

Free-form PMT layout provides flexibility in experiment setup on the MA900 cell sorter

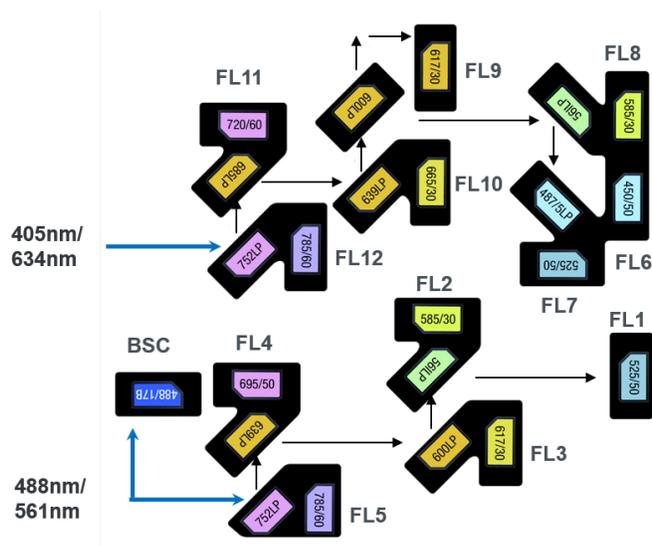


Figure 1. Free-form PMT layout of the MA900 cell sorter.

Multi-user laboratories sort a variety of cells, which demands flexibility in a sorter's optical design. Previously, the only approach to meet this demand was to purchase a cell sorter preconfigured with multiple parameters across many lasers. Though many fluorescence channels in such a flow cytometer might not be used simultaneously, labs could change their panel design without having to reconfigure or upgrade their instrument for each application.

The MA900 is the first cell sorter to offer an affordable option to labs that need flexible detection capability. This system is configured with 4 lasers (488 nm, 405 nm, 561 nm, and 638 nm), allowing detection of 12 fluorescence and 2 scatter parameters. A unique optics design features a free-form PMT array for detection of fluorescence signals from, based on filter selection. The PMT arrays are configured into two groups, with a five-PMT array combined with the first beam spot and a seven-PMT array combined with the second beam spot (Figure 1).

Laser	Filters	Panel A	Laser	Panel B
488 nm	FL1 525/50	FITC	488 nm	FITC
	FL2 585/30	PE		PE
	FL3 617/30	PE Dazzle		PE Dazzle
	FL4 685/40	PerCP-Cy5.5		PerCP-Cy5.5
	FL5 785/60	PECy-7		PECy-7
405 nm	FL6 450/50	BV421	405 nm	BV421
	FL7 525/50	BV510		BV510
	FL8 585/30	BV570		BV570
	FL9 617/30	BV605		BV605
638 nm	FL10 665/30	APC	638 nm	BV650
	FL11 720/60	Alexa700		BV711
	FL12 785/60	APC-Fire750		BV570

Figure 2. A free-form PMT layout enables analysis of different panels using the same optics.

This free-form PMT layout provides flexible panel setup. For example, a 12-color panel consisting of fluorochromes excited by the 405-nm laser (BV421, BV510, BV570, and BV605) and 638-nm laser (APC, Alexa Fluor® 700 and APC/Fire™ 750) can be analyzed using the MA900F configuration (Figure 2). If an alternate panel requires replacing APC, Alexa Fluor® 700, and APC/Fire 750 fluorochromes with BV650, BV711, and BV750 fluorochromes, users can easily do so on the same MA900 configuration without reconfiguring the violet laser channels on the instrument (Figure 2).

The MA900 cell sorter's free-form PMT layout allows labs to set up a variety of panels without time-consuming changes in the optics.

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