

System Software

The Excell 22 uses powerful but user friendly software. Every operator request such as counting, retrieving results from the memory, QC, calibration, or printing is only a few key strokes away.

Operating system:
Microsoft WINDOWS 2000™

Patient identification: Allows input of Sample ID, PID (12-digits), name, first name, sex, DOB, comments.

Patient data storage: 100,000 results with scattergrams & histograms.

Report format: User selectable.

Transfer protocols: ASTM or proprietary.

Calibration: Automatic or manual.

Units: The user can select MKS, SI, SI modified, Chinese.

Patient normal range: (8 sets), user defined.

Patient action limits: User defined.

Quality control: A comprehensive onboard QC package allows optimal monitoring of system performance. The Excell 22 allows twelve QC lots with three levels each. QC values can be loaded via keyboard or disk. A log of QC data with automatic calculation of mean, SD, CV and XB can be viewed or printed. QC data can also be viewed in a monthly Levey-Jennings plot. For comparison with other systems, QC results can be transferred for peer to peer analysis via floppy disk.

Bull's moving average can also be viewed and printed.

Operation alerts: Excell 22 users get full feedback on operation of the system with a range of diagnostic alerts.

Maintenance: The system has user programmable automatic startup and shutdown procedures. An Excell 22 maintenance log is available which records all the routine maintenance operations such as startup, shutdown, reagent replacement and calibration.

Language: Multi language capability.

User Interface: 101 key alpha numeric keyboard, mouse and optional bar code reader.

Ordering Information

Part code	Description
INSTRUMENTATION	
BAR-9000-221	EXCELL 22 Hematology analyzer with computer & barcode reader
BAR-9001-221	EXCELL 22 Hematology analyzer without computer & barcode reader
DIL-9032-130	EX-SAM 30 autosampler with barcode reader
DIL-9031-130	EX-SAM 30 autosampler without barcode
EXCELL 22 CONSUMABLES	
RA-1720	EX-ISO (20L) Isotonic Diluent
RA-9500	EX-LYSE (0.5L)
RA-9500CF	EX-LYSE -Cyanide free (0.5L)
RA-004C	EX-ZYME (10L) Clean
RA-6010	EX-FLO (10L) Sheath reagent
5 PART WHITE CELL DIFFERENTIAL QUALITY CONTROL	
EXA-339+	EX-TROL + tri-level + 1 EX-CAL+ (L,N,H 9x3mL of each control)
EXA-3L+	EX-TROL + Low (1x 3ml)
EXA-3N+	EX-TROL + Normal (1x 3ml)
EXA-3H+	EX-TROL + High (1x3ml)

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EXCELL 22

Fully automated 22 parameter CBC system

- 22 parameters, 2 scattergrams and 2 histograms
- Proprietary laser technology, 5 part WBC differential
- Impedance technology for cell counting
- State-of-the-art patented platelet counting technique
- Results produced every 45 seconds
- Sample size flexibility satisfies a wide range of end user requirements
- SVGA color monitor with scattergrams and histograms on screen
- User friendly operator interface
- Data management stores up to 100,000 sample records including scattergrams and histograms
- Built-in QC package (Levey Jennings, X-B)
- Bidirectional port for communication with L. I. S.
- Optional automated 30 tube sampler/mixer available with or without barcode sample identification.



EXCELL 22

System Specifications



Parameter	Precision		Linearity range	
	Level	CV%		
WBC x 10 ³ cells/μL	at 8.0 x 10 ³ cells/μL	<1.5	0.1-150.0	± 0.2 or ± 2%
RBC x 10 ⁶ cells/μL	at 5.0 x 10 ⁶ cells/μL	<1.0	0.02-9.99	± 0.05 or ± 2%
Hgb g/dL	at 16 g/dL	<1.0	0.0-30	± 0.1 or ± 2%
MCV fL	at 90 fL	<1.0	40-150	
Plt x 10 ³ cells/μL	at 250 x 10 ³ cells/μL	<3.0	10-1000	± 10 or ± 5.0%
			10-2000	± 15 or ± 7.0%

To optimize performance the Excell 22 automatically corrects the Plt, RBC, MCV and MPV results when an interference between the Plt and RBC populations is detected.

Background

Drew Scientific has been making leading edge and top quality CBC systems for over 15 years. The Excell 22 is the latest system to come out of our Dallas, Texas, Research and Development facility.

Excell 22 operation

The Excell 22 uses four dimensional optical scattering using laser diodes to optimize the measurement of WBC differential. Electrical resistance is also used for counting (WBC, RBC, Plt) and sizing (Plt, RBC). This is combined with optical absorbance of cyanmethemoglobin for hemoglobin measurement (there is also an optional cyanide free reagent). The technology used combines to give a full CBC with 5 part differential in just under one minute.

The Excell 22 reports the following parameters:

WBC, Lymp#, Gran#, Mono#, Eos#, Baso#, Lymp%, Gran%, Mono%, Eos%, Baso%, RBC, Hgb, Hct, MCV, MCH, MCHC, RDW, Plt, MPV, Pct*, PDW*

The system also displays:
2 x WBC scattergrams
Plt histogram, RBC histogram.

Results produced every 45 seconds in direct sampling mode.

* - USA : For Research only

Sample Handling

Blood samples must be collected into EDTA tubes. Depending on how the Excell 22 is operated, the system requires:

Direct mode: 180 μL whole blood.

Sample saver mode: 80 μL whole blood.

Automatic sampler** 180 μL whole blood.

** An optional 30 position autosampler is available. The Autosampler mixes, reads the barcode (if fitted with the optional barcode reader), pierces the cap and automatically aspirates the sample.

Dilution System

In order to maximize performance and reduce instrument down time a high precision ceramic shear valve and computer controlled reagent dispenser is used. Automatic rinse inside and outside of the sample probe prevents carryover and reduces risk of transmission of blood borne pathogen to operators.

Sensors: Laser diode illuminated flow cytometer with three, solid state sensors and one PMT tube for WBC differential.

WBC aperture: 100 μm diameter x 75 μm length.

RBC/Plt aperture: 78 μm diameter x 55 μm length. The Plt/RBC channel features the patented "von Behrens" Silencer which eliminates RBC recirculation that interferes with

low Plt counts in conventional aperture designs.

Dimensions (analyzer): 41.9 cm (16.5 in) Height x 58.0 cm (22.8 in) Width x 58.0 cm (22.8 in) Depth. System Weight is 32.5 Kg (72 lb).

Display: SVGA color monitor.

Power: The system works on 90 to 250 VAC 47 to 63 Hz, with no manual adjustment required.

Operating conditions: The Excell 22 can work in wide range of working environments with a temperature range of 15 °C to 32 °C (60 °F to 90 °F) and relative humidity of 10% to 90% non-condensing.

Ports: Two RS-232 serial ports and one parallel printer port (Centronics).

Printer: Windows 2000™ supported, color or B/W printer can be used.

