CellaVision™ DM96

Automated Digital Cell Morphology

Efficiency, Proficiency, Connectivity and Collaboration

Automatic cell location and pre-classification improves resource utilization, the quality of results and employee satisfaction. One particular labor benefit is that highly skilled medical technologists are able to spend more time on difficult cases that require careful analysis and assessment. The ability to archive images enables hospitals to look at previous cell images for long term case management.

Efficiency

Automatic cell location and pre-classification, along with unique cell views, reduce the time spent performing differentials, training new techs and monitoring proficiency.

Proficiency

CellaVision DM96 allows different technologists to perform differentials at the same high level of consistency. The system provides traceability of results at the individual cell level.

Connectivity

Multiple Remote Review Stations enable supervisory review, inter/intra-lab comparison and the opportunity for real-time collaboration with Pathology.

Collaboration

As a result of network integration, the CellaVision DM96 will provide new value to clinicians, saving them time with remote, real-time access to a patient's image history.
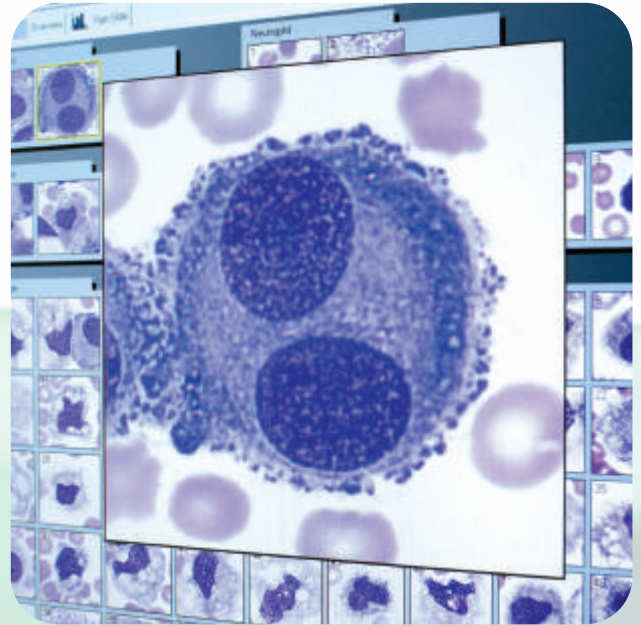
Images from the pre-classified cells can be magnified for detailed analysis.

The DM96 enables laboratories to analyze blood and body fluids, including cerebrospinal, synovial and pleural fluids, in a safe, efficient and comfortable way.

Break the cycle—find the perfect workflow. The DM96 is a digital morphology system for performing:
 - Automatic identification of WBCs in peripheral blood and body fluids smears
 - Pre-characterization of RBC morphology
 - Platelet estimation

The system's automation significantly reduces differential turnaround time, while increasing collaboration between consultants.

Standardized Results

Utilizing CLSI guidelines in conjunction with a neural network trained on thousands of cells identified by a group of global experts, the CellaVision DM96 offers an opportunity to improve efficiency and consistency. With continued cost constraints and the shortage of skilled technologists, especially in differential analysis, the CellaVision DM96 permits technologists to use their skills to the best benefit of the laboratory.
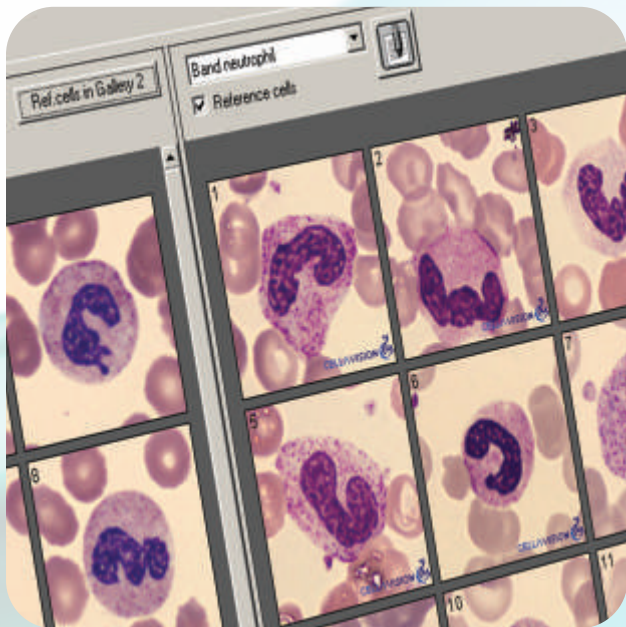
Laboratory Benefits

Maintain high quality by providing standardization and quick access to differential images

Access an on-board, customized, reference cell library and view cell classes side by side

Complete traceability of results at the individual cell level

Permanently store images - access a patient's image history

Remotely share images via tele-hematology. The CellaVision DM96 can share databases with other DM analyzers, installed locally or at a remote location, allowing centralized database management. By using the CellaVision Remote Review Software it is possible to transfer digital images and results within and between laboratories. The software allows for strengthened competence, qualified review and shorter turnaround times for complicated patient cases.

Find results quickly and easily using multiple criteria

|				Order ID ▽	Patient ID	First Name	Last Name	Analyzed	Signed by
+	⑮			20	1225768925	John	Doe	2004-02-02 12:08	
	⑮			19	123476598	Michael	Hall	2004-02-02 12:06	
	⑮	⊕	⊞	18	981234567	Josie	Clearmount	2004-02-02 12:04	
	⑮			16	987612345	William	Smith	2004-02-02 12:01	
	⑮	⊕		15	987651234	Claire	Swanson	2004-02-02 11:59	
+	⑮			13	987654312	Joe	Ramone	2004-02-02 11:56	
	⑮		⊞	12	987654321	John	Smith	2004-02-02 11:54	
	⑮			11	123456789	Tom	Johnson	2004-02-02 11:52	

Ability to search the database by 15 criteria including: doctor, technologist and comments

Diff at a Glance

Quickly screen for abnormalities, allowing fast confirmation of the CBC analyzer's results. When classifications need to be changed, cells can be edited into the appropriate cell class.

Enhance blood film review and make more efficient use of experienced morphologists' time. Screen for abnormalities to allow fast confirmation of the CBC analyzer's results.
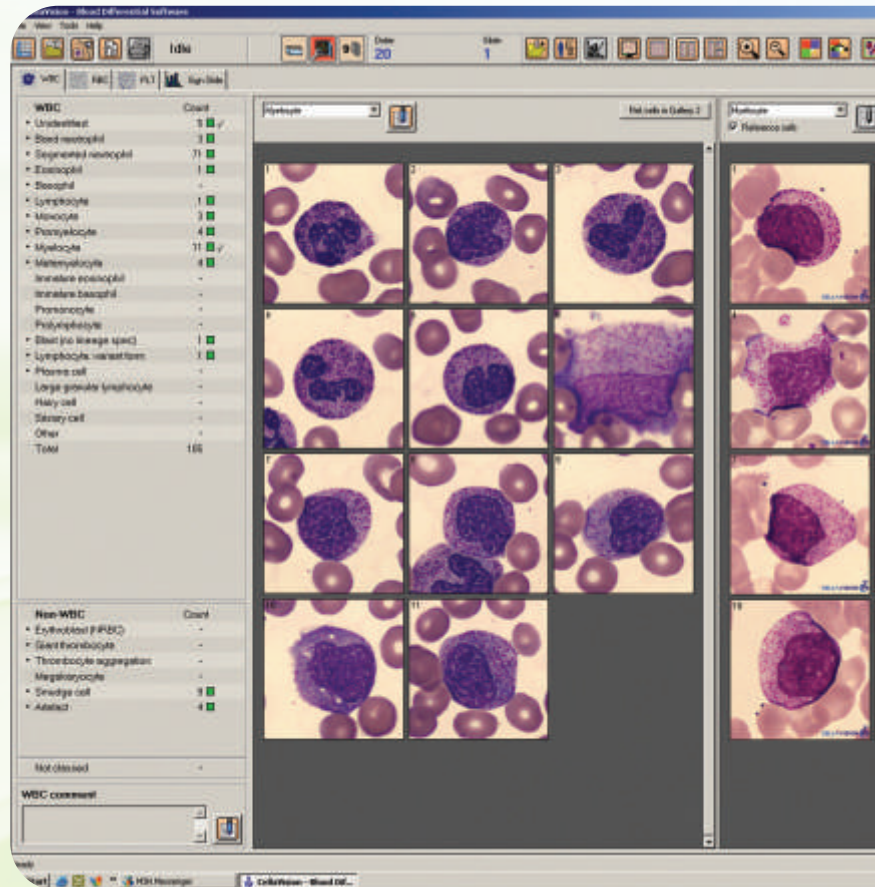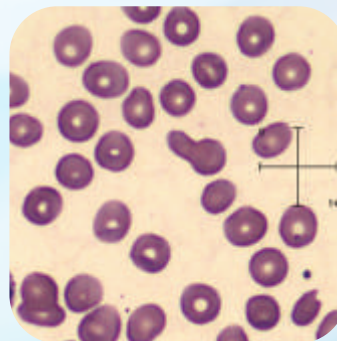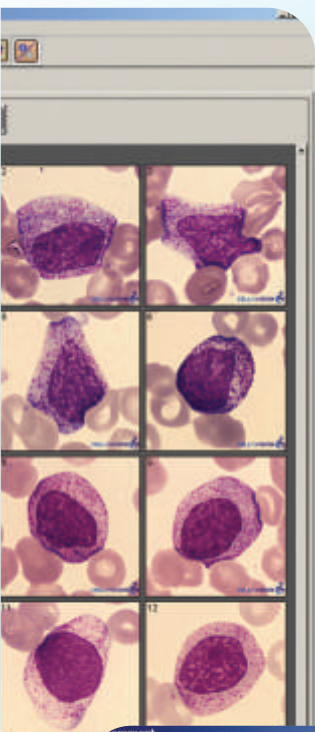

Confirms cell counter results in seconds

WBC Cells

- Cells are grouped with like cells to facilitate verification

- Cells are pre-classified into 18 classes:
  - **Leukocytes:** Segmented Neutrophils, Band Neutrophils, Eosinophils, Basophils, Lymphocytes, Monocytes, Blasts, Promyelocytes, Myelocytes, Metamyelocytes, Variant Lymphocytes, Plasma Cells, Unidentified

  - **Non-Leukocytes:** Smudge Cells, Artifacts, Giant Platelets, NRBCs, Platelet Clumps

- Handling leukopenic samples is more efficient due to the ability to merge cells from multiple slides on a single patient

WBC	Count	%	x10e9/L	
Unidentified	-	-	-	
Band neutrophil	3	2.9	0.1	
Segmented neutrophil	62	59.6	1.2	
Eosinophil	-	-	-	
Basophil	-	-	-	
Lymphocyte	20	19.2	0.4	
Monocyte	16	15.4	0.3	
Promyelocyte	-	-	-	
Myelocyte	-	-	-	
Metamyelocyte	-	-	-	
Immature eosinophil	-	-	-	
Immature basophil	-	-	-	
Promonocyte	-	-	-	
Prolymphocyte	-	-	-	
Blast (no lineage spec)	-	-	-	
Lymphocyte, variant form	3	2.9	0.1	
Plasma cell	-	-	-	
Large granular lymphocyte	-	-	-	
Hairy cell	-	-	-	
Sézary cell	-	-	-	
Other	-	-	-	
Total	104	100	2.0	

RBC Cells

- RBC Morphology is automatically pre-characterized for polychromasia, hypochromasia, aniso-, micro-, macrocytosis and poikilocytosis

- Multiple RBC fields can be scanned as if on a virtual microscope

- A dynamic micrometer facilitates additional RBC measurements

- Provides functionality for performing platelet estimates

Easy Access to Powerful Features

- Add pre-coded or free text comments to any slide, cell class or specific cell

- Attach any number of cells and send them via email

- Customize the coloration and brightness of the cell images in your personal profile

Remote review networking for clinicians - utilizing the power of integration

Enables sharing of images for consultation, any time anywhere.
The DM96 provides your hematology laboratory with the tools to serve the needs of multiple facilities, while providing added value to the various departments within your organization.

Pathology

Oncology

Utilizes your existing LAN, WAN and VPN infrastructure

CellaVision DM96 - The heart of your network sending information where and when it is needed

Pediatrics

Value-added:

For Clinicians - Reduce time for consultation. Clinicians and pathologists save time by accessing their patient's images remotely. Morphology expertise can be centralized, resulting in staffing flexibility at remote locations.

For Technologists - Save time searching for requested smears. Multiple systems can be run from a central location eliminating sample transportation and reducing TAT. In real time, multiple cell images can be easily e-mailed to colleagues anywhere in the world without interrupting your workflow.
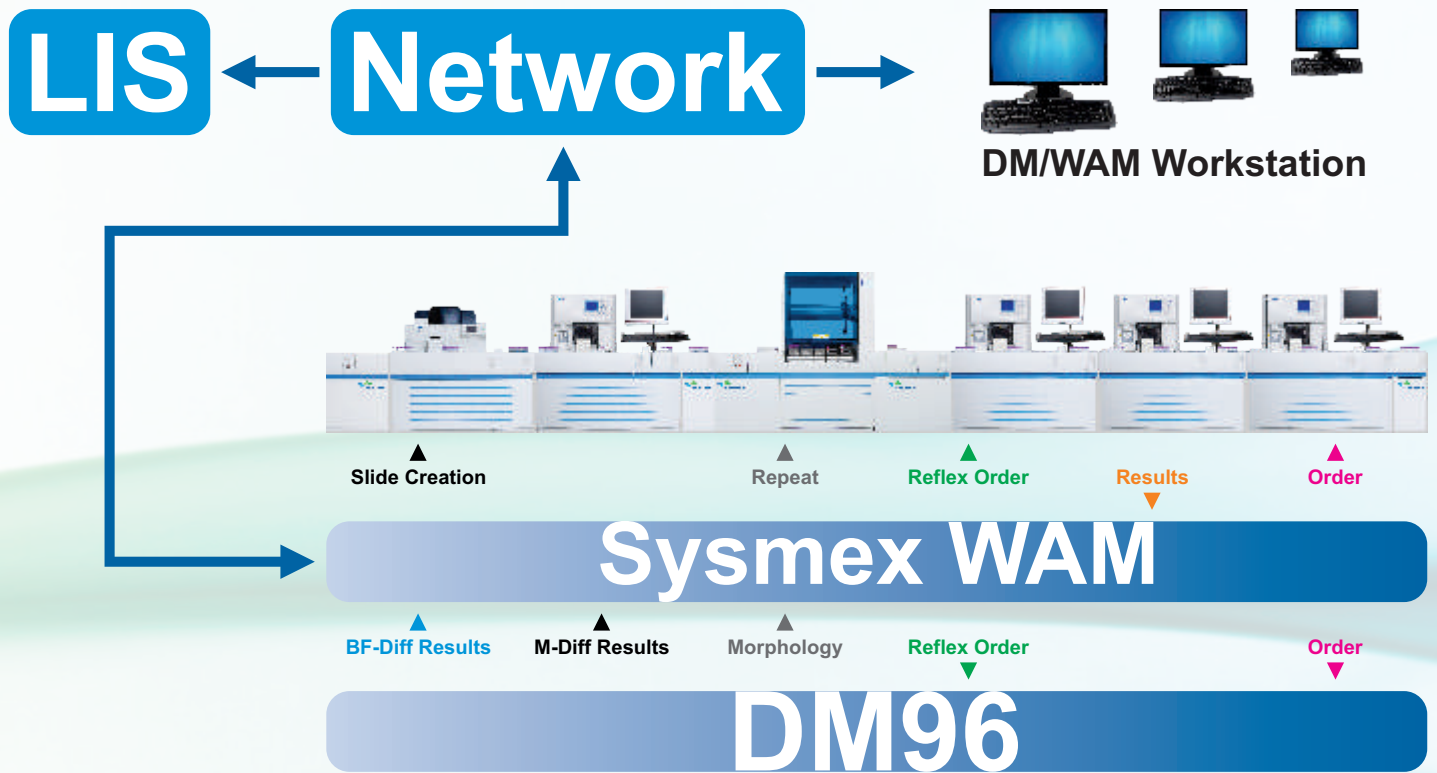
Optional WAM System – enables results-processing / reflexing rules and seamless data integration

Sysmex WAM™ (Work Area Manager) - Designed for the high volume hematology laboratory, WAM delivers an advanced specimen process management system.

- Consistent and standardized rules
- Consolidates complex rules related to the criticality of results
- Patient delta-checking – two years of on-board data

A specimen-centric approach empowers WAM to deliver seamless integration with your Sysmex Intelligent Automation solution. WAM's rules-based, expert technology gives you unprecedented efficiency and control over workflow for advanced process control.

LIS ← **Network** → **DM/WAM Workstation**

| Slide Creation | Repeat | Reflex Order | Results | Order |

Sysmex WAM

| BF-Diff Results | M-Diff Results | Morphology | Reflex Order | | Order |

DM96

Sysmex WAM connects your remote labs using one central repository for hematology results. This gives your lab both control of the information and distributed processing capability. WAM easily interfaces to your LIS for demographics, orders results, repeats or add-on tests. Even if the LIS is down, WAM keeps your hematology department up and running.

Optional Functionality

Now body fluids and blood smears can be analyzed on the CellaVision DM96 at the same time, either batched in blue or orange magazines or in a random access mode when interfaced to your Sysmex WAM or your LIS.

Body Fluid Option
Key features & benefits

- Designed to utilize standard cyto-centrifuged slides
- Pre-classification of seven WBC classes
- View cell classes side by side or all cells in a full screen view
- Digital scan of entire sample area
  - Navigation in a digital sample overview
  - Available in 10x or 50x magnification
- Regions of Interest:
  - Tag interesting areas for Pathology review and for educational purposes
  - Export your tagged areas into presentations and educational material
- Add pre-coded or free text comments to any slide, cell class or specific cell
- Permanently store images — access a patient's image history

Images from the pre-classified cells can be magnified for detailed analysis.

Digital Scanning Option*
Key features & benefits

- Enhance, annotate and share digital slides with your students or colleagues

- Digital scan of desired sample area:
  - Navigation in a digital sample overview
  - Available in 10x or 50x magnification

- Regions of Interest (ROI):
  - Tag interesting areas for review or for educational purposes
  - Export your ROI into presentations and educational material
 - Long term storage of all images
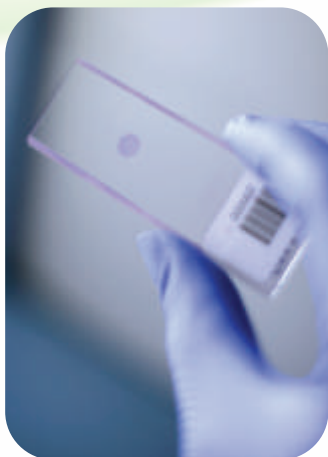
Digitize and annotate desired areas of interesting specimens within hematology, pathology and cytology.
Enable your laboratory to utilize the power of telepathology.

*For research and education only. Part of CellaVision® Peripheral Blood Application, software v. 2.1.

Enhance Functionality

Enables the CBC results stored in WAM or LIS to be populated onto the main screen (Peripheral Blood Samples Only)
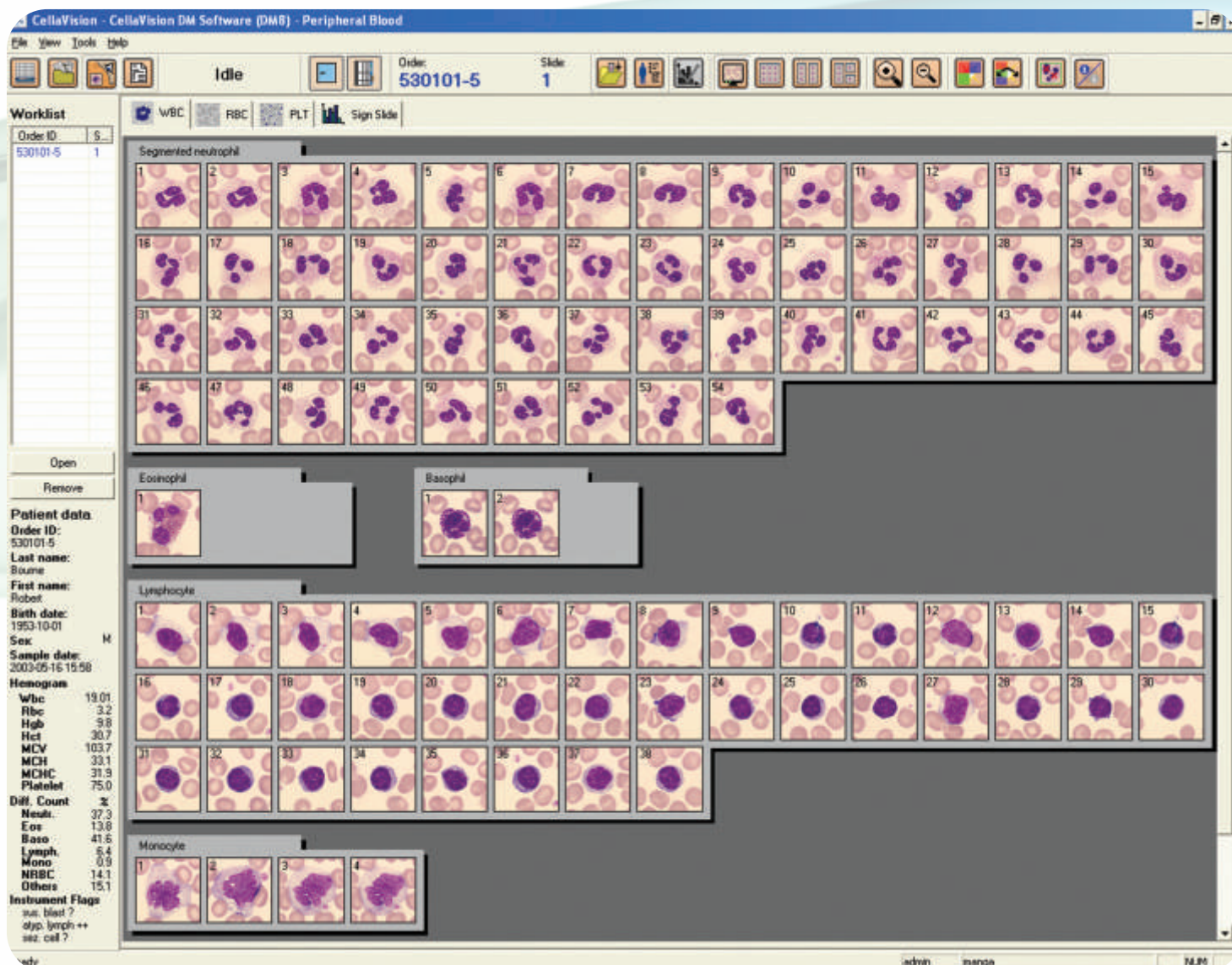
Archiving Settings by Database

- Each database established may have its own specific archive settings
- Creating a new database now allocates optimal 20 GB
- Database query updated to address:
  - Body Fluids
  - Extracts the serial number of the analyzer on which the slide was scanned
- Enabled for SNCS™ monitoring

DM System Software v. 2.1 is included with the purchase of the Body Fluid Application

Application Specification
Peripheral Blood

Slide Methods (Wedged)
Automated slide maker and stainers
HemaPrep® /MiniPrep® automated bloodsmearing device
Manual smears

Stains
Romanowsky stains (May Grünwald/Wright/Giemsa)

Number of Cells Counted
User Definable

Quality Control
Built-in QC module for verification of the cell location accuracy

Throughput - Peripheral Blood
Up to 35 slides/hour for complete differential (100 WBC+RBC+PLT)
Up to 60 slides/hour (RBC and/or PLT only)

Digital Slides
Up to 30 slides/hour for 10x10 mm in 10x
Up to 2 slides/hour for 10x10 mm in 10x + 50x

Slide Image Size - Peripheral Blood
100 WBCs: ~5 MB
100 WBCs + RBC: ~6 MB
100 WBCs + RBC + PLT: ~6 MB

Digital Slides
10x10 mm in 10x: ~45 MB
10x10 mm in 10x + 50x: ~500 MB

Result Parameters
WBC pre-classification: Segmented and Band Neutrophils, Eosinophils, Basophils, Lymphocytes, Monocytes, Blast Cells, Promyelo cytes, Myelocytes, Metamyelocytes, Variant Lymphocytes, Plasma Cells and Unidentified
Non WBC pre-classification: Smudge, Artifacts, Giant Platelets, Platelet Clumps, Erythoblasts (NRBC)
RBC pre-characterization: Automated pre-characterization of aniso-, micro- and macrocytosis, polychromasia, hypochromasia and poikilocytosis is performed in an overview image corresponding to eight high power fields (100x)
PLT estimate: The graphical user interface allows manual estimation of the PLT concentration, based on eight high power fields (100x)

Application Specification
Body Fluids

Slide Preparation Methods	Standard cytocentrifuge preparation Default settings for Shandon™/Wescor™/Statspin™
Stains	Romanowsky stains (May Grünwald/Wright/Giemsa)
Number of Cells Counted	User definable
Quality Control	Built-in QC module for verification of the cell location accuracy

Throughput	Based on 6 mm sample area
	Up to 25 slides/hour for differential
	   (100 WBCs + 10x)
	Up to 7 slides/hour for differential
	   (100 WBCs + 10x + 50x)

Slide Image Size	Based on 6 mm sample area 100 WBCs: ~5 MB 100 WBCs + 10x: ~10 MB 100 WBCs + 10x + 50x: ~150 MB

Result Parameters	WBC pre-classification: Neutrophils,
	   Eosinophils, Lymphocytes,
	   Macrophages (including Monocytes),
	   Other (Basophils, Lymphoma cells,
	   Atypical lymphocytes, Blasts and
	   Tumor cells) and Unidentified.
	Non WBC pre-classification: Smudge
	   cells and Artefacts

Optional Software	CellaVision® Body Fluid Application CellaVision® Remote Review Software

Recommended PC Specifications	64 MB graphics RAM with Open
	   GL 1.2 support
	Ethernet adapter 10/100 Mbps
	512 MB RAM
	100 MB free disk space
	CPU Pentium® IV CellaVision
	   Competency Software

Accessories	Barcode labeled slide magazines Immersion oil QC barcode labels
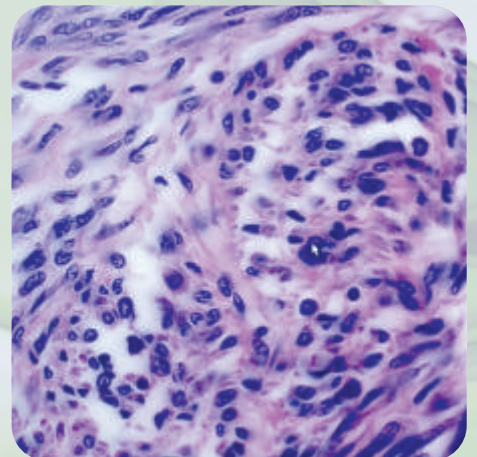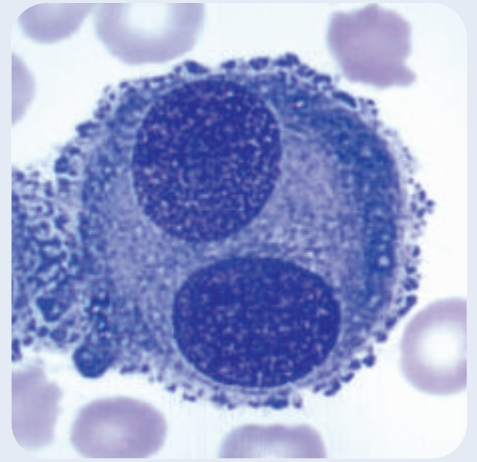
Instrument Specifications

System Components	PC with Windows XP Slide Scanning Unit CellaVision® DM Software (U.S. Patent No. 6268611 and 6341180)
Electrical Specifications All System Components	Voltage input: (115 VAC for US) Current input: (8A for US)
Size (W x D x H)	530 x 600 x 630 mm 20.9 x 23.6 x 24.8 inches
Slide Handling	Continuous feed, walk away; up to 96 slides (8 magazines x 12 slides / magazine) Requires barcode labeled slides with clipped/round corners
Oil Dispensing	Automatic
Archiving of Results and Images	Supported media: CD-R/CD-RW and LAN
Storage Capacity	Primary storage: On local hard drive 20 GB Secondary storage: Unlimited when transferred to external storage media via LAN
Printer Support	Laser/inkjet printers supported by Windows XP Communications Bi-directional LIS support, ASTM Ethernet 10/100 Mbps E-mail

Archiving Settings by Database	Each Database established may have it's own specific archive settings
	Creating a new database now allocates optimal 20 GB
	DB Query updated to address:
	  - Body Fluids
	  - Extracts the serial number of the analyzer on which the slide was scanned
	Enabled for SNCS™ monitoring

Accessories	Barcode labeled slide magazines Immersion oil QC barcode labels

ISO 9001:2000 SGS