BD FACSymphony™ A1 Cell Analyzer

Premium performance in a benchtop footprint

BD

BD FACSymphony™ A1 Cell Analyzer features:

- **Premium high-end BD FACSymphony™ instrument technology** scaled to fit on your benchtop
- Flexibility to meet a broad spectrum of research needs from **small particle research** to **16-color immunophenotyping**
- Industry standard **BD FACSDiva™ Software** for streamlined workflow from system setup to data acquisition and analysis

BD® Small Particle Detector

Optional detector for small particle side scatter (SP SSC) for resolving particles as small as 90 nm

Familiar Workflow

Industry standard BD FACSDiva™ and FlowJo™ Software enable easy system QC, data acquisition and analysis

Trusted Partner
Supported by over 45 years of flow cytometry expertise

BD FACSymphony™ Instrument Technology

Reduce background noise and increase sensitivity with low-noise electronics, high-powered lasers and tight beam spot, shared across the premium BD FACSymphony™ platforms. The BD FACSymphony™ A1 Cell Analyzer is compatible with BD Horizon™ Dyes and supports up to 16 colors or 19 parameters simultaneously.

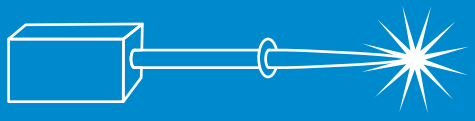
Premium BD FACSymphony™ instrument technology

delivered in a compact size

Up to

16 fluorochromes and 19 parameters

to conduct deep and broad phenotyping



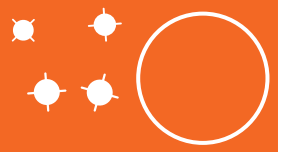
Enhance detection sensitivity

with four high-powered 100 mW lasers: Violet (405 nm), Blue (488 nm), Yellow-Green (561 nm) and Red (637 nm)

BD® Small Particle Detector Option for

analysis of small particles

such as extracellular vesicles including exosomes



Identify and analyze rare cell types and events

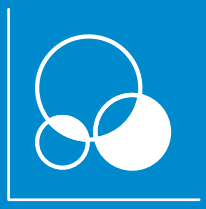
with our redesigned optics including small beam spots combined with low-noise electronics

Gain rich scientific insights

by leveraging BD Horizon Brilliant™ Reagents

Enable easy system QC

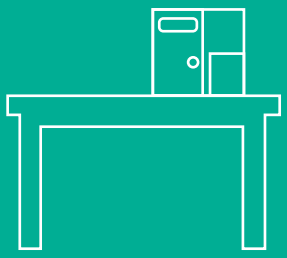
using industry-standard BD FACSDiva™ Software and BD® CS&T Beads



Utilizes FlowJo™ Software, the

leading bioinformatics platform*

for flow cytometry analysis



Ideal for labs with limited space

Small footprint (58 x 61 x 59 cm)

Automated sample processing in high-throughput mode

using the BD® High-Throughput Sampler Option

*In 2021, FlowJo™ Software was cited in leading immunology peer-reviewed journals 80% of the time a flow cytometry analysis software package was cited.

Able to detect up to 16 colors and resolve rare cell subsets

Table 1. Instrument configuration and reagents in the cytotoxic immune cells panel

Laser	Filter	Fluorochrome	Specificity
Violet 405 nm	450/50	BV421	Perforin
	525/50	BV480	CD159a (NKG2A)
	610/20	BV605	CD19
			CD14
			CD123
			CD141
		FVS575V	-
	670/30	BV650	CD3
	710/50	BV711	CD314 (NKG2D)
	780/60	BV786	HLA-DR
Blue 488 nm	530/30	FITC	CD57
	710/50	PerCP-Cy5.5	CD8
Yellow-Green 561 nm	586/15	PE	CD158 (KIRs)
	610/20	PE-CF594	CD56
	670/30	PE-Cy5	CD95 (Fas)
	710/50	PE-Cy5.5	CD127 (IL7R-α)
	780/60	PE-Cy7	CD38
Red 637 nm	670/30	AF647	Granzyme K
	710/50	R718	Granzyme B
	780/60	APC-H7	CD16 (FcgRIII)

BV, BD Horizon Brilliant™ Violet; FVS, BD Horizon™ Fixable Viability Stain; BD Horizon™ Red, Alexa Fluor™

Figure 1

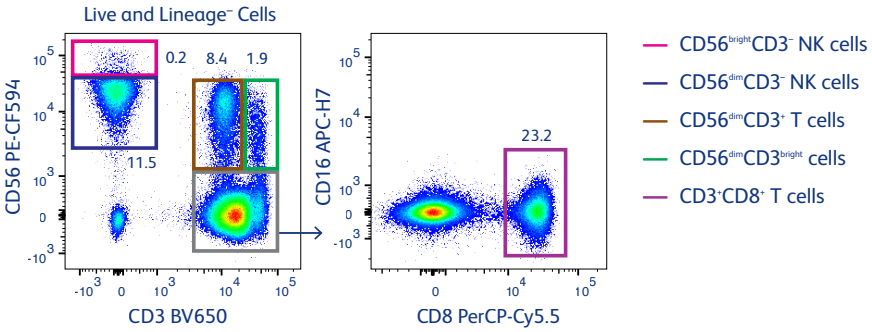


Figure 1. Identification of cytotoxic immune cell populations in healthy human peripheral blood

Within live and lineage negative cells, analysis of CD56 versus CD3 revealed various cell populations that were color coded as cytokine-producing NK cells (pink), cytotoxic NK cells (blue), CD56⁺ T cells containing NKT cells (brown), CD56⁺ T cells containing γδ T cells (green) and cytotoxic CD8⁺ T cells (purple).

To learn more, download the panel sheet *Characterization of Cytotoxic Immune Cells in Human Peripheral Whole Blood* from **bdbiosciences.com**

Figure 2A

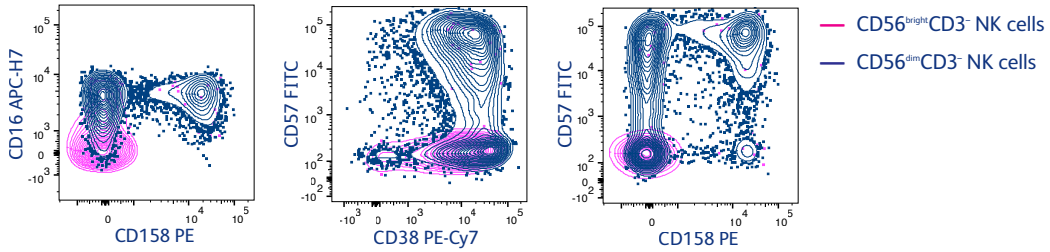


Figure 2B

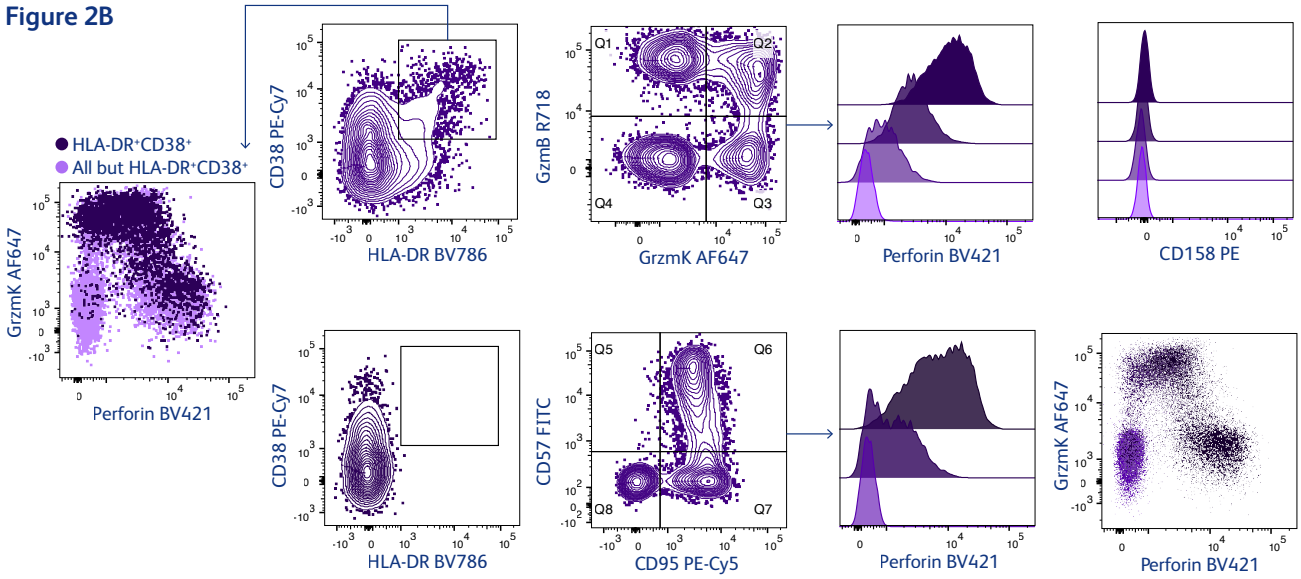
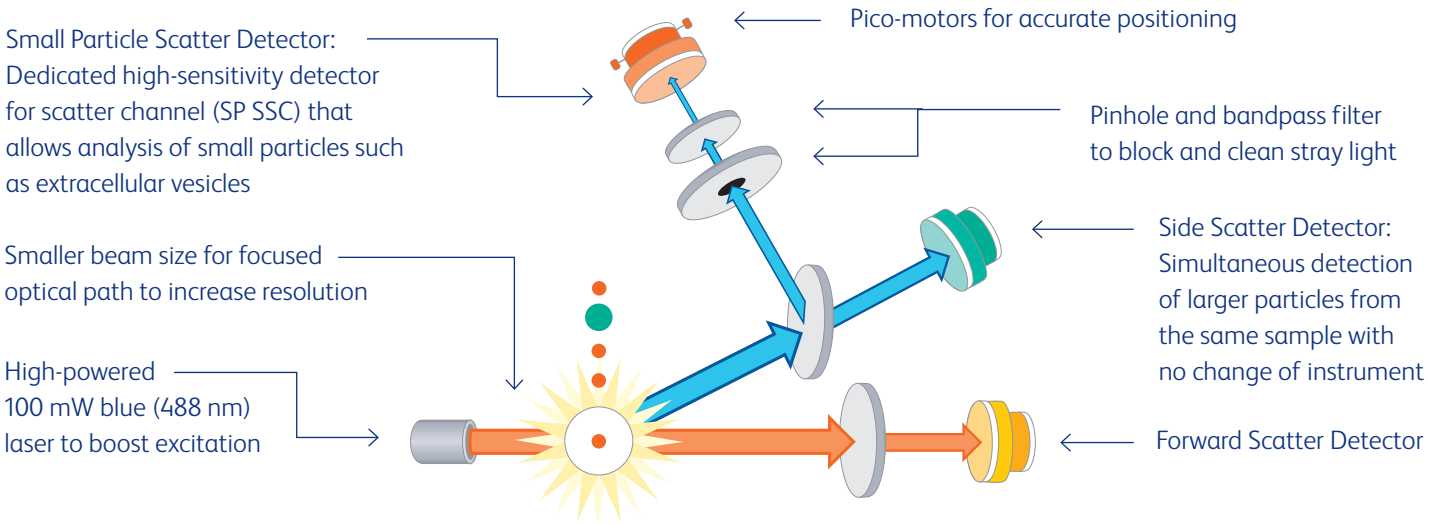


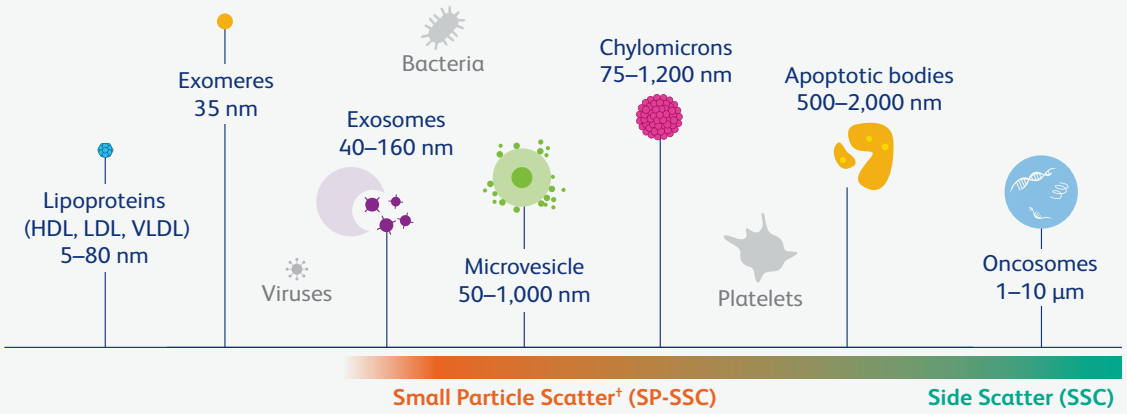
Figure 2. Phenotyping of circulating cytotoxic cells using a 16-color panel

The plots represent the analysis of cytolytic proteins in combination with various cell differentiation markers, enabling a deeper characterization of the cell populations gated in Figure 1. **A.** Overlay of NK cell subsets. **B.** Identification of activated CD8 T cells based on the expression of CD38 and HLA-DR. The HLA-DR FMO staining helped to determine the gating boundaries for proper detection of the double positive cells.

Independent detection of large (SSC) and small (SP SSC) particles

The BD FACSymphony™ A1 Cell Analyzer with optional BD® Small Particle Detector is able to resolve scatter of small particles such as extracellular vesicles, viral particle, exosomes and more.





Seamless small particle detection workflow

Instrument Setup

Reproducible results

- Small particle calibration beads
- Sample prep and setup protocols

Sample Detection

Detect small particles as small as 90 nm

BD FACSymphony™ A1 Cell Analyzer with BD® Small Particle Detector

Data Analysis

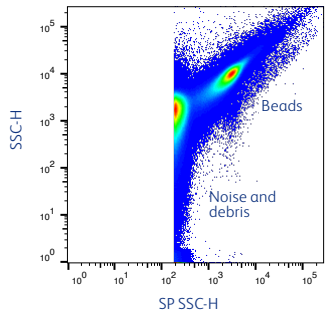
Industry-standard* software

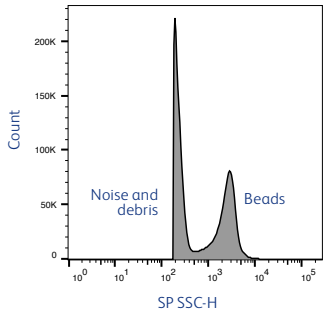
FlowJo™ Software

‡The BD® Small Particle Detector can resolve particles as small as 90 nm.
*In 2021, FlowJo™ Software was cited in leading immunology peer-reviewed journals 80% of the time a flow cytometry analysis software package was cited.

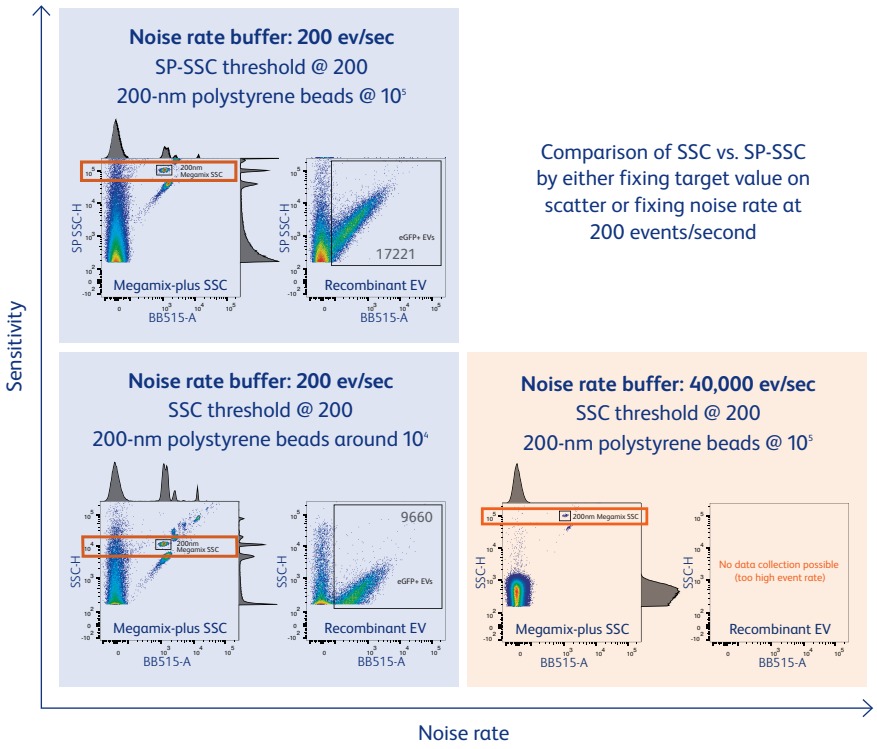
Detection of extracellular vesicles using BD FACSymphony™ A1 Cell Analyzer

Resolution of 90-nm polystyrene particles with the BD® Small Particle Detector option



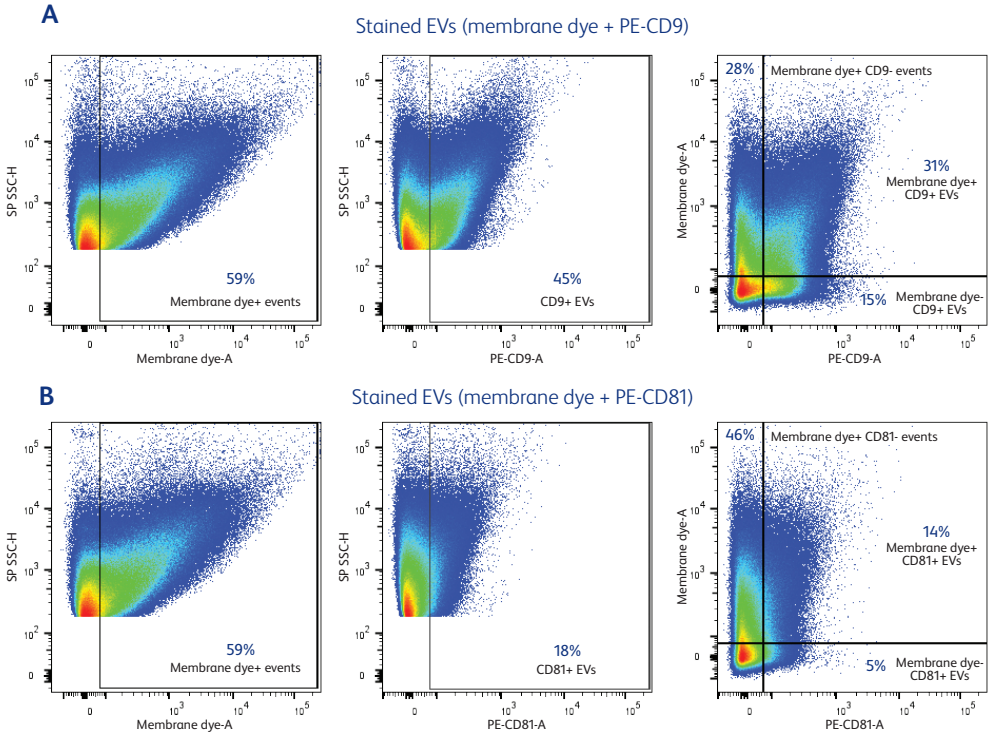


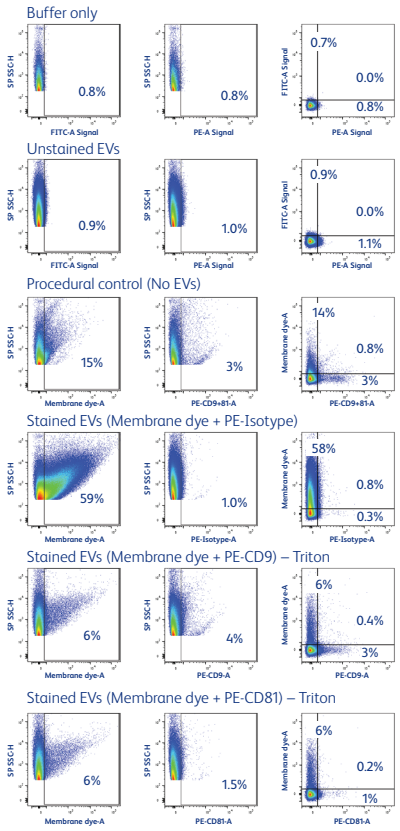
Side scatter sensitivity of BD® Small Particle Detector



Comparison of SSC vs. SP-SSC by either fixing target value on scatter or fixing noise rate at 200 events/second

Characterization of extracellular vesicles from human MCF7 cell line*





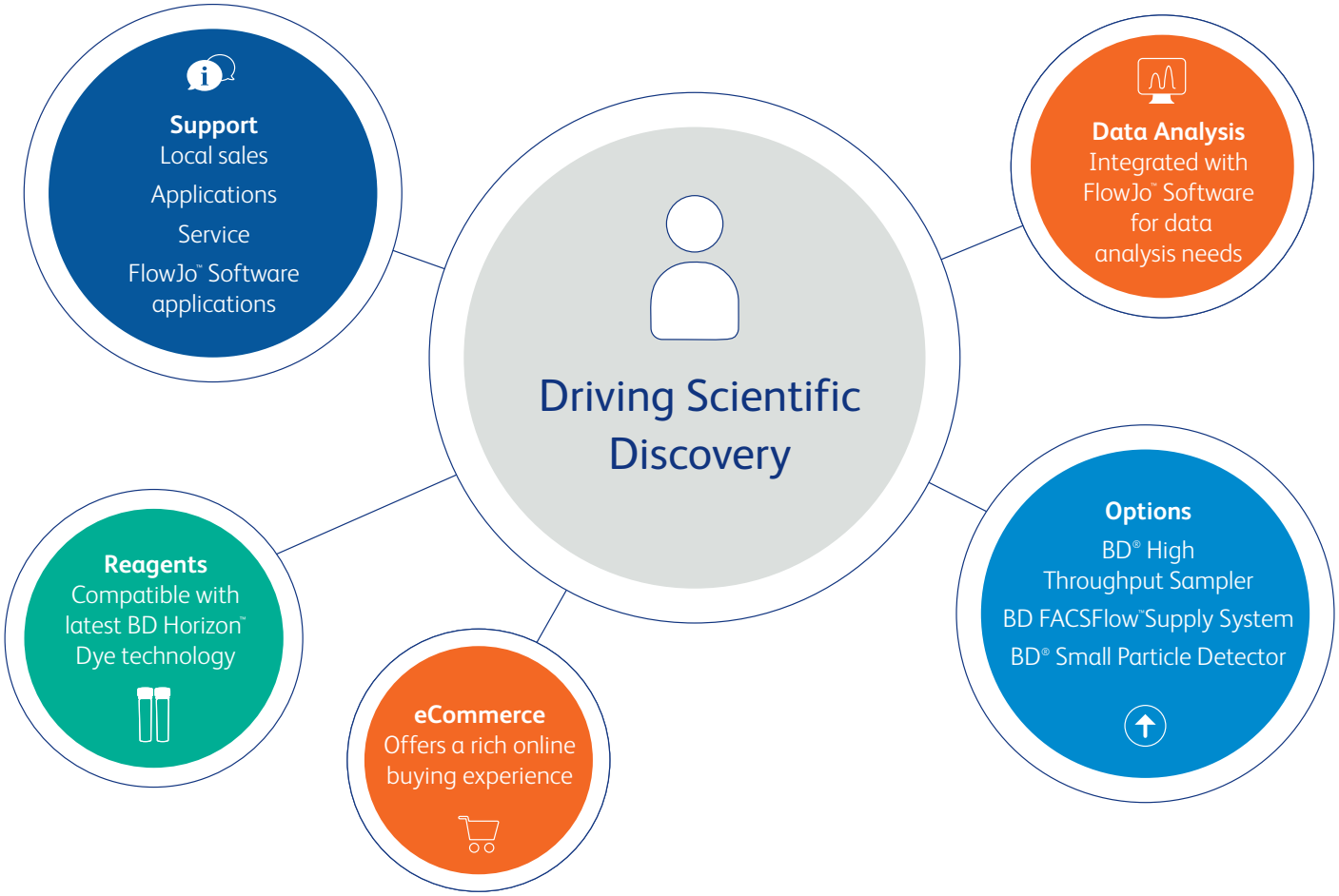
* This work was performed in collaboration with Wauben Lab (Utrecht University, The Netherlands) and was supported by the TRAIN-EV Marie Skłodowska-Curie Action-Innovative Training Network, http://train-ev.eu grant agreement No 722148

BD FACSymphony™ Systems

	BD FACSymphony™ A1	BD FACSymphony™ A3	BD FACSymphony™ A5	BD FACSymphony™ A5 SE
Number of lasers	4	5	5–9	5
Fluorescent detectors	16	Up to 28	Up to 48	Up to 48
Instrument type	Analyzer	Analyzer	Analyzer	Analyzer
Software	BD FACSDiva™	BD FACSDiva™	BD FACSDiva™	BD FACSDiva™
Footprint	58 x 61 cm	83.8 x 76.2 cm	101.6 x 78.7 cm	101.6 x 78.7 cm
Small particle detector	Yes	Custom	Custom	Custom

Backed and supported by BD

We're committed to partnering with you to provide the mission-critical tools and support you need to advance your research.



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