



BD FACSLyric™ System

The BD FACSLyric™ System includes the BD FACSLyric™ cytometer, the optional BD FACS™ Universal Loader, and workstation that runs the software. All these components combine to create an integrated system with a compact footprint.

The system is available in 4, 6, 8, 10 or 12 colors and equipped with a blue, red and violet laser depending on the configuration. The BD FACSLyric™ flow cytometer is upgradeable up to 12 colors.

Sample acquisition can be manual or automated via the BD FACS™ Universal Loader. The Loader provides walkaway operation with samples loaded in either microtiter plates or 12 x 75-mm tube racks.

The software that controls the BD FACSLyric™ system is comprised of two applications:

- The BD FACSuite™ Clinical application supporting BD IVD Assays with assay templates:

BD Tritest™ CD3/CD4/CD45 kit

BD Tritest™ CD4/CD8/CD3 kit with BD Trucount™ Tubes

BD Multitest™ CD3/CD8/CD45/CD4 kit

BD Multitest™ CD3/CD16+CD56/CD45/CD19 kit

BD Multitest™ IMK kit

BD Multitest™ 6-Color TBNK kit

BD® Stem Cell Enumeration Kit with BD Trucount™ Tubes

BD OneFlow™ LST, B-CLPD, PCST, PCD and ALOT

BD Multitest™ and BD Tritest™ CD3/CD4/CD45 are also available with BD Trucount™ Tubes.



- The BD FACSuite™ application supporting BD IVD Single Color Reagents and user-defined panels. Functions within the application facilitate instrument-to-instrument and site-to-site standardization.



BD FACSLytic™ System

Technical Specifications

Optics

Available system configurations

4-color: 2-laser (blue, red) (3-1)
6-color: 2-laser (blue, red) (4-2)
8-color: 3-laser (blue, red, violet) (4-2-2)
10-color: 3-laser (blue, red, violet) (4-3-3)
12-color: 3-laser (blue, red, violet) (4-3-5)

Solid-state laser specifications

Blue laser: 488 nm, 20 mw
Red laser: 640 nm, 40 mw
Violet laser: 405 nm, 40 mw

Beam spot size (all lasers)

9 µm x 63 µm

Optical alignment

Auto alignment on demand

Flow-cell lens

1.2 NA

FSC detector

Photodiode

SSC and FL detectors

PMT

See filter guide for optical configurations.

Fluidics

Flow cell

Stainless steel with low coefficient of thermal expansion for predictable, stable performance

Cuvette internal cross-section

430 µm x 180 µm

Sample flow rates

Low: 12 µL/min
Medium: 60 µL/min
High: 120 µL/min
High sensitivity: 50 µL/min

Fluid capacity

Standard 5-L tanks
Optional 10-L tanks
Adapter available for 20-L BD FACSToGo™ cubitainer

Sheath core stream fluid velocity

Normal: 5.4 m/s

High sensitivity: 2.7 m/s

Sheath fluid consumption

Normal: 13.6 mL/min
High sensitivity: 6.6 mL/min

Supported tubes, plates and tube racks

- With BD FACSToGo™ Universal Loader
Tubes
30-tube rack (12 x 75-mm tubes)
40-tube rack (12 x 75-mm tubes)

Plates

96 Falcon® standard height, round, polystyrene
96 Falcon® standard height, flat, polystyrene
96 Falcon® standard height, round, polypropylene
96 Falcon® standard height, conical, polypropylene
384 Greiner standard height, flat, polystyrene
96 Falcon®, half deep, conical, polypropylene
96 Falcon®, deep, conical, polypropylene
96 Milipore, filter bottom, polypropylene

- With manual tube port

Falcon® 5 mL (12 x 75-mm) polystyrene and polypropylene
BD Trucount™ 5 mL (12 x 75 mm)
Falcon 15 mL
Falcon 50 mL
Microcentrifuge 2 mL

Sample dead volume

30 µL (12 x 75-mm tubes)

Cytometer schedule settings

Pre-programmed startup and idle shutdown

Software

- Integrated bi-directional LIS interface using BD FACSToGo™ Workflow Manager
- Support for 21 CFR Part 11 workflow with audit trail and e-signature
- Universal setup for fast and convenient instrument setup and standardization
- Single-tube QC with BD® CS&T beads
- QC module with Levey-Jennings plots
- Two applications

BD FACSToGo™ Application

- User-defined assays
- User-defined plots
- User-defined worksheets and reports
- User-defined tube/reference settings
- Expression editing

BD FACSToGo™ Clinical Application Pre-configured workflow and pre-set templates for the following BD IVD assays:

- BD Tritest™
- BD Multitest™ 4-Color
- BD Multitest 6-Color TBNK
- BD Trucount™ control
- BD OneFlow™ LST, B-CLPD, PSCT, PCD and ALOT
- BD® Stem Cell Enumeration
- Report in 26 languages

QC

Automated single-tube QC with BD® CS&T beads

Performance

Acquisition rate

Up to 35,000 events per second. No limit on number of events acquired in a single FCS file

Carryover

<0.10% with default SIT flush
<0.05% with 3 or more SIT flushes

Sensitivity

FITC: <85 MESF

PE: <20 MESF

Channel Qr* (x1,000)

| | |
|----------------------|-----|
| FITC | 20 |
| PE | 133 |
| PerCP-Cy™5.5 | 13 |
| PE-Cy™7 | 17 |
| APC | 10 |
| BD Horizon™ APC-R700 | 8 |
| APC-Cy™7 | 7 |
| BD Horizon™ V450 | 47 |
| BD Horizon™ V500 | 17 |
| BD Horizon™ BV605 | 133 |
| BD Horizon™ BV711 | 43 |
| BD Horizon™ BV786 | 16 |

Fluorescence precision

<3% CV for chicken erythrocyte nuclei (CEN)

Fluorescence linearity

2 ±0.05% for CEN

Data resolution

Uncompensated data has a range of 0–262,143

SSC and FSC resolution

Enables separation of 0.2-µm beads from noise

System throughput

≤50 minutes for a 40-tube rack with a standard BD Tritest™ assay stopping rule on samples with normal CD4 counts (approximately 1190 cells/µl).
≤40 minutes for a 96-well plate, using default mix settings, a two-second acquisition, and a SIT flush in between each well and no preview before acquiring or report review delay.

Parameters

Area (A), Width (W), Height (H) for all channels and Time (T). Total of 43 parameters available.

3 scales:

Linear (A, W, H),

Logarithmic (A, H)

Biexponential (A, W, H)

Compensation

Full inter-beam matrix, during or post acquisition

Threshold

Any single parameter or logical combination of multiple parameters

Data management

Workstation specifications (minimum required)

Clock speed of 3.2 GHz

16 GB RAM

Hard drive and data storage

1 TB Solid State HD

Operating system

Microsoft® Windows® 10 IoT

64-bit OS

Peripheral devices

At least 3 USB ports

HP USB Keyboard US

HP USB Optical Mouse

Networking

Ethernet LAN 10/100/1000

Signal Processing

18-bit dynamic range with IEEE

32 bit floating-point resolution

Monitor

LCD flat panel, 23 in.

LCD flat panel, 27 in. (recommended)

Data management options

BD FACST™ Workflow Manager for LIS connectivity

BD Assurity Linc™ software for remote diagnostic capability

Installation requirements

Operating temperature

15°C (59°F) to 30°C (86°F)

Maximum of ±2.5°C/day fluctuation recommended

Humidity

15% to 85% relative humidity (noncondensing)

Dimensions (W x D x H)

Cytometer

63.2 x 57.9 x 57.9 cm

24.9 x 22.8 x 22.8 in.

With standard tanks

85.2 x 57.9 x 57.9 cm

33.5 x 22.8 x 22.8 in.

With standard tanks and loader

107.2 x 57.9 x 57.9 cm

42.2 x 22.8 x 22.8 in.

Weight

Cytometer: 56.0 kg (123.5 lb)

Loader: 13.2 kg (29 lb)

Power specifications

Voltage: 100–240 ±10% VAC

Frequency: 50–60 ±10% Hz

Current: 2 A

Power: 200 W

Operational heat dissipation

≤488 BTU/hour at ambient temperature

Noise under normal operating conditions

≤55 dBA over 8 hours under normal operating conditions

Altitude

≥0.8 atm (approximately 2,000 meters)

System options

BD FACSTM Universal Loader

Compatible with 30 (barcoded) or 40 (non-barcoded) tubes (12 x 75 mm). Equipped with an orbital shaker for in-place mixing and resuspension of cells. Optimized for all supported plate and tube formats. Includes internal barcode reader for positive sample identification.

Supported barcode formats

Codabar

Code 128

Code 3 of 9

Interleaved 2 of 5

Handheld barcode scanner

Handheld barcode scanner with stand supporting common 1-D and 2-D formats

Extended-use fluidics

Optional tanks and connectors to allow for use with 10-L waste tanks and BD FACSTFlow™ cubitainers

CE BD FACSLytic™ Flow Cytometer with the BD FACSuite™ Clinical and BD FACSuite™ Applications, BD FACSTM Universal Loader, BD® CS&T Beads, BD FACSTFlow™ Sheath Fluid, BD OneFlow™ PCST, PCD, ALOT and BD Tritest™ CD4/CD8/CD3 are in vitro diagnostic medical devices bearing a CE mark.

CE
2797 BD Tritest™ CD4/CD8/CD3 with BD Trucount™ Tubes, BD Tritest™ CD3/CD4/CD45 with optional BD Trucount™ Tubes, BD Multitest™ 4-Color reagents as mentioned above, BD Multitest™ 6-Color TBNK with optional BD Trucount™ Tubes, BD Trucount™ Tubes, BD Trucount™ Controls, BD OneFlow™ LST, B-CLPD T1 and BD® Stem Cell Enumeration Kit are in vitro diagnostic medical devices bearing a CE mark and are CE certified by BSI Group the Netherlands B.V. (Notified Body Number = 2797).

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