



HIGH EFFICIENCY HEMATOLOGY A SHINING EXAMPLE OF ADVANCED TECHNOLOGY

Intended Use:

The CELL-DYN Ruby is a multi-parameter automated Hematology analyzer designed for *in vitro* use in clinical laboratories. See Operator's Manual for warnings, precautions and limitations for proper use of the instrument.

CELL-DYN Ruby



Put science on your side.

 **Abbott**
A Promise for Life

FIRST PASS EFFICIENCY. GETTING IT RIGHT THE FIRST TIME.

Reportable WBC and WBC differential results on the first run, even when abnormal cells and interfering substances are present:

- MAPSS (Multi-Angle Polarized Scatter Separation) technology provides laser-accurate optical readings for WBCs with differential
- Accurate identification using 4-angle scatter measurements
- Use of multiple scatterplot analysis for identification of abnormal cells and interfering substances

First pass optical platelets. Right the first time.

- The CELL-DYN Ruby 2-angle optical platelet count accurately enumerates and sizes to help ensure first pass reportable results
- Reduces reflex testing due to interference from microcytic RBCs, RBC fragments, WBC fragments and non-platelet particles

Lysis-resistant RBC mode.

- RBC analysis includes 3-dimensional counts, indices and retics
- Optical RBC technology means fewer manual reviews

Flexible, easy-to-use software.

- Features customizable views
- Easily performs non-routine tasks

Only three reagents for complete CBC with 5-part WBC differential analysis.

- WBC lyse
- HGB lyse
- Diluent/sheath



SEE BRILLIANT RESULTS.

MULTIFACETED SOFTWARE OFFERS TOUCH-SCREEN CONVENIENCE AND MAXIMUM FLEXIBILITY.

Easy for everyone.

- Screens are straightforward, intuitive and easy to navigate
- The software offers customizable views
- Handy tool tips help optimize operator's experience
- Automatic monitoring of reagent status

Even non-routine tasks are easy to perform and user-friendly.

- Calibration functions
- Help menus
- Help videos

Configured for Security.

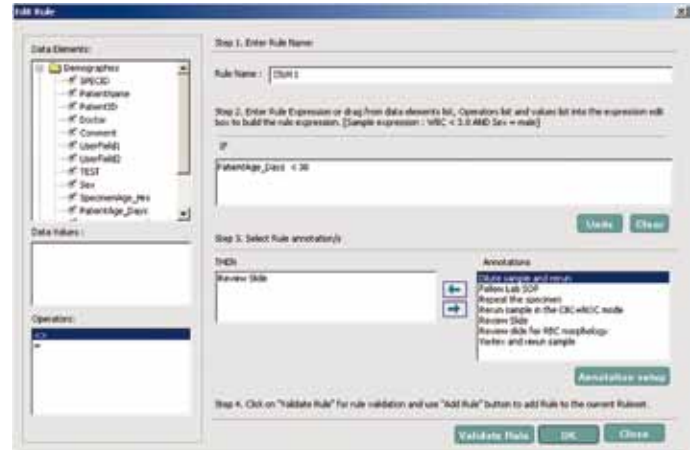
User sign-in is password-protected with multiple security levels

QC Files.

Users can store up to 500 quality control files

Data Management.

Rules-based result annotations allow you to standardize lab processes to meet your laboratory's needs. You may program up to 100 rules and up to 48 result annotations to help streamline your data management processes.



Analytical Performance

Optical white cell, red cell and platelet measurement technology ensures reliable accurate and precise performance for your hematology workload.

HIGH
EFFICIENCY
HEMATOLOGY



PathFinder 350S – Flexible Automation

Simplified sample handling with flexible configurations for both pre-analytical and post-analytical sorting for reduced manual interventions.

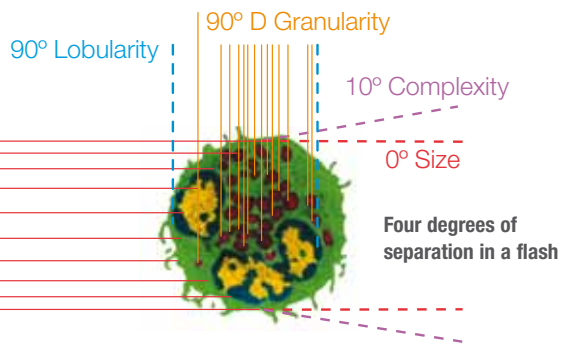


Abbott Informatics

Enhancing operational efficiency with user-definable decision rules, autoverification and QC management.

ABBOTT HEMATOLOGY. ENHANCED FIRST PASS EFFICIENCY WITH MAPSS TECHNOLOGY.

Highly discriminate, sequential separation using MAPSS technology.

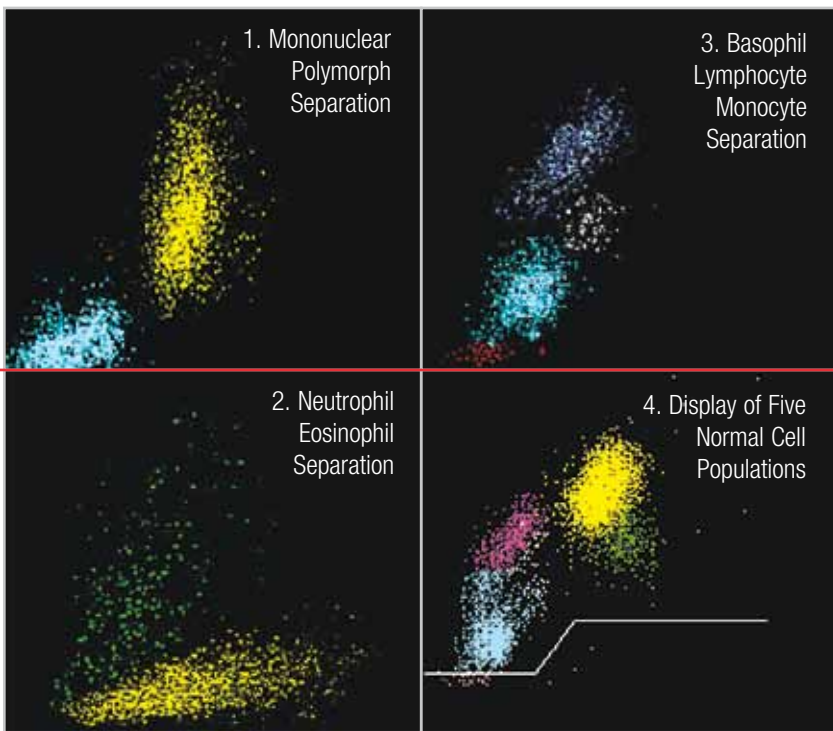


MAPSS Laser Technology.
A higher level of interrogation.

- Analysis performed on up to 10,000 cells from a single dilution, using a single reagent
- Captures up to 40,000 data points

MAPSS results are displayed in elegant, multiple, color-coded scatterplots.

- Discriminates between neutrophils, eosinophils, basophils, monocytes and lymphocytes
- Identifies and classifies immature cells and interfering substances



How MAPSS differentiates and classifies.

Cell	Size	Complexity	Lobularity	Granularity	Classification			
	0°	10°	90°	90° Depolarized	1st	2nd	3rd	4th
1	165	162	116	32	POLY	NEUT	—	—
2	60	64	15	6	MONO	—	—	LYMPH
3	140	79	21	99	MONO	—	—	MONO
4	148	182	104	118	POLY	EOS	—	—
5	90	110	28	8	MONO	—	BASO	—

Example data

MAPSS

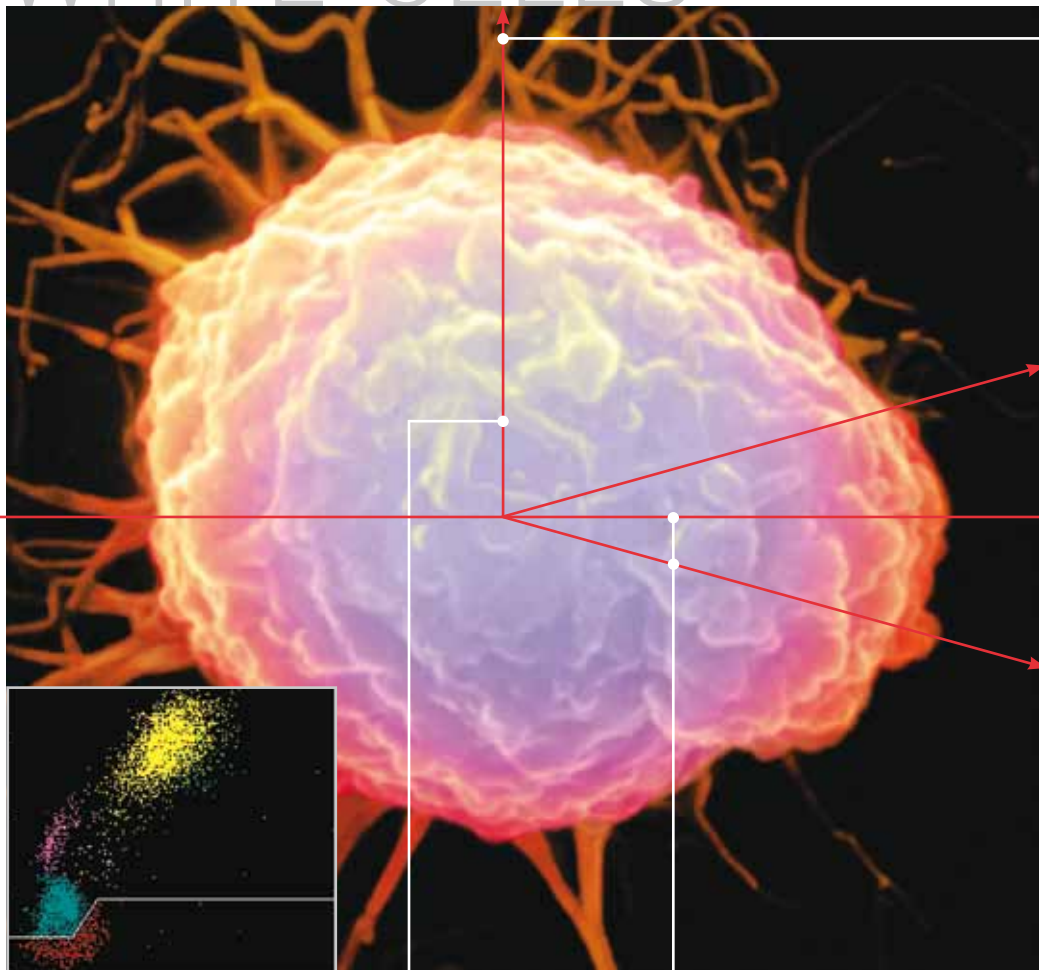
FOUR-DIMENSIONAL WHITE BLOOD CELLS (WBC) ANALYSIS.

White cells are counted and studied so that results can be reported on the first run, even when abnormal cells and interfering substances are present.

- Reduced manual reviews due to interference from NRBCs, clumped platelets and debris

- MAPSS technology can detect potential interference from lysis-resistant red cells. These samples can be re-run in the lysis-resistant mode without microscopic review (See Figures 1 & 2).

WHITE CELLS



1
Neutrophils and eosinophils are separated from lymphocytes, monocytes and basophils by differences in their complexity and lobularity.

Figure 1:
The occurrence of a significant population of cells occurring below the dynamic WOC threshold can suggest the presence of lysis-resistant RBCs.

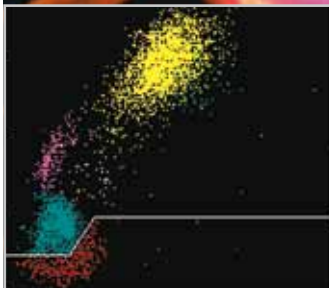
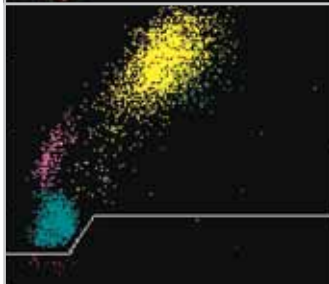


Figure 2:
In cases where lysis-resistant RBCs occur, the sample is re-run in the resistant RBC mode.



2
Neutrophils are separated from eosinophils by virtue of their different characteristics in scattering polarized (90°) and depolarized (90° D) light.

3
Basophils are separated using both size (0°) and complexity (10°) readings, allowing lymphocytes and monocytes to be separated by size (0°) information.

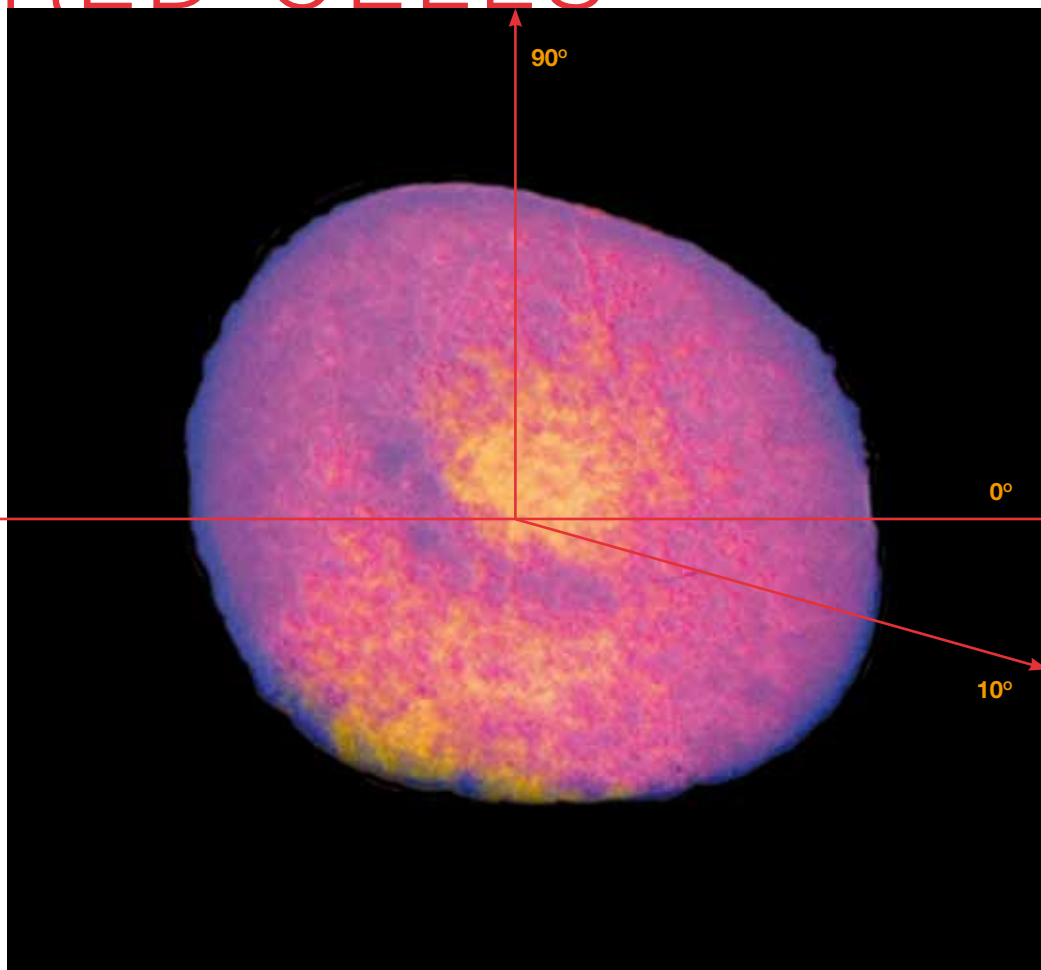
4
The net result is the excellent discrimination of 5 normal cell populations.

THREE-DIMENSIONAL OPTICAL RED BLOOD CELL (RBC) ANALYSIS.

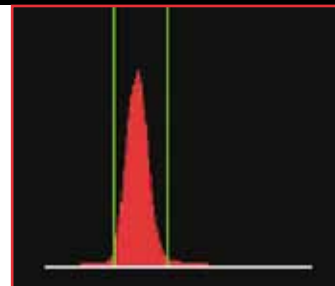
Improves the accuracy of red cell measurements, including retics, with 3-D analysis.

- Comprehensive cell-by-cell measurements with readings taken at 0°, 10° and 90° for exquisite accuracy
- Retics analyzed via 0°, 10° and 90° scatter
- Retic assay based upon NCCLS/ICSH methods

RED CELLS



Red cell size and size distributions are displayed using a histogram constructed from the cell-by-cell volume calculated using the 0°, 10° and 90° measurement of each cell.

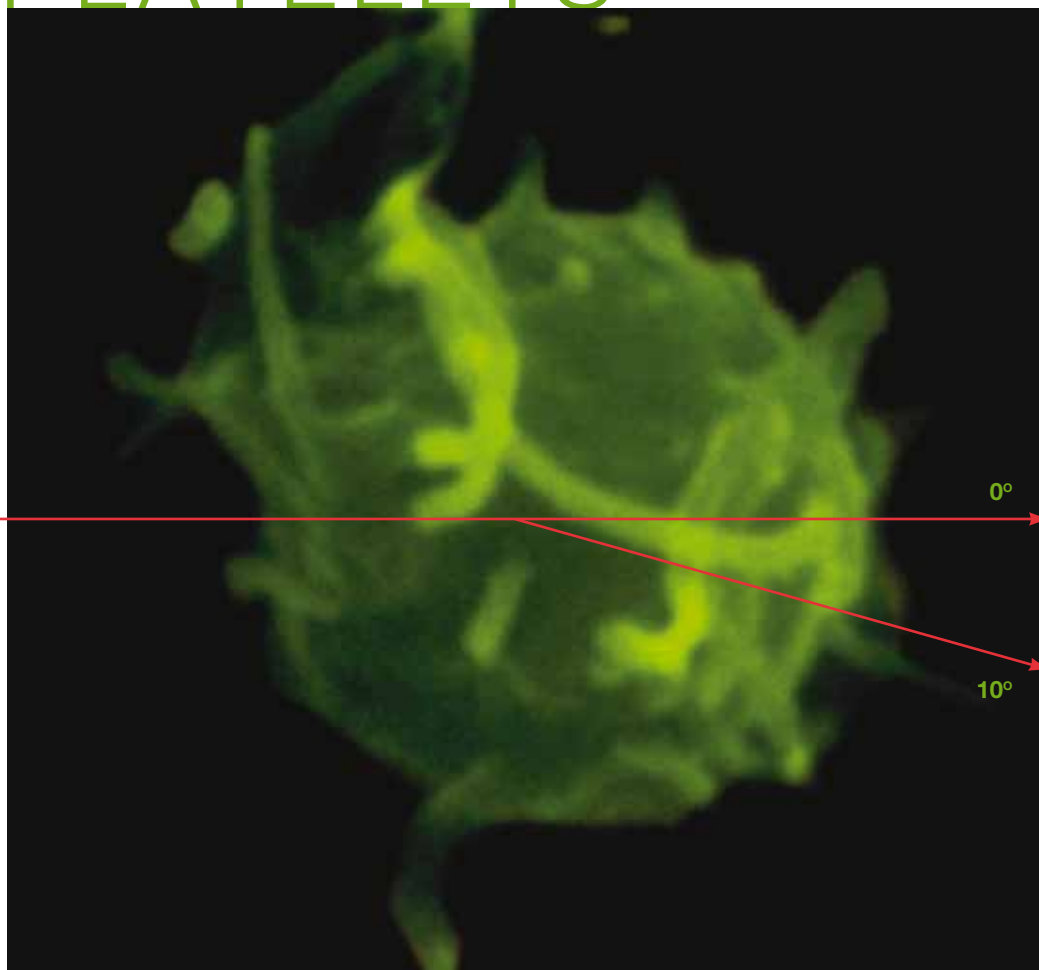


TWO-DIMENSIONAL OPTICAL PLATELET ANALYSIS.

Reportable platelet counts across a wide variety of abnormal conditions.

- Two-angle analysis separates the platelet and RBC populations
 - Reduced interference from microcytic RBCs, schistocytes, RBC fragments or non-platelet particles
- Reportable results are obtained:
 - without reflexing or extra reagents,
 - in presence of giant or clumped platelets using 2-D separation,
 - on thrombocytopenic samples, and
 - without dilution, on samples with thrombocytosis.

PLATELETS



First Pass Optical Platelet Count: Platelets and RBCs are accurately sized and counted by multidimensional laser light scatter. Whole blood is diluted into a proprietary reagent system that optimizes the separation of platelets and RBCs reducing interference by microcytic red cells and non-platelet particles.



SIMPLY. BRILLIANT. TECHNOLOGY.

PRODUCT INFORMATION

THROUGHPUT	CBC + Differential up to 84 per hour
SAMPLE VOLUME	Open Mode ≤ 150 µL, Sample Loader ≤ 230 µL
REAGENTS	Only 4 reagents including reticulocytes
TECHNOLOGY	
WBC AND DIFFERENTIAL	4-angle optical MAPSS Multiple Scatterplot Analysis
PLATELETS	Dual angle optical analysis, no extra reagent, no reflex testing requirement
RETICULOCYTES	New Methylene Blue NCCLS methods, supravital staining technique

Data Management

- Microsoft Windows based Operating System
- Rules-based result annotations
 - Decision rules
 - Up to 100 rules
 - Up to 48 result annotations
 - Fully customizable
- Touch Screen Monitor
- Full on-board QC
 - Summary statistics and Levey-Jennings plots
 - Moving averages (including WBC differential)
 - Westgard rules
- 10,000 results stored with graphics
- Work list capability
- Programmable patient and report limits
- Complete patient demographics
- Bar code reading: Code 39, Codabar, Code 128, Interleaved 2 of 5, ISBT
- Auto-calibration on-line guide
- On-board diagnostics and help videos

Operating Environment Temperature

- 15°C (59°F) to 30°C (86°F)

Humidity

- ≤ 80% relative humidity, non-condensing Indoor Use

Standards & Safety Compliance

UL
CSA
IEC 1010
CE Mark

Ordering Information

08H67-01 CELL-DYN Ruby Analyzer
09H04-01 Accessory Kit
05H00-02 17" Touch Screen Monitor
08H14-01 Membrane Keyboard

Reportable Parameter Goals

White Cells			Red Cells		Platelets	Reticulocytes
NOC	WOC	NEU	RBC	HGB	PLT	RETIC#
%N	LYM	%L	HCT	MCV	MPV	RETIC%
MONO	%M	EOS	MCH	MCHC		
%E	BASO	%B	RDW	Retic		
			%R			

Analytical Measurement Ranges

PARAMETER	AMR	UNITS
WBC	0.02–246.8	x 10 ³ /µL
RBC	0.00–7.50	x 10 ⁶ /µL
HGB	0.0–25.0	g/dL
HCT	8.3–79.8	%
MCV	58–139	fL
RDW	10.0–29.8	%
PLT	0.00–3000	x 10 ³ /µL
MPV	4.3–17.2	fL
RETC	0.2–22.9	%

Electrical Requirements

MODULE	VOLTAGE	FREQUENCY	MAXIMUM CURRENT	MAXIMUM POWER CONSUMPTION
Analyzer	100–240 VAC	47/63 Hz	5.0–2.2 amps	550 watts
Display	100–240 VAC	50/60 Hz	1.5 amps	50 watts

System Measurements

MODULE	HEIGHT	WIDTH	DEPTH	WEIGHT
Analyzer	49.9 cm (19.25 in.)	86.4 cm (34.0 in.)	76.8 cm (30.25 in.)	105.2 kg (232.0 lbs.)
Printer	Refer to the printer manufacturer's specifications			

CELL-DYN, CELL-DYN Ruby, First Pass Efficiency, MAPSS and *Put science on your side.* are trademarks of Abbott Laboratories in various jurisdictions. Microsoft and Windows are either registered trademarks or trademarks of Microsoft Corporation in the United States and/or other countries. All trademarks are the property of their respective owners. CELL-DYN Ruby is a Class 1 laser product.

Intended Use: The CELL-DYN Ruby is a multi-parameter automated Hematology analyzer designed for *in vitro* use in clinical laboratories. See Operator's Manual for warnings, precautions and limitations for proper use of the instrument.

www.abbottdiagnostics.com
1-877-4ABBOTT

© 2012 Abbott Laboratories HM_12_38078/v1, AH2213, Printed in USA, 09/2012-2.5.

