DxH 520

5-part differential closed tube hematology analyzer

BECKMAN COULTER

Move healthcare forward.

DxH 520 HEMATOLOGY ANALYZER

Minimum footprint. Maximum productivity.

The new closed tube 5-part differential analyzer—because great things come in small packages

Spend more time on patient care and less on operational tasks with the powerful, compact DxH 520 closed tube hematology analyzer, the latest in a legacy of low-volume solutions. With the DxH 520 closed tube system, laboratories can deliver critical first results accurately, with as little as 375 µL microtainer fill-volume and an aspiration of only 17 µL.

Experience safety without compromise by using closed tube technology. The DxH 520 analyzer provides optimal security against blood-borne pathogens due to its closed tube aspiration. Laboratories can enhance operational flexibility by selecting from an extensive number of tube types and accommodate cap-pierceable microtainers, such as MAP tubes. The system streamlines the analysis of puncture samples from infant, child, geriatric, oncology and critical-care patients. Laboratories can also choose the open tube mode for even smaller draws and non-cap-pierceable collection tubes.

Provide comprehensive care with less than a drop of blood to test the most precious patient samples. Technologists can perform 5-part differential testing with ease, using just a finger-prick amount of blood. This is ideal for pediatric patients, who routinely provide small sample volumes at collection. Tests can be added or repeated while using less blood and without collecting another sample.

The DxH 520 enables laboratories to:

- Maximize laboratory productivity
- Reduce overall operating costs
- Deliver high-quality clinical results

MAXIMIZE LABORATORY PRODUCTIVITY

The DxH 520—designed for high reliability—delivers automated tasks, efficient reagent usage, easy reagent replacement, and powerful patient and QC data-management tools. All of this means increased productivity and maximum uptime for laboratories.

Enhance uptime and system maintenance

Ensure uptime with proven system reliability

Know that results will be delivered precisely when needed. A global, multisite reliability study of the analyzer's platform, using more than 36,000 samples, showed an emergency service-call rate of less than one call per year. With high reliability and a low number of operational tasks, the DxH 520 analyzer is able to achieve an uptime rate greater than 98.5%.

Discover task automation

Apply the programmable power-up and start-up features with background checks. Users are able to set the system to activate automatically, before the beginning of a shift, so it is ready to work when they arrive. Cleaning can also be programmed and automated to minimize daily maintenance.

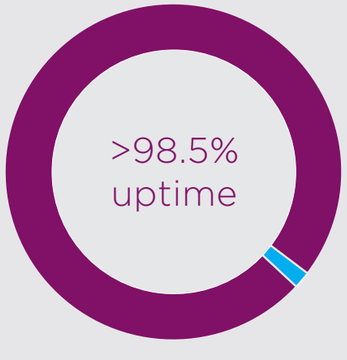
Benefit from quick and infrequent reagent replacement

Use only three reagents, requiring only five minutes or less for replacement, to keep analysis running smoothly throughout the day.

Each reagent can be changed out individually in less than two minutes.

Designed for uptime

Greater than 98.5% uptime (analysis based on global reliability study)



Optimize laboratory performance

Achieve fast analysis—in 60 seconds or less

Simplify work processes and allow rapid turnaround of specimens with intuitive and powerful software, helping to minimize patient wait times.

Create valuable space

Maximize available space with an analyzer that is smaller than a standard microwave and does not require a separate PC or monitor. The DxH 520 analyzer's compact design gives laboratories the flexibility to place instrumentation in optimal locations—closer to the patient, for example—to create a leaner workflow for greater efficiency.

Execute any command in three touches or less

Learn how to use the system in less than one hour due to the DxH 520 analyzer's intuitive software. Complete any system operation in three steps or less and access all major functions quickly from any screen.

Improve data and quality control management

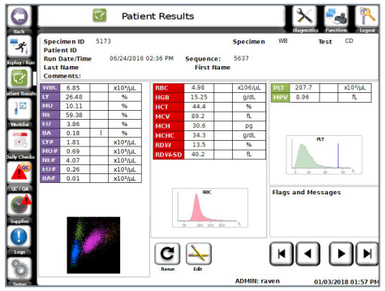
Gain powerful patient data-management tools

- Reduce clerical errors, inefficiencies and risk with a bidirectional interface
- Expand sample storage capacity—up to 30,000 patient samples—for easy delta checks and file retrieval
- Upload records quickly and easily with a front-side USB connection port
- Ensure patient privacy and security with customizable user login and automated timeouts with full traceability

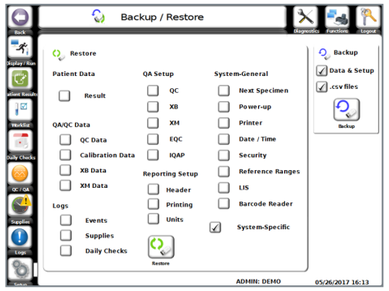
Achieve trusted performance with a robust QC management-tool package

- View Levy-Jennings limits and quality control (QC) results with easy-to-interpret graphs
- Access online peer-review expertise and support
- Upload new QC lot details with an easy-to-use handheld barcode reader
- Automate daily checks and keep up to 50 data points stored for easy viewing
- Expand QC monitoring with additional techniques, such as the XM, XB and eQC methods

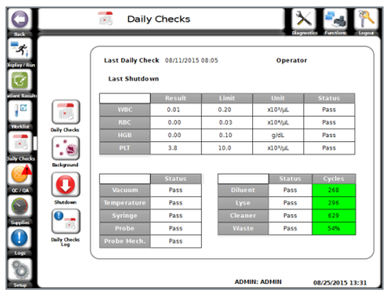
Patient result screen



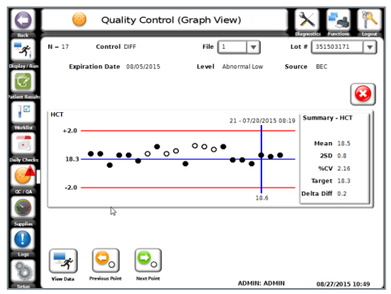
Easy backup to restore patient test results, QC reports and consumable event logs



Preprogrammed daily and background checks



Easy-to-read QC charts



REDUCE OVERALL OPERATING COSTS

The efficiently designed DxH 520 can reduce overall operating costs through the use of non-toxic reagents and low power consumption for efficient management of the laboratory's bottom line.

Preserve valuable resources

Reduce reagent usage

Use 50% less reagent volume per sample, compared to other low-volume analyzers. A single reagent bottle can support hundreds of tests.

Lower the cost of disposal

Utilize cyanide-, azide- and formaldehyde-free reagents, reducing the cost of disposal as well as helping to meet environmental and regulatory compliance standards.

Optimize power consumption

Consume less power by using fewer moving parts and energy-efficient components. A low-energy light source promotes longer life, and a highly reliable auto-voltage-switching power supply, which regulates voltage fluctuations.

DELIVER HIGH-QUALITY RESULTS

The DxH 520 low-volume system provides accuracy through Coulter Principle technology and Axial Light Loss (ALL) for a white blood cell (WBC) differential. Proprietary dynamic gating increases the automated differential accuracy, delivering more reportable results with less unnecessary flagging. Hemoglobin is read accurately using the cyanide-free oxyhemoglobin methodology at 545 nm. Counting and sizing is performed in duplicate, also using the Coulter Principle, for greater precision.

Apply optical analysis—Axial Light Loss (ALL)—and Coulter Principle innovation to WBC testing

Combine ALL and Coulter Principle technologies to complete an accurate leukocyte differential

Gain accurate cellular information, measured by preserving cells in their native states. The DxH 520 analyzer does not alter blood cells through staining, shrinkage or WBC lysis, which can induce fragility in the cells and distort results (Figures 1a and 1b). The digital information obtained from the WBC blue LED analysis is processed through the WBC differential algorithm. This information is represented on a 2D scatter plot, according to Coulter Principle volume, plotted on the Y-axis and ALL.[1] Users can easily identify cells by color.

Figure 1a: Optimal measurement zone

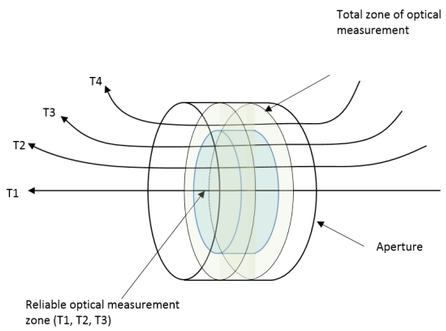
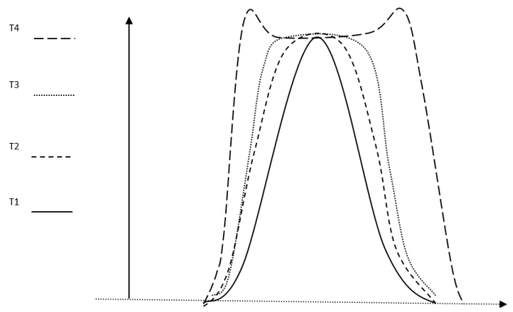


Figure 1b: Optimal cell pulses identified



Improve flagging while maintaining effective clinical sensitivity — with proprietary dynamic-gating technology

Improve confidence in the accuracy of the leukocyte differential with proprietary dynamic-gating technology compared to a static gate

Take advantage of sophisticated gating technology that improves the identification of cell populations by adjusting the thresholds between cell-cluster arrangements. The unique dynamic-gating technology in the DxH 520 analyzer provides multiple layers of adjustable gates, unlike the static or simple dynamic gates available in other technologies. With Beckman Coulter's proprietary method, the gates move to more proper cutoffs between cell clusters in a series of steps (Figures 2a and 2b). Improvement is seen in more challenging cell populations, such as lymphocytes and eosinophils, giving a more accurate leukocyte differential than static gating.

Figure 2a: Static-gating technology

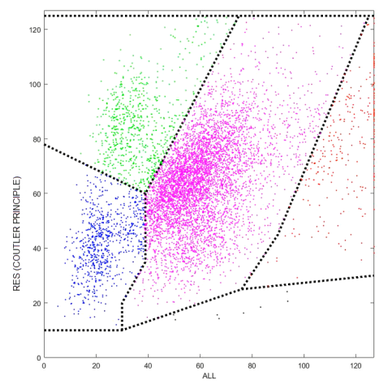
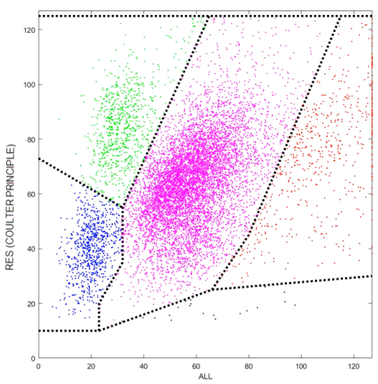


Figure 2b: Dynamic-gating technology



Reduce unnecessary flagging, compared to static- or less-effective gating techniques

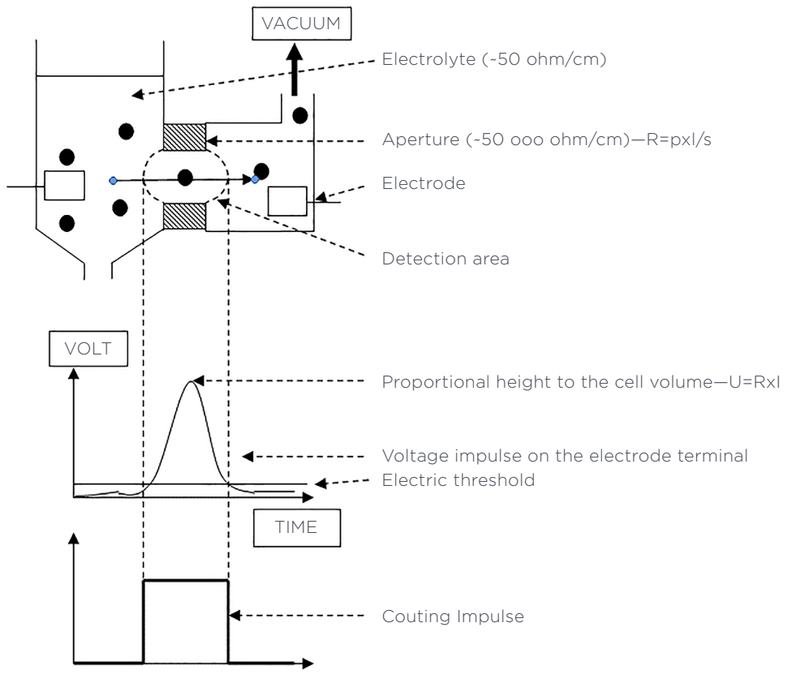
Achieve less flagging, while maintaining effective clinical sensitivity, and achieve excellent agreement with manual slide reviews and good predicative values.

Secure quality CBC results and eliminate guesswork

Provide fast, accurate CBC analysis using the Coulter Principle and digital pulse processing

Achieve accurate WBC, red blood cell (RBC), and platelet counting and sizing with the proprietary Coulter counting method (Figure 3). Digital pulse processing enables the recognition of data points that fall outside the optimal counting zone. Removing these unreliable data points enhances count accuracy (Figures 1a and 1b). Quality results are further improved with dual-count apertures and a wider linearity range for a more comprehensive patient-care experience.

Figure 3: Coulter impedance for size and counting



DxH 520 Hematology Analyzer Specifications

Mode of Operation	Open and closed tube sampling			
Sample Volume	17 µL of venous or micro-collected whole blood 20 µL of whole blood for pre-diluted analysis			
Throughput	55 closed tube samples per hour, 60 open tube samples per hour			
Menu/Test Parameters	WBC, RBC, HGB, HCT, MCV, MCH, MCHC, RDW-SD, RDW-CV, PLT, MPV, LY%, LY#, MO%, MO#, NE%, NE#, EO%, EO#, BA%, BA#*			
RUO Parameters	IMM%, IMM#, LHD, MAF, PCT, PDW			
Data Storage	30,000 patient results, including graphics, flags, codes and messages; 12 control files, each with a maximum of 150 runs			
User Interface	Touch screen; Handheld barcode scanner			
Power Requirements	100–240 VAC 50–60 Hz/Single phase with ground			
Power Consumption	Less than 120W			
Operational Ambient Temperature	18–32°C (64.4–89.6°F)			
Humidity	80% relative humidity (non-condensing) at 32°C (89.6°F)			
Altitude	Up to 3,000 meters (9,843 feet)			
External Storage	Supports USB 2.0 (five ports)			
LIS	Supports serial (RS-232) and Ethernet communication			
Printer	Optional USB printer			
Languages	Czech, English, French, German, Iberian Portuguese, Italian, Japanese, Romanian, Spanish			
Weight and Dimensions	Width	Height	Depth	Weight
	270 mm (10.6 in.)	406 mm (16.0 in.)	430 mm (16.9 in.)	11.4 kg (25.1 lbs.)

Ordering Information	Part Number
DxH 520 Hematology Analyzer	**B40602**
DxH 520 Diluent (10 L each)	**B36845**
DxH 520 Lyse (500 mL each)	**B36846**

Ordering Information	Part Number
DxH 520 Cleaner (500 mL each)	**B36868**
DxH 520 Calibrator (2 x 2.0 mL)	**B36880**
DxH 520 Control (6 x 2.3 mL, tri-level sets)	**B36872**

DxH 520

DxH 690T†

DxH 900

DxH 900-2S

DxH 900-3S

Low-volume Up to 60 samples/hour	**Medium-volume** Up to 100 samples/hour	**Medium- to high-volume** Up to 100 samples/hour	**High-volume** Up to 200 samples/hour	**Ultra-high-volume** Up to 300 Samples/Hour

* Basophil count and percent values may be under reported, all numerical results reported for these parameters must be reflexed for manual microscopy OR followed up for additional testing based on the laboratory's SOP.

† For Investigational Use Only. The performance characteristics of this product have not been established.

Enhance your laboratory operations and improve patient care with our hematology solutions. Visit www.beckmancoulter.com/hematology

1. Beckman Coulter. DxH 520 Instructions for Use v2.

For Beckman Coulter's worldwide office locations and phone numbers, please visit www.beckmancoulter.com/contact

BR-183312