

Cytometer: 51.6 lbs / 23.4 kg

Power Specifications

Voltage: 100–240 V

Power: 150 -250 W

Operating Temperature

15-30 °C, 59-86 °F



21 Available System Configurations

Lasers	Total FL Channels	488nm	638nm	405nm
		FL Channels	FL Channels	FL Channels
3	13	5	3	5
3	12	5	3	4
3	12	4	3	5
3	11	4	3	4
3	11	3	3	5
2	11	5		5
3	10	5	3	2
3	10	4	3	3
3	9	3	3	3
3	9	4	3	2
3	8	3	3	2
3	7	3	3	2
2	6	3		3
2	6	3	3	
2	6	4	2	
2	5	3	2	
2	4	3	1	
2	4	2	2	
2	4	2		2
1	5	5		
1	4	4		

fast track to success.



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