BD Pathway High-Content Analyzers

Technical Specifications

Delivering industry-leading bioimaging, BD Pathway™ high-content cell analyzers combine superior image quality, flexible image capture and live-cell analysis to address a wide range of applications. BD Pathway systems provide fluorescence intensity measurements and temporal and morphological imaging, including subcellular imaging to detect cellular events. Both the benchtop BD Pathway™ 435 and the stand-alone BD Pathway™ 855 provide high performance and ease of use to improve workflow and productivity, along with advanced automation features. Cellular images can be captured in either confocal or widefield mode to deliver precision images for subsequent analysis. A unique optical spinning disk allows operators to switch between confocal or widefield modes, minimizing background fluorescence and maximizing resolution. The innovative BD Pathway motionless stage with movable optics enhances image stability for loosely adherent, suspension, and live cells.

BD Pathway 435

Optics

Proprietary, fully integrated optical design

Selectable laser-based and/or image-based autofocus

Motionless stage handles multiwell plates, microscope slides, and chamber slides

X, Y resolution
100 nm (mechanical)

Z resolution
50 nm (mechanical)

Capture rate
4 images per second

Works with Olympus 4X (air), 10X (air), 20X (air), 40X (air), and 60X (oil immersion) objectives

Montage capability for large field imaging

Automation ready

Imaging modes
Confocal fluorescence, widefield fluorescence, brightfield

Illumination sources
Single metal halide with liquid light guide; multiposition LED grid

Confocal Unit

Nipkow spinning disk

Disk sampling rate
1,000 fps

Pinhole size
70 µM

Filter Configurations

Excitation
8

Dichroic
5

Emission
8

Automated control

Independent operation

Detection and Observation

High resolution cooled CCD camera
12 bit, high QE, effective pixels 1392 x 1024, pixel size 6.45 x 6.45 µm

Software

Advanced imaging software with hardware auto-detection capabilities

Automated focus and image acquisition

Automated segmentation and region of interest (ROI) identification

Interactive data and image navigation

Z sectioning and 3-D rendering

Hierarchical data classification algorithm

Data analysis module for Microsoft® Excel®

Sophisticated data management

Preconfigured and user-configurable applications

Support for endpoint applications

Support for kinetic applications

BMP, TIFF (for image export), and TXT formats for data export

Supports data export to FCS

Computer (minimum specification)

Pentium IV running Microsoft® Windows® XP Professional

4 GB RAM

256-MB video card

250-GB SATA hard drive

24 inch wide aspect ratio LCD flat panel display

DVD burner

Robotics Integration Package

Access door with safety light curtain
Not required

Software interface to multiple scheduling systems
Optional

Physical Dimensions

Width
33.5 inches (85 cm)

Depth
19 inches (48 cm)

Height
13.5 inches (34 cm)

BD Pathway 855

Optics

Proprietary, fully integrated optical design

Selectable laser-based and/or camera-based autofocus

Motionless stage handles 96 or 384-well plates, microscope slides, and chamber slides

X, Y resolution
100 nm (mechanical)

Z resolution
50 nm (mechanical)

Capture rate
4 images per second

Works with Olympus 4X (air), 10X (air), 20X (air), 40X (air), and 60X (oil immersion) objectives

Montage capability for large field imaging

Automation ready
(requires robotics integration package)

Imaging modes
Confocal fluorescence, widefield fluorescence, brightfield

Illumination sources
Dual metal halide with liquid light guide; single automated LED

Confocal Unit

Nipkow spinning disk

Disk sampling rate
1,000 fps

Pinhole size
70 µM

Filter Configurations

Excitation
16

Dichroic
5

Emission
8

Automated control

Independent operation

Detection and Observation

High resolution cooled CCD camera
12 bit, high QE, effective pixels 1344 x 1024, pixel size 6.45 x 6.45 µm

Binocular eyepiece for direct sample viewing in confocal or widefield mode

Liquid Handling and Environmental Control

On-stage pipet head with single-position syringe (2–100 µL)

Mixing capability (titration)

Disposable pipet tips

Environmental control (ambient to 38°C) and CO_2

Software

Advanced imaging software with hardware auto-detection capabilities

Automated focus and image acquisition

Automated segmentation and region of interest (ROI) identification

Interactive data and image navigation

Concurrent multiple ratiometric dye kinetics (US Patent 5,332,905)

Z sectioning and 3-D rendering

Hierarchical data classification algorithm

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Optional

Software interface to multiple scheduling systems
Optional

Physical Dimensions

Width
43 inches (109 cm)

Depth
41 inches (104 cm)

Height
66 inches (168 cm)

Class I (1) laser product.
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