CYTOMETER SPECIFICATIONS

Performance

Fluorescence Sensitivity	Estimated detection limit is 750 molecules of equivalent soluble fluorescein
Fluorescence Resolution	Coefficient of variation in FL2-Area of <3%, full peak for propidium iodide-stained chicken erythrocyte nuclei
Forward and Side Scatter Sensitivity	Sensitivity enables the separation of fixed platelets from noise
Forward and Side Scatter Resolution	Scatter performance is optimized for resolving lymphocytes, monocytes, and granulocytes

Excitation Optics

Optical Platform	Fixed optical assembly
Lasers	15 milliwatt 488 nm, air-cooled Argon-ion laser; life expectancy >5,000 hours Optional second laser: nominally 635 nm
Beam Geometry	Prismatic expander and achromatic spherical lens provide 22 µm x 66 µm elliptical beam for argon ion laser, and nominally 15 µm x 61 µm elliptical beam for red diode laser

Emission Optics

Optical Coupling	Quartz cuvette is coupled to emission lens by refractive index matching optical gel for optimum collection efficiency
Background Rejection	Obscuration blade and slit minimize unwanted laser radiation at the detector.
Forward Scatter Detector and Filter	High performance solid state silicon detector with 488 nm band pass filter for clear signal detection, and red diode laser signal rejection
Side Scatter Detector	High performance photomultiplier using Brewster angle beam splitter in the emission optical train
Fluorescence Detectors and Filters	Four high performance, high dynamic range photomultipliers with band pass filters: 530 nm (FITC), 585 nm (PE/PI), 661 nm (APC), and >650 nm (PerCP) with base unit, >670 nm (PerCP) with FL4 option

Fluidics

General Operation	Front key panel control provides three modes: RUN, STNDBY, and PRIME; automatic standby mode conserves sheath fluid by stopping sheath flow when no sample tube is installed.
Fluid Reservoirs	Easily accessible 4-L capacity sheath and waste containers are housed in a convenient pull-out drawer; level detectors automatically indicate low levels of sheath or high levels of waste
Sample Flow Rates	Three selectable flow rates of 60 µL/min, 35 µL/min, and 12 µL/min. Pressure difference between sheath and sample is regulated and monitored; particle velocity in flow cell is approximately 6 meters/second.
Quartz Cuvette	Internal cross-section is rectangular 430 µm x 180 µm; external surfaces are anti-reflection coated for maximum transmission of laser light
Sample Concentration	Single-cell suspension of 10^5 to 2 x 10^7 particles/mL recommended range

Signal Processing

Workstation Resolution	1024 channels on all parameters
Dynamic range	Logarithmic amplifiers for SSC, FL1, FL2, FL3, and FL4 (with FL4 option) provide four log decade range
Fluorescence Compensation Networks	Fluorescence spectral overlap can be compensated between FL1 and FL2, between FL2 and FL3 channels, and between FL3 and FL4 (with FL4 option)
Pulse Processing	Width and Area measurements for discriminating doublets; available for all fluorescence parameters
Time	Time available correlated to any parameter for kinetic experiments or other applications.

SAMPLE LOADING SPECIFICATIONS

Sample delivery	Tube-lifter design with multiple sensors which verify rack identification and tube position
Rack Capacity	40 (12 x 75-mm) tubes per rack
Rack Support	Up to 16 racks per FACS Loader

Data Entry	Sample information, reagent panels, and rack information can be defined for up to 640 tubes (40 tubes x 16 racks) at a time
Loader Control	Automated control through WorklistManager software and manual control with stat interrupt capability through FACS Loader electronic keypad
Barcode Scanner (optional)	Automates data entry for Codabar, Code 39, Interleaved 2 of 5, Code 2 of 5, and Code 128
Mixing Mode	Adjustable High Energy and Low Energy mix

SORTING SPECIFICATIONS

Sorting Purity	>95%
Capture Rate	300 cells/second
Sort Modes	Three modes (all aerosol-free): single cell, exclusion, and recovery
Recovery	Depends upon sample and sorting conditions, >50%
Sterile Sorting	System design allows for aerosol-free sterile sorting

DATA MANAGEMENT SYSTEM

Workstation	FACStation
Central Processing Unit (CPU)	Power PC Reduced Instruction Set Computing (RISC) CPU running at 120 Mhz clockspeed
Memory	40 MB RAM
Level 2 Cache	256 kilobytes
Data Storage	1.2 gigabyte hard disk
Networking	On-board Ethernet, built-in AppleTalk Networking, and Apple File Sharing
CD ROM	4x Speed CD 600i
Monitor	Apple Vision 1710 (17 inch Trinitron tube)
Data File Structure	Flow Cytometry Standard (FCS) 2.0 ASCII results file for data export

REMOTE DIAGNOSTICS

Remote diagnostics modem provided for direct customer support instrument interaction

INSTALLATION REQUIREMENTS

Power	**US:** 120 VAC ± 10%; 50/60 Hz ± 2 Hz; Current: 20 amps maximum **Outside US:** External transformer needed for 100 VAC ± 10%; 50/60 Hz; and 220/240 VAC ± 10%; 50/60 Hz ± 2 Hz
Water Supply	None required
Air Supply	None required

OPERATING ENVIRONMENT

Temperature	16-29C (60-85F)
Humidity	10-90 relative non-condensing
Air Filtering	Excessive dust and smoke must be avoided
Lighting	Optics and detectors are shielded from room lighting
Size	Sensor module: width: 91.4 cm (36 in); depth: 61.5 cm (24.2 in); height 67.3 cm (26.5 in); 124.5 (49 in) with cover open Computer: 48 x 41 x 54 cm (19”L x 16”D x 23”H) Printer: 48 x 41 x 54 cm (19”L x 16”D x 23”H)
Weight	Sensor Module: 109.1 kg (240 lbs) Computer: 50 kg (110 lbs)

Specifications subject to change without notice.