

## Which Cell Sorter Should You Use

There are a handful of essential details that will help you determine which sorter is most appropriate for your application. First of all, we now have one Aria cell sorter located in HCI and the other is located in Wintrobe. All of our instruments are available to anybody, but geographically speaking one may be a better fit. Next, look over the instrument configuration comparison and make sure you choose the instrument with the correct excitation lasers and emission filters (See Below). We have simplified this in that both Arias have virtually the same filters except only the HCI sorter has the UV laser!! Beyond that there are a couple other features to the instruments that would limit your options

If any of these 3 criteria are applicable to your experiment you must use one of the BD Aria's.

1. The BD Arias are the only instruments that can sort into 96 or 384 well plates!!!
2. The BD Arias are the only instruments that can sort into 4 populations at once!!!
3. The BD Arias are the only instruments that have 70um, 85um, 100um or 130um nozzles!!!

### Who could/should use the Avalon?

The Avalon comes with a standard 100um nozzle and was originally purchased with the idea that we would move a lot of the GFP and/or RFP type samples off the Arias to free them up for more multicolor work. But this sorter can be used for anything. Its maximum event rate is about 25million cells per hour. But keep in mind that you can only sort 2 populations at once and only into 5ml tubes. So, if you need GFP single pos, RFP single pos, and double positives all from the same tube you should probably use one of the Arias. The only other tiny drawback is that you can fit about 900,000 cells per collection tube. So, if you need 10 million cells back you may want to consider sorting one the Arias which can sort into 15ml tubes and will give you less tubes to spin down in the end. But overall the Avalon is a nice little instrument and will also save you some money since it's cheaper.

And finally, a bit more info on BD Aria Nozzle sizes.

**70um**- 60psi- Acquisition rates up to 25,000 events/ second (90million/hr). Generally reserved for samples requiring processing over 100million cells.

**85um**- 45psi- Acquisition rates up to 12,000 events/ second (43million/hr). This is our standard nozzle. It's a little slower than the 70 but also potentially a little more gentle. This nozzle should work for a very wide range of cells.

**100um**- 30psi- Acquisition rates up to 8,000 events/ second (23million/hr). This nozzle is an option for very fragile cells that have known viability issues post sort.

**130um**- 12psi- We generally only use this for single cell sorting into plates or for VERY fragile cells.

Option #1					Option #2				
<b>HCI Aria (5 Laser) 17 color</b>					<b>Wintrobe Aria (4 laser) 12 color</b>				
Laser	Optical Filters				488nm				
488nm					525/50	FITC	GFP	Alexa 488	
	525/50	FITC	GFP	Alexa 488	710/50	PerCP	PerCP Cy5.5		
	710/50	PerCP	PerCP Cy5.5						
561nm	585/15	PE			561nm	585/15	PE		
	610/20	mCherry				610/20	mCherry		
	660/20	PE-Cy5							
	710/50	PE-Cy5.5				710/50	PE-Cy5.5		
	780/60	PE-CY7				780/60	PE-CY7		
640nm	670/30	APC	Alexa 647		640nm	670/30	APC	Alexa 647	
	710/30	Alexa700				710/30	Alexa700		
	780/60	APC H7				780/60	APC H7		
408nm	450/50	BV421	CFP	DAPI	408nm	450/50	BV421	CFP	DAPI
	525/50	BV510	AmCyan	Aqua live/dead		525/50	BV510	AmCyan	Aqua live/dead
	610/20	BV605				610/20	BV605		
	670/30	BV650				670/30	BV650		
	780/40	BV786				780/40	BV786		
UV	450/50	SP Blue	Alexa 350	DAPI					
	670LP	SP Red							
<b>Comments:</b> This sorter can do it all! Available for self Run Options with appropriate training <b>Key Features:</b> Sorting into 96/384 well plates 70um, 85um, 100um, 130um Tip Sizes Sort up to 4 populations at once					<b>Comments:</b> Available for self Run Options with appropriate training <b>Key Features:</b> Sorting into 96/384 well plates 70um, 85um, 100um, 130um Tip Sizes Sort up to 4 populations at once				
<b>Option #3</b>									
<b>Avalon Cell Sorter 4 color Filter Set 1</b>					<b>Avalon Cell Sorter 4 color Filter Set 2</b>				
488nm	525/50	GFP	FITC		488nm	525/50	GFP	FITC	
561nm	585/15	PE			561nm	585/15	PE		
	610/20	RFP				660/70	PerCp Cy5.5	APC***	
	660LP	Percp				780/60	PECY7		
<b>Comments:</b> Great for Cell lines expressing GFP and/or RFP proteins <b>Key Features:</b> NO sorting into 96 well plates Only has 100um tip Can only sort 2 populations at once					***APC is not excited very well, only use for bright markers				