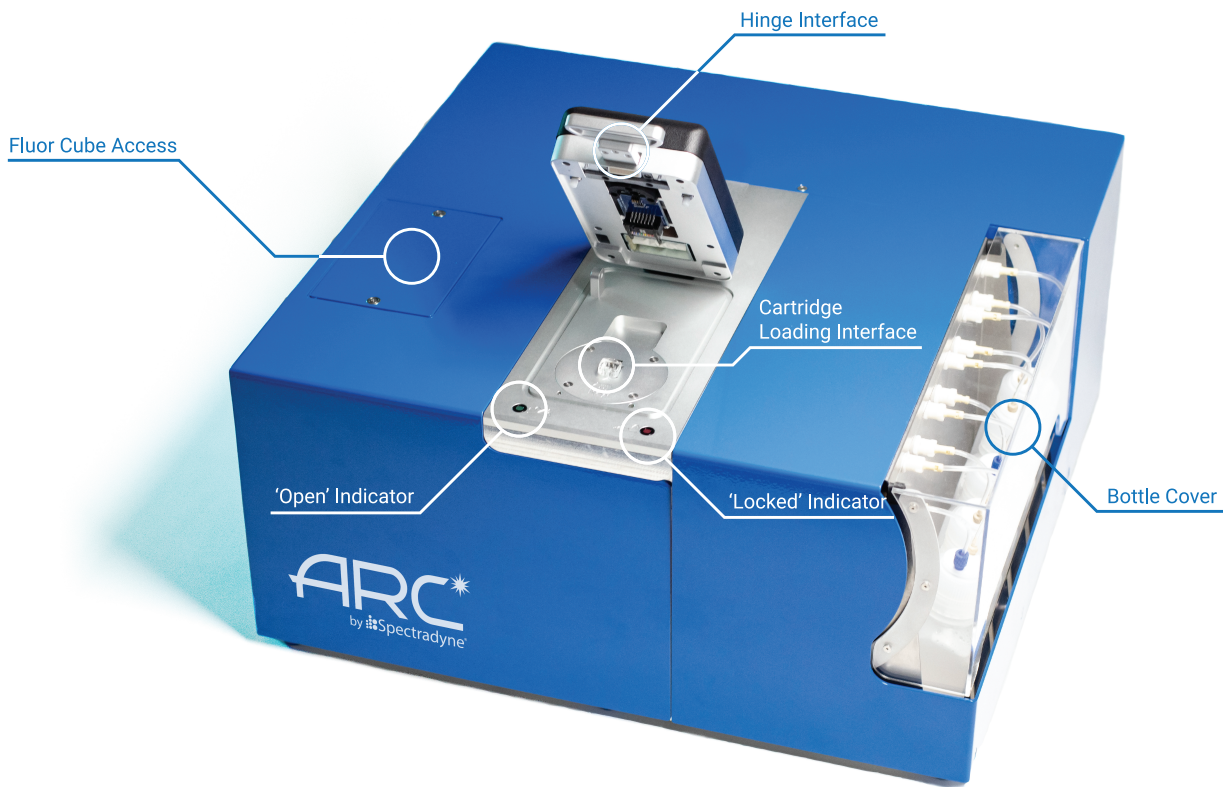




# ARC by Spectradyné

Instrument Manual  
**Quick Start  
Guide**

## Instrument Overview



## Power Supply Unit Overview



## Cartridge Interface and Loading Overview

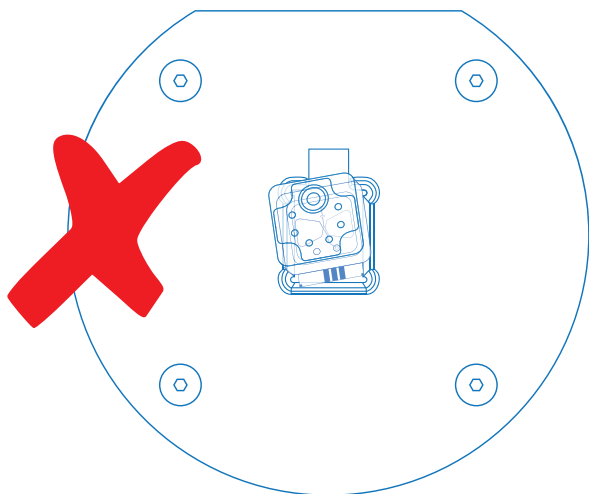




## Proper Cartridge Insertion

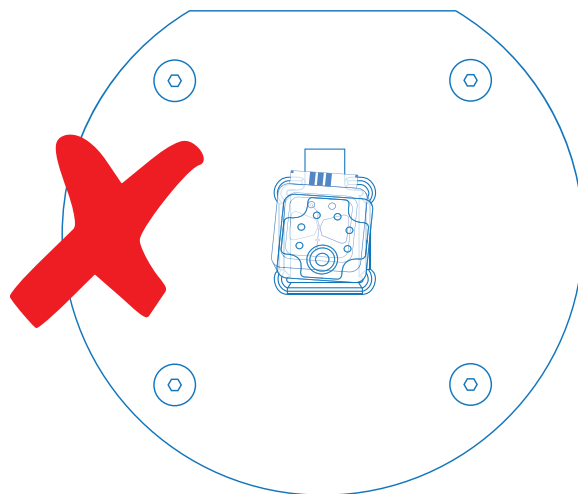
- To avoid potential leaks or damage to the instrument, be sure to load the cartridge properly so that it rests flat in the cartridge holder.
- The ARC™ uses a precisely tuned laser to excite the fluorophores in your sample, so be sure to keep the glass on the cartridge and instrument free of fingerprints or other debris.

**Be sure the cartridge is oriented properly**



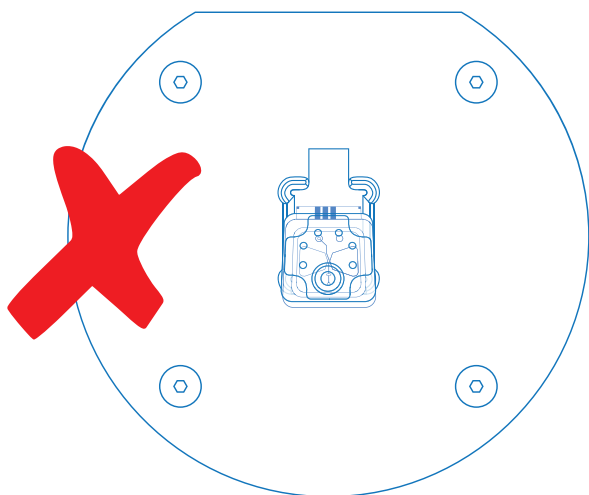
Front of instrument

**Be sure that the cartridge is not crooked**



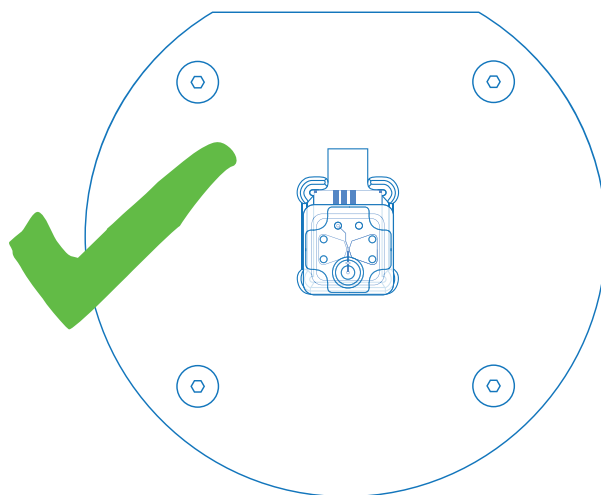
Front of instrument

**Be sure the cartridge lying flat against the glass**



Front of instrument

**Properly loaded cartridge**



Front of instrument



# ARC Quick Start Operations Guide

## Table of Contents

- 1 Instrument and Software Start-up
- 2 Prime the instrument
- 3 Load the sample cartridge
- 4 Align and focus optics
- 5 Prime the cartridge and acquire data
- 6 End the measurement run
- 7 Shutdown the instrument

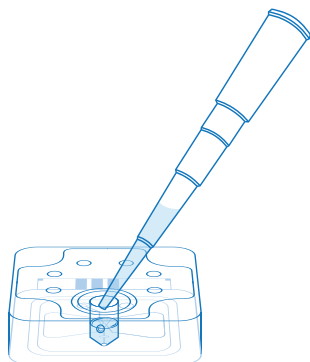


# 1

## Instrument and Software Start-up:

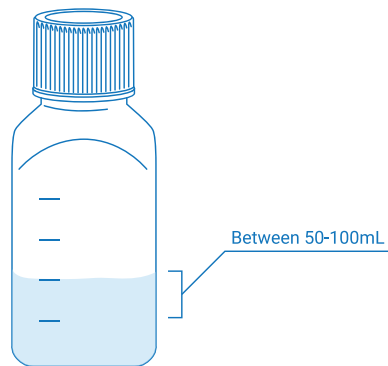
- Make sure the Power Supply Unit is connected to a wall outlet, and that the ARC is connected to Power Supply Unit's Air Supply Output and Umbilical Cable
- Connect the ARC to the Instrument PC with a USB cable
- Fill the running buffer bottles with between 50 to 100mL of prepared running buffer (1x PBS and 1% Tween 20, filtered to 0.2 $\mu$ m and freshly prepared within the last two weeks)

## Buffer Overview



### Sample Buffer

**We recommend** 1x PBS and at least 0.1% Tween 20, filtered to 0.02 $\mu$ m and freshly prepared within the last two weeks. Other surfactants may be used if needed, including at least 0.01% Poloxamer or at least 0.5% BSA.



### Running Buffer

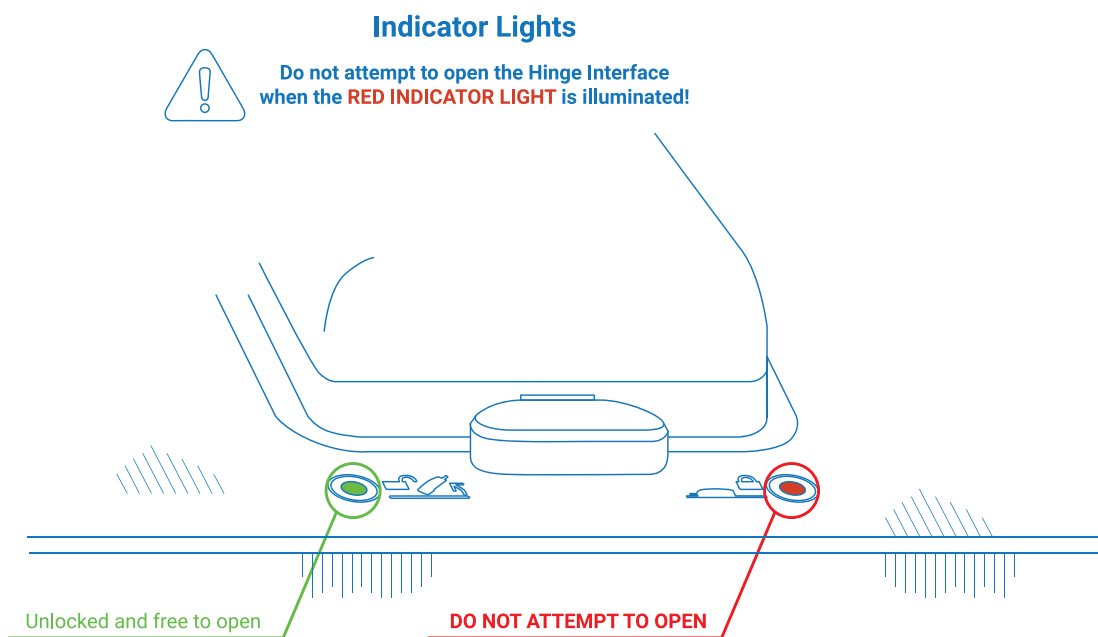
**Always** use 1x PBS and 1% Tween 20, filtered to 0.2 $\mu$ m and freshly prepared within the last two weeks.



- Power on instrument with the switch on the back of the Power Supply Unit
  - White indicator on the top of the instrument light should illuminate
- Open "ARC" acquisition software on the Instrument PC

## 2 Prime the instrument:

- Open the hinge interface to access the cartridge loading area
- Place cleaning cartridge into the cartridge holder - making sure that it is oriented and seated properly before closing
- Close the lid carefully
- Click 'Instrument Prime' in the software to start Instrument Prime and wait for the process to reach completion. Do not attempt to open the Hinge Interface when the red 'Closed' indicator light is illuminated

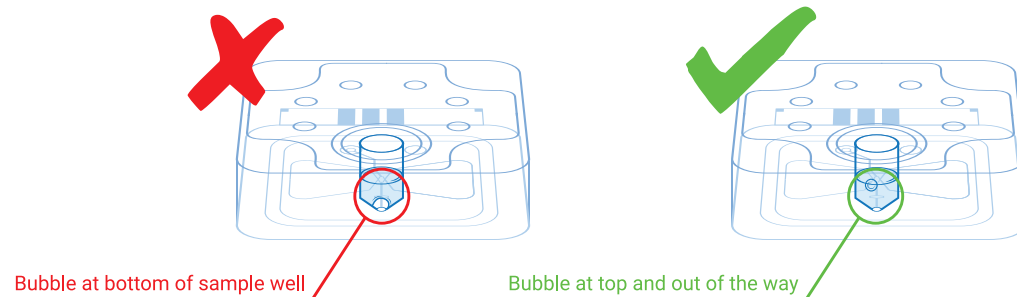


### 3 Load the sample cartridge:

- Prepare the sample according to specifications and cartridge's detection range
- Load the analyte into the cartridge, move any bubbles out of the way by tapping the cartridge lightly on a hard surface

#### Proper sample loading

Be sure that there are no bubbles at the bottom of the sample well on the cartridge



- Be careful not to get fingerprints or smudges on the glass on the cartridge or instrument
- Open the lid, remove the cleaning cartridge (or previous measurement cartridge) from the Instrument Prime and store it in a safe place. You do not need to run the Cleaning Cartridge in between sample cartridges
- Place sample cartridge into the cartridge holder being sure that it is seated and oriented properly
- Close the lid carefully

### 4 Align and focus optics:

- Fill out the fields under the Run Details frame
- Enter the Cartridge Mold ID and Box Number
- Click on "Autofocus & Align" button to focus NC onto the laser spot
- Wait for the process to complete successfully
  - Check the Cartridge View camera Last Capture frame
  - Follow software prompts if manual focusing or alignment is required

### 5 Prime the cartridge and acquire data:

- Click the Prime Cartridge button to start the priming routine
- The red 'closed' indicator light will turn on. Do not attempt to open the interface when the red light is on
- When the routine is complete, the first 10s of data acquisition will begin automatically with the laser turned OFF
- To continue acquiring MRPS data only, click on the "Continuous" button with laser remaining OFF
- To acquire fluorescence measurement, turn ON the laser and click on the "Continuous" button to resume the data acquisition
- A variety of live data view options are available to analyze your data in real-time





## 6 End the measurement run:

- After sufficient data has been collected, click the “End Run” button
- Wait for the process to complete and for the green open indicator light to illuminate on the top panel
- If necessary, prepare the next analysis cartridge and follow above steps



## 7 Shutdown the instrument:

- Open the lid, remove the used sample cartridge
- Load a cleaning cartridge
- Click the “Instrument Shutdown” button in the software and follow software prompts, using fresh DI water when prompted
- Remove the cleaning cartridge and store in a safe place
- Close the ARC software and power off the instrument
- Disconnect buffer/DI water bottles and store the buffer at 4°C for later use