BD Celesta Instrument Guide

CYTOMETER

Components

1 Green button
- Power button. Let lasers warm up for at least 15 mins.

2 Control panel
- Fluidics controls

3 Sample injection port (SIP)
- Tube of water in standby mode when instrument is not in use. *At startup, run water during laser warm up.

4 Optics access door
- 3-laser 12-color system. See Configuration & Panel Tips guide
- *Cytometer is equipped with High Throughput System (HTS)
  See HTS guide for details.

Fluidics Cart

6 On/Off
- Remains on.

7 Sheath
- Sheath box pumps sheath fluid into 8 Plemnum which feeds sheath into the cytometer

9 Waste
- Disconnect from probe. Do not remove filtered cap.
- Check fluid levels on sheath box and waste before use
  Tube mode: Use unlabeled sheath boxes
  Plate mode: Use red labeled (sheath w surfactant) boxes
Celesta Troubleshooting

-Acquisition: No events and RUN button is GREEN

- Cracked Tube
  * Use correct falcon tubes
- Sample is not mixed properly
  * Mix the sample to suspend the cells. Filter if necessary
- Air bubbles in the flow cell or sheath filter
  * Flow cell-prime twice (no more than twice)
  * Sheath filter-bleed filter (roller clamp connected to blue tubing)

-Clogged sample line
  * Run 3ml bleach w/ arm open, run 7 mins with arm closed
  * Run 3ml water w/ arm open, run 15 mins with arm closed

-Use stylus if necessary

-PMT voltages set too low or too high for display parameter
  * Adjust the PMT voltage

-Acquisition: No events and RUN button is ORANGE

- Cracked Tube
  * Use correct falcon tubes
- Sample tube is not properly seated
  * Make sure tube is in place as high as possible
- Sheath container is not pressurized
  * Make sure plenum probe and sensor are tightly sealed

-Air leak at sheath container
  * Check plenum for leaks and bubbles

-Plenum is empty
  * Replace empty sheath box
  * Ensure cart is pumping sheath into plenum
    * If the cart isn’t working, use PBS bottles to fill plenum manually
- Bal seal is worn
  * Replace the Bal seal (spring side up)

-Droplets are visible on the SIP

- Outer sleeve is not seated in the retainer or is not on the SIP
  * Loosen the retainer > reset the sleeve > tighten to the retainer
- Waste line is pinched, preventing proper aspiration/Waste is full
  * Check waste line and/or empty waste

-Black Waste line is clogged
  * Run 3-4ml bleach w/ arm open

- Worn O-ring in the retainer
  * Replace O-ring

-Droplet containment vacuum is not functioning
  * Requires engineer

-Low event rate

- Air bubbles or debris in flow cell
  * Prime fluidics (no more than twice)
- Clogged sample line
  * Remove sample to allow back flushing
  * Run 3ml bleach w/ arm open, run 7 mins with arm closed
  * Run 3ml water w/ arm open, run 15 mins with arm closed
  * Use stylus if necessary

-Erratic event rate

- Sample tube is cracked
  * Replace sample tube
- Air bubbles or debris in flow cell
  * Prime fluidics (no more than twice)
- Clogged sample line
  * Run 3ml bleach w/ arm open, run 7 mins with arm closed
  * Run 3ml water w/ arm open, run 15 mins with arm closed
  * Use stylus if necessary

-Bal seal is worn
  * Replace the Bal seal (spring side up)

-Disorted scatter parameters

- Air bubbles in the flow cell or sheath filter
- Flow cell-prime twice (no more than twice)
- Sheath filter-bleed filter (roller clamp connected to blue tubing)
- Air leak at sheath container
  * Check plenum for leaks and bubbles

-Dirty flow cell
  * Requires a monthly clean

-Bal seal

-O-ring