CELL-DYN® 3700
Strength in Technology, Proven Reliability

Optical WBC Technology

Patented M.A.P.S.S.™ Differential

Multiple Technologies
Multiple Technologies Improve Accuracy and Increase the Number of Reportable Results

The CELL-DYN® 3700 offers advanced diagnostic capability for clinical laboratories. The instrument performs simultaneous laser and impedance measurements on white blood cells, and has been designed to choose the correct answer even in the presence of problematic specimens. This capability equates to better accuracy, less review and a higher number of reportable patient results.

The CELL-DYN® 3700 can be configured as a fully automated system including a sample loader or as a single sample closed system. The system provides a complete 23-parameter CBC at a rate of 90 samples per hour.

Advanced Technology Minimizes Obsolescence

The CELL-DYN® multiple technology platform is one of the most advanced cell counting systems available. Dual-technology assures powerful and efficient analysis today and in the future.
M.A.P.S.S.™ Differential

M.A.P.S.S.™ technology provides a differential virtually free of interference from NRBCs, clumped platelets, and debris. Patented kinetic WBC monitoring alerts the operator to the presence of “osmotically fragile” cells. This system generates a specific flag correlating to the types of cells found in chronic lymphocytic leukemia and other lymphoid malignancies.

Increased Resolution Expands WBC Linearity

CELL-DYN Sheath Reagent is formulated to eliminate stroma and debris from the optical leukocyte enumeration. This process allows the helium-neon laser to accurately count white cells in extreme leukopenic samples.

Internal Validation Provides Diagnostic Superiority

Internal validation of WBC Optical Count (WOC) and WBC Impedance Count (WIC) assures the correct leukocyte count is virtually always reported, even in the presence of abnormal pathology.

Resistant RBC Mode

A detergent lytic agent and special resistant RBC mode minimizes interference caused by resistant red cells. This feature saves technologist time by reducing the need for manual count verification.

QC Management

Twenty QC files (120 points per file) are available with summary statistics and Levey-Jennings plots. In addition, moving averages with modified Westgard™ rules are available for system monitoring, including the differential parameters.

Walk-Away Automation

The optional 100-position sample loader system employs a tube-sensing mechanism that accepts the most commonly used collection tubes. At the point of aspiration, bar codes are read and tubes are sampled in their upright position. Results are matched with worklist demographics to provide a complete report.
Reticulocyte Assays With Reportable IRF Based Upon NCCLS/ICSH Methods

Laboratories have long requested an automated method for retic onsuming and labor-intensive test. Abbott has based its reticulocyte assay on the NCCLS/ICSH recommended method of supravital staining technology. Red blood cells and reticulocytes are counted, sized and identified by the proprietary M.A.P.S.S.™ (Multi-Angle Polarized Scatter Separation) technology.

Comprehensive Reticulocyte Analysis & Classification

The CELL-DYN® 3700 utilizes New Methylene Blue staining to measure the Immature Reticulocyte Fraction (IRF). Immature reticulocytes contain more RNA than mature reticulocytes. Since Polyribosomal RNA absorbs new methylene blue stain, these immature cells can be identified by 90° laser scatter. Results are graphically displayed on the CELL-DYN® monitor with a threshold that clearly separates immature and mature reticulocytes. The IRF is reported as a fraction or percent of the total reticulocytes.

Unique Advantages of IRF Analysis

• An improved method for the classification of anemias
• Automated monitoring of erythropoetic activity during therapy
Multi-Dimensional Cell Classification

M.A.P.S.S.™ (Multi-Angle Polarized Scatter Separation) technology applies a multi-step algorithm to the light scatter data to classify WBCs. Four distinct light-scattering measurements are made on each individual white blood cell (0°, 10°, 90° and 90° depolarized). A list of all the cells with these corresponding measurements is made; this is called List Mode Data Analysis. Up to 10,000 events are measured and stored on each patient sample.

The proprietary M.A.P.S.S. technology accurately identifies five white cell sub-populations. Since white cells are diluted in a single leucoprotective reagent, they maintain their cellular integrity and are measured in their true native state. The elimination of fixatives, dyes or stains minimizes the possibility of misclassification caused by numerous dilutions and special dye channels.
**SPECIFICATIONS**

**Technology and Methods**
- Combined impedance and M.A.P.S.S.™ flow cytometry
- 5 mW helium neon laser
- Hydrodynamic focusing of cell stream
- Dual WBC methods (WOC, WIC)
- WBC (WOC) and differential measurement
  - Light scatter analysis: 0°, 10°, 90°, 90° depolarized
- WBC (WIC) measurement
  - Nucleated cell impedance analysis
- List mode data analysis up to 10,000 cells
- Cell-by-cell analysis with color identification
- Cyanide-free hemoglobinometry
- Complete reticulocyte analysis with IRF
- Resistant RBC mode for lyse-resistant red cells

**Processing and Aspiration**
- CBC with auto-differential, 90 specimens per hour
  - <240 microliters (closed mode)
  - <130 microliters (open mode)
  - <355 microliters (loader mode)

**Data Management**
- Full on-board QC
  - 20 files (120 data points)
  - Summary statistics and Levey-Jennings® plots
  - Moving averages (including differential)
  - Westgard rules
- 10,000 results stored with graphics
- Work list capability (800 entries)
- Programmable patient and report limits
- Complete patient demographics
- Bar code reading: Code 39, Codabar, Code 128, Interleaved 2 of 5
- Auto-calibration program
- On-board diagnostics

**Operating Environment Temperature**
- 15°C (59°F) to 30°C (86°F)

**Humidity**
- 10% to 85% relative humidity, non-condensing

**Data Module**
- High-speed microprocessor
- Hard & floppy disk drives
- RS232, bi-directional interface
- 15” SVGA color monitor
- Multiple language option: French, German, Italian, Japanese, Spanish

**Standards and Safety Compliance**
- UL
- CSA
- IEC 1010
- CE Mark

CELL-DYN® is a registered trademark and M.A.P.S.S. is a trademark of Abbott Laboratories. Levey-Jennings is a registered trademark of the Levey-Jennings Company.

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**Parameters**

<table>
<thead>
<tr>
<th>Parameters</th>
<th>White Cells</th>
<th>Red Cells</th>
<th>Platelets</th>
<th>Reticulocytes</th>
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<tbody>
<tr>
<td>WBC#</td>
<td>RBC#</td>
<td>HGB</td>
<td>PLT#</td>
<td>RETIC#</td>
</tr>
<tr>
<td>Neutrophil # &amp; %</td>
<td>HCT</td>
<td>MPV</td>
<td>*PCT</td>
<td>RETIC %</td>
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<tr>
<td>Lymphocyte # &amp; %</td>
<td>MCV</td>
<td>*PDW</td>
<td>IRF</td>
<td></td>
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<tr>
<td>Monocyte # &amp; %</td>
<td>MCH</td>
<td></td>
<td></td>
<td></td>
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<tr>
<td>Eosinophil # &amp; %</td>
<td>MCHC</td>
<td></td>
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<tr>
<td>Basophil # &amp; %</td>
<td>RDW</td>
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*For Laboratory Use Only*

**Electrical Requirements**

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<thead>
<tr>
<th>Module</th>
<th>Voltage</th>
<th>Frequency</th>
<th>Max Current</th>
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<tbody>
<tr>
<td>Analyzer (CS)</td>
<td>110VAC ± 10%</td>
<td>50/60 ± 3Hz</td>
<td>3 amps</td>
</tr>
<tr>
<td>Analyzer (SL)</td>
<td>120VAC ± 10%</td>
<td>50/60 ± 3Hz</td>
<td>3 amps</td>
</tr>
<tr>
<td></td>
<td>220VAC ± 10%</td>
<td>50/60 ± 3Hz</td>
<td>6 amps</td>
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<tr>
<td>Monitor</td>
<td>100-240 VAC</td>
<td>50/60 ± 3Hz</td>
<td>1.3 amps</td>
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<tr>
<td>Printer</td>
<td>120VAC ± 10%</td>
<td>50/60 ± 3Hz</td>
<td>0.4 amps</td>
</tr>
<tr>
<td></td>
<td>240VAC ± 10%</td>
<td>50/60 ± 3Hz</td>
<td>0.2 amps</td>
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**System Components**

<table>
<thead>
<tr>
<th>Module</th>
<th>Height</th>
<th>Width</th>
<th>Depth</th>
<th>Weight</th>
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</thead>
<tbody>
<tr>
<td>Analyzer (CS)</td>
<td>24” (61cm)</td>
<td>30” (76cm)</td>
<td>22” (56cm)</td>
<td>190 lbs (86kg)</td>
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<tr>
<td>Analyzer (SL)</td>
<td>27” (68cm)</td>
<td>30” (76cm)</td>
<td>31” (79cm)</td>
<td>288 lbs (131kg)</td>
</tr>
<tr>
<td>Printer</td>
<td>13” (33cm)</td>
<td>19” (48cm)</td>
<td>24” (61cm)</td>
<td>14.3 lbs (6.5kg)</td>
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