Specifications

Optics

Excitation Optics

Optical Platform

Aurora contains a fixed optical assembly with the capacity to be configured with up to five spatially separated laser beams. Laser delays are automatically adjusted during instrument QC.

Lasers

Three laser configuration: 405nm: 100mW, 488nm: 50mW, 640nm: 80mW

Four laser configuration: 405nm: 100mW, 488nm: 50mW, 561nm: 50mW, 640nm: 80mW

Beam Geometry

Flat-Top laser beam profile with narrow vertical beam height optimized for small particle detection.

Emission Optics

Emission Collection

Fused silica cuvette coupled to high NA lens for optimum collection efficiency to optical fibers.

Forward and Side Scatter Detection

FSC: high-performance semiconductor detector with 488nm bandpass filter

SSC: Two high-performance semiconductor detectors with 405nm and 488nm bandpass filters

Fluorescence Detectors

Proprietary high sensitivity Coarse Wavelength Division Multiplexing (CWDM) semiconductor array per laser enabling more efficient spectrum capture in the 420-830nm range. No filter changes required for any fluorochrome excited by the 405nm, 488nm, 561nm, 640nm lasers.

Standard Optical Configuration

Violet detector module: 16 channels uneven spaced bandwidth from 420nm-830nm.

Blue detector module: 14 channels uneven spaced bandwidth from 500-830nm.

Red detector module: 8 channels uneven spaced bandwidth from 650-830nm.

Yellow-Green detector module (in four laser systems only): 10 channels uneven spaced bandwidth from 570-830nm.

Fluidics

Sample Flow Rates

Low: 15 µL/min, Medium: 30 µL/min, High: 60 µL/min, Plate high-throughput mode: 100 µL/min

Fluidic Modes

Long clean, SIT flush, Purge filter, Clean flow cell

Manual Sample Input Formats

12x75mm polystyrene and polypropylene tubes

Standard Fluidic Reservoirs

4L fluid container set with level-sensing provided. Compatible with 20L sheath and waste cubitainers.

Volumetric Sensor

Volumetric measurement during sample recording enables calculation of counts per µL for any gated population.

Plate Loader Option

96-well microtiter plate capability

Throughput time 35 minutes at High Throughput mode sampling 7 µL/well

Plate stage temperature: 4-30°C

Plate Loader Carryover

Default mode: ≤0.3%, Low Carryover mode: ≤0.1%, High Throughput mode: ≤1%

Performance

Fluorescence Sensitivity

FITC: <110 MEF, PE: <35 MEF, APC: <15 MEF, Pacific Blue: <200MEFL

*Measurements based on an average from three systems and performed using SPHERO Rainbow Calibration Particle (RCP-30-SA) based on its peak emission channel.

Fluorescence Linearity

FITC R² ≥0.995 / PE R² ≥0.995

Forward and Side Scatter Resolution

Performance is optimized for resolving lymphocytes, monocytes, and granulocytes.

Side Scatter Resolution

Capable of resolving 0.2µm beads from noise.

CARRYOVER

<0.1%

Data Acquisition Rate

35,000 events/s*

*Three-laser system

Software

Spectroflo® Software

Live unmixing during acquisition

Developed specifically to streamline assay setup, data acquisition, and file export

Automated QC module

Autofluorescence extraction

Raw and Unmixed FCS 3.1 files

Electronics

Signal Processing

Digital signal processing with automatic window gate adjustment.

22-bit 6.5 log decades.