BD FACSDuet™
sample preparation system

The BD FACSDuet™ is an automated sample preparation system designed to prepare human biological specimens for acquisition on the BD FACSLyric™ flow cytometer.

When the BD FACSDuet is physically integrated with the BD FACSLyric via the BD FACSLyric Universal Loader, the system provides ready-to-acquire samples to the flow cytometer, delivering a complete walkaway sample-to-answer solution.

BD FACSLyric to BD FACSDuet bidirectional data integration is provided by BD FACSLink™ software ensuring patient data integrity and security.

The BD FACSDuet system provides pre-analytical standardisation with complete traceability of specimens, reagents and samples throughout the entire workflow and across platforms through extensive use of barcodes.

At the same time, the system delivers high flexibility:
- Supporting a wide variety of blood collection tubes, both in size (7 different sizes) and from multiple manufacturers (BD Vacutainer®, Sarstedt, Greiner and Streck) for a total of 22 different tube types.
- Accommodating 12 different specimen types including whole blood, bone marrow, cerebral spinal fluid (CSF), fine needle aspirates (FNA), BD Trucount™ controls, CD Chex™ controls, BD Multicheck™ controls.
- Allowing the use of multiple size reagent vials: up to 23 reagent vials per rack for a total of 46 reagent vials in 2 racks.
- Supporting the use of BD IVD assays as well as a variety of laboratory developed test (LDT) protocols that can be designed and stored in the BD FACSDuet software to guarantee standardization of processes across users and labs.

The system’s modular design enables increasing functionality to cater to the evolving needs of the labs, like making reagent cocktails.
BD FACDuet™ Sample Preparation System

Technical Specifications

**Instrument**

**Dimensions**
- Height: 83.8 cm (33.0 in.)
- Width: 106.2 cm (41.8 in.)
- Width (with touchscreen extended): 153.19 cm (60.3 in.)
- Depth: 74.4 cm (29.3 in.)

**Weight** (with rack loaded, monitor and ready to use): 174 kg (383.6 lb)

**Power requirements**
- 100–240 V / 6-2.5 A / 50–60 Hz

**Power consumption**
- mean 420W-peak consumption 600W

**Fuses**
- 2 A (150 V)

**Environment**

**Storage temperature**
- 5ºC to 45ºC

**Operating temperature**
- 15ºC (59°F) to 30ºC (86°F)

**Operating relative humidity**
- 20% to 80% (non-condensing)

**Operating barometric pressure**
- ≥0.8 atm (approximately 2000 meters)

**Heat dissipation**
- <500 BTU/hr

**Noise level**
- ≤57 dBA, under normal operating conditions

**Facility requirements**
- Please refer to the BD FACDuet Site Preparation Guide for details

**BD FACDuet table**
- Recommended when BD FACSLyric and BD FACDuet are physically integrated
- Height: 86.35 cm (33.99 in.)
- Length: 200.0 cm (78.74 in.)
- Depth: 97.0 cm (38.19 in.)

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**Preprogrammed settings**

**Dispense volume**
- **Sample**: 50 μL
- **Reagent**: 20 μL
- **Lyse**: 450 μL

**Preprogrammed incubation times**
- **Reagent**: 15 - 30 minutes (min-max)
- **Lyse**: 15 - 30 minutes (min-max)

**System performance**

**Specimen**
- dispense volume: 50 μL
- A&P for specimen
- Accuracy: ±3.0% by volume
- Precision: CV = 3.0%

**Reagent**
- dispense volume: 20 μL
- A&P for reagents (in single- and multi-dispense mode)
- Accuracy: ±20.0% by volume
- Precision: CV = 10.0%

**Lyse**
- dispense volume: 450 μL
- A&P for lyse (in single- and multi-dispense mode)
- Accuracy: ±5.0% by volume
- Precision: CV = 5.0%

**Carryover performance**
- Specimen to specimen: ≤0.2%
- Reagent to reagent: ≤0.01%

**Non-dispensed volume**
- **Specimen**: 250 μL (for 13 x 75 mm tubes)
- **Reagents**: 130 μL (in single- and multi-dispense mode)
- **Lyse**: 170 mL

**User-definable ranges**

**Dispense volumes**
- **Sample**: 5-500 μL (in increments of 1 μL)
- **Reagents**: 5-1000 μL (in increments of 1 μL)
- **BD Trucount™ controls**: 5-50 μL (in increments of 1 μL)
- **BD FACS™ lysis solution**: 0-450 μL (in increments of 25 μL)

**Incubation times**
- **Reagent**: 0-60 minutes (in 1 minute increments)
- **Lyse**: 0-60 minutes (in 1 minute increments)

**Number of reagents per tube**: 10
**Maximum volume per tube**: 3 mL

**Maintenance protocol**
- Instrument priming, rinsing, and cleaning procedures as well as probe alignment are pre-programmed

**System performance**

**Accuracy**
- Specimens:
  - i. 5-10 μL ±1μL
  - ii. >10-49 μL ±10.0%
  - iii. >50-400 μL ±5.0%
- Reagents:
  - iv. 5 μL ±20.0%
  - v. >5-19 μL ±20.0%
  - vi. >20-99 μL ±6.0%
  - vii. >99-500 μL ±5.0%
  - viii. 1000 μL (for lysing solution) ±5.0%

**Precision**
- Specimens:
  - i. 5-10 μL≤20.0%
  - ii. >10-49 μL≤10.0%
  - iii. >50-400 μL≤3.0%
- Reagents:
  - iv. 5 μL≤20.0%
  - v. >5-19 μL≤20.0%
  - vi. >20-99 μL≤10.0%
  - vii. >99-500 μL≤10.0%
  - viii. 1000 μL (for lysing solution)≤5.0%
Sample loading
Primary tube racks
Up to 4 primary tube racks with tube adaptors
Up to 10 tubes/rack for a total of 40 primary tubes at any given time from multiple providers

Primary specimen tube compatibility
BD Vacutainer®
13 x 75 mm - 2.0, 3.0 and 4.0 mL
13 x 100 mm - 6.0 and 7.0 mL
16 x 100 mm - 9.5 and 10.0 mL
Use BD Hemogard™ or Conventional Cap (standard rubber stoppers)

Greiner
13 x 75 mm - 2.0 and 3.0 mL*
13 x 100 mm - 6.0 and 7.0 mL*
16 x 100 mm - 9.0 and 10.0 mL
Use Premium* or Non-ridged Pull Cap

Sarstedt S-Monovette®
13 x 65 mm - 2.6 mL
11 x 66 mm - 2.7 mL
13 x 65 mm - 2.6 and 3.4 mL
15 x 75 mm - 4.0 mL
13 x 90 mm - 4.9 mL

Streck Cyto-Chex® BCT™
13 x 75 mm - 5.0 mL
2mL flat

Specimen tube adapter sizing chart
Compatible specimen tubes
D13 x L65  Sarstedt 2.6mL and 3.4mL
D11 x L66  Sarstedt 2.7mL
D13 x L75  BD Vacutainer 2.0mL, 3.0mL and 4.0mL, Streck 5mL and Greiner 2.0mL and 3.0mL
D15 x L75  Sarstedt 4.0mL
D13 x L90  Sarstedt 4.9mL
D13 x L100 BD Vacutainer and Greiner 6.0mL and 7.0mL

D16x L100  BD Vacutainer 9.5mL and 10mL and Greiner 9.0mL and 10.0mL

Carrier compatibility
BD FACSLyric™ 30 tube rack
BD FACSLyric™ 40 tube rack
Use with 12x75mm BD Trucount™ tubes and 5mL K-Resin or Polystyrene or Polypropylene tubes

Cocktailing functionality
Up to 45 unique reagents within each given cocktail.
Indefinite number of cocktail recipes archivable in the software
Up to a maximum of 4.5 mL of cocktail reagent in one 5mL Amber Vial
2 Reports generated for each cocktail preparation: worklist and preparation reports
Import and export of cocktail recipes

Fluidic
Dimensions 10L tanks
Height: 25.4 cm (10 in.)
Width: 24.1 cm (9.5 in.)
Depth: 29.2 cm (11.5 in.)

Tank capacities
Saline tank: 10 L
DI water tank: 10 L
Waste tank: 10 L
Lyse tank: 1 L

Barcode reader
The following barcodes are supported
ISBT 128
Code 128
Code 39
Codabar
interleave 2 of 5 standard barcode
DataMatrix (reagent scanning only)

Computer
Operating System: Microsoft Win 10
Processor: Intel® BayTrail J1900
64-Bit EMB English
Touch screen

Data management options
BD FACSLink hardware and software for LIS connectivity