EPICS™ XL™ and XL•MCL™

Flow Cytometry Systems

A 4-color flow cytometric analyzer with state-of-the-art Digital Signal Processing for reliable linearity and drift free signal amplification and color compensation.

System II software helps eliminate tedious manual processes by automating instrument set-up and compensation for 2-, 3- and 4-color applications. It also accommodates a number of optional application systems, including reticulocyte analysis, CD34+ enumeration, DNA analysis and an automated analysis algorithm that allows a full CDC recommended panel in only two tubes. With System II software, EPICS XL systems also provide:

- AutoPrime Feature – If data does not appear within a special set display region, AutoPrime will flush the flow cell as many as three times. If a problem still exists, the system will stop acquisition, ensuring that your samples are not wasted.
- Barcode Scanner – Provides positive identification of carousel number, tube position and sample, which ensures greater reliability of test results.
- FastSet and FastComp Functions – Enables users to simply grab a displayed population and place it where they want it – the software does the rest.

Specifications

Detector Parameters/Data Acquisition

Up to 8 signals plus Auxiliary, Prism, Time and Ratio can be acquired simultaneously from a possible 21 available parameters

- Forward Scatter – linear, log and peak
- Side Scatter – linear, log and peak
- PMT1-PMT4- linear, log and peak
- One Auxiliary (AUX) signal assignable to any linear or peak signal
- Time
- Ratio (derived parameter)
- PRISM (derived parameter)
- Four Decade logarithmic DIGITAL SIGNAL PROCESSING (DSP) of linear FS, SS, FL1-FL4 data

Laser

Uniphase Argon ion, 488nm, 15mW output

Flow Cell

250µm square channel BioSense enhanced optics quartz mounted with vertical (upwards) flow path for superior hydrodynamic focusing and minimal bubble retention

Detectors

- Forward Scatter Detector – Solid state detector with Patented Fourier design allowing for adjustable sensitivity via Neutral Density Filter
- Side Scatter Detector – High performance photodiode
- Fluorescent Detectors – High performance photomultipliers with spectral sensitivity from 200nm-800nm

User Interchangeable Optical Filters

- Band Pass (BP): 525nm, 575nm, 620nm, 675nm
- Dichroic Long Pass (DL): 488nm, 550nm, 600nm
- Blocking Filter (BK): 488nm

Sensitivity & Resolution

- Resolves 0.5µm diameter particles from background noise with maximum detection up to 40µm diameter particles
- < 1000 MESF for FITC and PE when measured with FCSC™ microbeads and IsoFlow™ sheath fluid

Sample Handling

Biohazard contained wash station rinses sample probe preventing carryover

- 12 x 75mm glass or plastic tubes
- Quick tube manual sampling station
- Optional 32 tube Multi Carousel Loader (MCL)
  - The MCL patented design vortexes each tube individually before sample acquisition
  - The MCL uses a visible Class II laser reader operating at 670nm with a maximum power output of 1 mW, for use with Interleaved 2-of-5, Code 39®, Codabar, Code 128 bar codes

Throughput and Acquisition Rates

For 2-color surface markers, processes 60 tubes/hour of normal wholeblood samples (2,500 lymphocytes/µL, 10,000 leukocytes/µL) when acquiring 10,000 lymphocytes at a rate of 1,000 leukocytes/second. The tubes were prepared on a Q-Prep™ workstation or a TQ-Prep™ workstation. Throughput is linked to the number of events acquired, flow rate, and manual versus MCL sampling mode. Faster throughputs are obtained by acquiring fewer events on high flow rate.

Flow Rates

Continuous pressure is applied to the sample tube based on user selected flow rates.

- Low, Medium and High

System II Software

Installed as standard, System II software is complemented with several optional software packages and "plug-ins" to enhance system performance in given applications.

Optional Software

- stemONE™ software for automated enumeration of CD34+ Hematopoietic Progenitor Cells
- tetraONE™ IVD software for automated enumeration of T, B, and NK cells
- reticONE™ IVD software for automated determination of peripheral blood reticulocytes
- MultiCycle for Windows* – DNA analysis software

Installation Requirements

Environmental operating temperature16-32 degrees C (60-90 degrees F)

Dimensions

Allow sufficient space for ventilation, and access for maintenance and service:

- Cytometer
  30.5 cm (12 in.) from the back
  45.7 cm (18 in.) from the top
  30.5 cm (12 in.) on both sides
- Power Supply
  12.7 cm (5 in.) from the back

Utility Connections

Three dedicated 50/60Hz lines: 115VAC, 20A; 220 VAC, 15A

* Windows is a registered trademark of Microsoft Corporation.

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