Advancements in Technology:

CBC Methodology

UniCel® DxH 800 Coulter® Cellular Analysis System



In Hematology, the complete blood count (CBC) is the fundamental analytical test that evaluates the three main cellular components: white blood cells (WBC), red blood cells (RBC) and platelets (PLT).

The UniCel DxH 800 incorporates new and innovative electronic and mechanical designs that, in conjunction with advanced algorithm technology, improve system performance and availability. These designs and technologies enhance the sensitivity and resolution of cell counting at critical decision levels for the analyses of whole blood and body fluid samples providing the highest quality patient results.

The UniCel DxH 800 - CBC Process

The UniCel DxH 800 CBC Module performs the functions of sample preparation and sample measurement. WBC, RBC and PLT cellular count and volume as well as Hemoglobin (HGB) measurement information is processed and provided in digital format to the advanced UniCel DxH 800 algorithms.

The UniCel DxH 800 CBC algorithm has four analysis modules, one each for WBC, RBC, PLT and HGB. The WBC, RBC and PLT algorithms utilize the digital count and size information to:

- Perform coincidence correction
- Calculate individual aperture counts and average parameter counts
- Generate average parameter histograms
- Perform count and histogram voting

The advanced algorithms then analyze the WBC, RBC and PLT histograms for interferences and correct or flag the results automatically. These advanced processes ensure the laboratory superior CBC results.

UniCel® DxH 800 Coulter® Cellular Analysis System

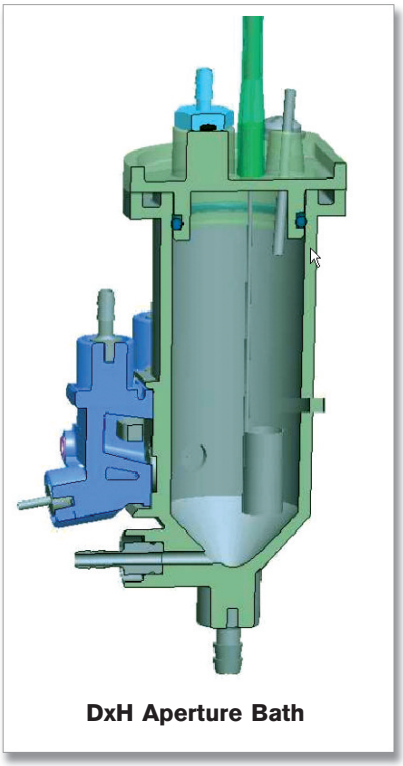
Design and Technology:

Mechanical

- WBC and RBC aperture baths are a new exclusive design – No mixing bubbles
- Solid state diluter design - No Pinch Valves and significantly less tubing
- Patent pending modular design - easier serviceability
- Proprietary designed reagent pumps – reduce micro bubble formation and debris formation
- Increased shielding and grounding – lower background counts for body fluid analysis

These features:

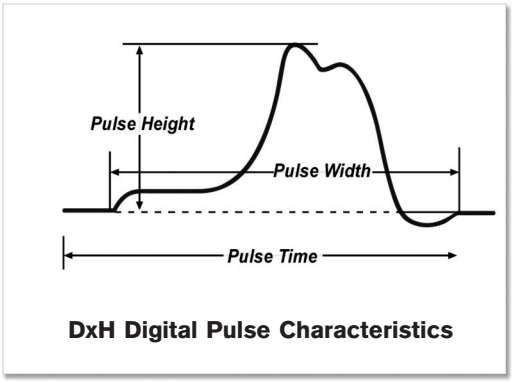
- improve accuracy and precision
- eliminate interferences
- provide lower background counts for body fluid analyses



DxH Aperture Bath

Electronics

- New instrument control circuitry
  - Intelligent Quality monitoring, IQM, provides advanced fault detection and recovery that optimizes system availability and provides real-time system monitoring for all analyzer functions
- Proprietary high speed, high resolution analog to digital conversion – Digital Signal Processing, DSP, provides:
  - Unique Digital Pulse Processor
  - Multiple parameter measurements on each cell event
  - Utilization of patent pending data extraction circuitry for maximum data processing efficiency
  - Maintained stability over time and temperature variations
  - Patent pending modular design for optimized cellular analysis circuitry which saves space and improves accessibility



DxH Digital Pulse Characteristics

Advanced Algorithm

- Advanced DxH 800 CBC algorithms utilize the enhanced digital pulse characteristics for additional cellular measurements:
  - Automatically corrects for WBC interference for all CBC parameters
  - Provides enhanced detection of WBC, RBC and PLT interferences

System / Performance

- Extended measuring ranges for WBC, RBC and Platelets
- Lower background limits for body fluid analyses
- Environmentally friendly reagents

These features set the new standard for Beckman Coulter CBC technology.

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We're better together

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