

BD Influx

The BD Influx, jet-in-air, cell sorter is a highly adaptable system with greater flexibility in comparison to our BD FACS Aria IIu. The nozzle assembly is designed so that higher frequencies can be achieved with lower pressures allowing for efficient processing of delicate samples (neurons, transfected ES cells) while operating at good speeds. The nozzle design also allows for very high throughput processing of large volume bulk samples from sources like yeast, bone marrow and spleen with excellent purity and viability.

The instrument is equipped with four lasers at 405 nm (violet), 488 nm (blue), 561 nm (yellow-green) and 640 nm (red). It has 14 fluorescence detectors and can detect colours like Alexa Fluor 555, mCherry, mPlum, DsRed-Express, Tag- RFP and Rhodamine Red-X in addition to all the standard fluorescent probes used in most flow cytometry applications.

For operator safety and sample sterility, the instrument is housed inside a class IIa, A2, biosafety cabinet for sorting of BSL-2 samples such as lentiviral infected cell lines, bacteria and infected/non-infected human samples. The sample collection holders are quite modular and can accommodate 2 x 50 mL tubes, 1-50 mL tube + 2- 5mL tubes all the way down to Eppendorf tubes and microtiter plates for bulk and clonal sorts.

Also, please refer to our page on Sample Preparation for Sorting and concentrate your samples according to the guidelines below.

Instrument Specifications								
Sort Set-ups								
Nozzle (µM)	70	85			100		140	200
Pressure (PSI)	65	33	24	26	17	7	5.5	3
Cell Type	Splenocytes Thymocytes PBMC Whole blood Bacteria Yeast Bone marrow	Embryonic Stem Cells Transduced/Transfected spleen, thymus, bone marrow Delicate cells normally sorted at high pressure	B/T cell lines	Embryonic stem cells Trophoblast stem cells Cultured primary cells	Adherent cell lines Newly transfected cells	Large delicate primary cells Endothelial cells Irregularly shaped cells		
Cell Concentration**	40 million/mL	10 – 15 million/mL	8 million/mL		3-5 million/mL (Bulk)	1 million/mL (plates)	1 million/mL	
Threshold Rate	~20,000 cells/sec	~ 8,000 events/sec		~6,000 events/sec	~3,000 events/sec	~500 – 1000 Events/sec		
Sort Speed	High	Medium			Slow		Very slow	

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Sample Injection and Collection Set-Up			
Set-Up	Tubes	Sorting Pools	Operating Temperature
Injection	12 x 75 mm (5mL) BD Falcon Polypropylene tubes (PN: 352063)		Room Temperature 4 degrees 24 degrees 37 degrees
Collection	12 x 75 mm (5mL)	6 – way sorting (86 uM/ med press only)	Collection device can be attached to variable temperature controlled water bath.
	50 mL conical + 2 x 5 mL round bottom	3- Way sorting	
	Eppendorf tubes 12 x 75 mm (5mL)	4 – way sorting	
	15 mL conical 14 mL round bottom	2 – way sorting	
	Multi-well plates (96, 48, 24, 6) Glass slides Chamber slides	1-way sorting	

Cell Concentration – values given are a maximum concentration – concentrations higher than this will require dilution and increased sorting time. **Please make sure to count your cells and adjust the concentrations according to sorting conditions.

*** Injection speed is dependent on actual cell concentration. At 30 $\mu\text{L}/\text{min}$ the instrument will finish 1mL of sample in 35 minutes. If samples are too concentrated, the injection speed may be decreased or the sample may be diluted to achieve good sorting efficiency.

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Configuration		
Laser	Detection Filter	Colours
Blue (488 nm)	530/40	FITC, BB5815, VioBright FITC, Alexa488, GFP, YFP, Venus, Cy2, JC-1, Vybrant Green, Live-Dead Fixable Green
	695/40	PerCP*, PerCP-Cy5.5™, PE-Cy5™ (PC5)** , PE-Cy5.5™, PerCP-eFluor® 710, PE-Alexa Fluor™ 700, PE-Alexa Fluor™ 680, PE-Alexa Fluor™ 647, 7-AAD , Propidium Iodide (PI) , 7-AAD, SYTOX® AADvanced™ Dead Cell Stain
Red (640 nm)	670/30	Alexa Fluor® 633, Alexa Fluor® 635, Alexa Fluor® 647, Alexa Fluor® 647-PE, Alexa Fluor® 660, APC, APC-Cy5™, Atto 647, Cy5™, TO-PRO®-3, DRAQ5™ (DNA dye),, DRAQ7™ (DNA dye), SYTOX® Red Dead Cell Stain
	720/40	APC-Cy5™, APC-Cy5.5™, Alexa Fluor® 680, Alexa Fluor® 680-APC, Alexa Fluor® 680-PE, Alexa Fluor® 700, Cy5.5™, APC-Alexa Fluor® 680, APC-Alexa Fluor® 700, RedFluor™ 710, DRAQ5™ (DNA dye), DRAQ7™ (DNA dye), Zombie NIR™ Fixable (viability)
	750 LP	Alexa Fluor® 750, APC-Cy7™, Cy7™, Qdot® 800, Atto 700, DyLight® 750, APC-Alexa Fluor® 750, APC-eFluor® 780, APC-H7, HiLyte Fluor™ 750, APC-C750, DyLight® 755, redFluor™ 710, DRAQ5™ (DNA dye), Zombie NIR™ Fixable (viability), LIVE/DEAD®
Violet (405 nm)	460/50	Alexa Fluor® 405, Cascade Blue®, Pacific Blue™, Atto 390, Atto 425, DyLight® 405, eFluor® 450, Brilliant Violet 421™ (BV421™), Phalloidin, CF405M, Brilliant Violet 510™ (BV510™), Pacific Green™, violetFluor™ 450, LIVE/DEAD® Fixable Violet, DAPI, SYTOX® Blue Dead Cell Stain, Zombie Violet™ Fixable (Viability), Zombie Violet™ Fixable (Viability), Cyan Fluorescent Protein (CFP), Tag-BFP, Cerrulean
	520/35	Alexa Fluor® 430, EviTag® quantum dots - Adirondack Green (520 nm), EviTag® quantum dots - Catskill Green (540 nm), Qdot®525, Orange Cytognos 515™ (OC-515), Krome Orange™, Brilliant Violet 510™ (BV510™), , 7C, LIVE/DEAD® Fixable Aqua, DAPI, SYTOX® Blue Dead Cell Stain, Zombie Aqua™ Fixable (viability), Zombie Yellow™ Fixable, LIVE/DEAD® Fixable Yellow , Cyan Fluorescent Protein (CFP)
	610/20	Alexa Fluor® 430, EviTag® quantum dots - Fort Orange (600 nm), Qdot® 605, eFluor® 605NC, Cascade Yellow®, Brilliant Violet 605™ (BV605™), Zombie Yellow™ Fixable, LIVE/DEAD® Fixable Yellow
	650 LP	Qdot® 655, eFluor® 650NC, Brilliant Violet 650™ (BV650™), Qdot® 705, Brilliant Violet 711™ (BV711™), Qdot® 800, Brilliant Violet 785™ (BV785™)
Yellow/Green (561 nm)	585/29	Alexa Fluor® 546, Cy3™, PE, Rhodamine, Alexa 555, Alexa Fluor® 568, Rhodamine Red-X, HiLyte Fluor™ 555, RD1 (Phycoerythrin), eFluor® 585NC, DsRed, TdTomato, RFP, mCherry, mTomato, DsRed
	610/20	PE-Texas Red (ECD), Alexa Fluor® 594, Rhodamine Red-X, Texas Red, PE-Alexa Fluor™ 610, Rhodamine Red™, PE-Dylight® 590, eFluor® 615, PE-Dazzle™ 594, mCherry, PE-Dazzle, PE-CF594
	670/30	PE-Cy5™ (PC5), eFluor® 650NC, PE-Alexa Fluor™ 610, PE-Dylight® 647, PE-Alexa Fluor™ 647, SureLight® P1
	710/50	PE-Cy5.5™, PE-Alexa Fluor™ 700, PE-Alexa Fluor™ 680, PE-Alexa Fluor™ 647, PE-Cy6™ (PC6)
	750 LP	PE-Cy7™ (PC7), PE-Alexa Fluor™ 750