

# 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

**Base model three-laser configuration:** 405 nm: 100 mW, 488 nm: 50 mW, 640 nm: 80 mW  
**Available laser upgrades:** 355 nm: 20 mW, 561 nm: 50 mW

#### 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 365-830 nm range. No filter changes required for any fluorochrome excited by the 355 nm, 405 nm, 488 nm, 561 nm, 640 nm lasers.

#### STANDARD OPTICAL CONFIGURATION

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

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

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

#### 4 and 5 Laser Options:

**Yellow-Green detector module:** 10 channels unevenly spaced bandwidth from 570-830 nm.

**Ultraviolet detector module:** 16 channels unevenly spaced bandwidth from 365-830 nm.

## Fluidics

#### SAMPLE FLOW RATES

Low: 15  $\mu$ L/min, Medium: 30  $\mu$ L/min, High: 60  $\mu$ L/min, Plate high-throughput mode: 100  $\mu$ L/min

#### FLUIDIC MODES

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

#### MANUAL SAMPLE INPUT FORMATS

12x75 mm polystyrene and polypropylene tubes

#### STANDARD FLUIDIC RESERVOIRS

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

#### VOLUMETRIC SENSOR

Volumetric measurement during sample recording enables calculation of counts per  $\mu$ L for any gated population.

#### PLATE LOADER OPTION

96-well microtiter plate capability

Throughput time 35 minutes at High Throughput mode sampling 7  $\mu$ L/well

Plate stage temperature: 4-30°C

#### PLATE LOADER CARRYOVER

Default mode:  $\leq$ 0.3%, Low Carryover mode:  $\leq$ 0.1%, High Throughput mode:  $\leq$ 1%

## Performance

#### FLUORESCENCE SENSITIVITY

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

\*Measurements based on an average from three systems and performed using SPHERO Rainbow Calibration Particle (RCP-30-5A) based on its peak emission channel.

#### FLUORESCENCE LINEARITY

FITC  $R^2 \geq$ 0.995 / PE  $R^2 \geq$ 0.995

#### FORWARD AND SIDE SCATTER RESOLUTION

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

#### SIDE SCATTER RESOLUTION

Capable of resolving 0.2  $\mu$ m beads from noise.

#### CARRYOVER

$\leq$ 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.

Threshold using any single parameter or combination of parameters.

#### PULSE SHAPE PARAMETERS

Pulse Area and Height for every parameter. Width for scatter parameters and one fluorescence parameter for each laser.

## Workstation

Workstation specifications may vary between laser configuration; below is for three-laser configuration.

#### OPERATING SYSTEM

Windows® 10 Pro 64-bit

#### PROCESSOR

Intel® Core™ i7 processor, 3.2 GHz

#### RAM

16 GB

#### HARD DRIVE

500GB SSD / 1 TB SATA

#### VIDEO PROCESSOR

NVIDIA® GeForce

#### MONITOR

32" UHD 4K Monitor

## Installation Requirements

Dimensions (W x D x H)

#### INSTRUMENT DIMENSIONS

**Without loader:** 54 x 52 x 52 cm

**With loader:** 58.4 x 62 x 52 cm

#### INSTRUMENT WEIGHT

**Instrument weight (4 lasers):** 80 kg

**Loader weight:** 13 kg

#### COMPUTER DIMENSIONS

29.1 x 9.25 x 34.4 cm

#### RECOMMENDED WORKSPACE

157 x 71 x 132 cm

## Room Requirements

#### POWER

100-240 V, 50/60 Hz, 2A max

#### HEAT DISSIPATION

500 W with all solid-state lasers

#### TEMPERATURE

15-28°C

#### HUMIDITY

20%-85% relative non-condensing

#### AIR FILTERING

No excessive dust or smoke

#### LIGHTING

No special requirements

## Regulatory Status

For Research Use Only. Not for use in diagnostic or therapeutic procedures.