Automated Digital Cell Morphology System

DI-60™

Seamless integration

sysmex | Lighting the way with diagnostics

Reshaping hematology

Scalable automation and on-board slide processing

The Sysmex DI-60 Automated Digital Cell Morphology System provides complete automation of your manual WBC differential process. With the DI-60, you can integrate CBC analysis, slide preparation, slide staining and digital image pre-classification of cells in a complete workcell. Now you can free highly skilled medical technologists to spend more time on the difficult cases that require careful analysis and assessment. Automated cell image analysis provides standardized differential results and extensive network connectivity to enhance the level of service your laboratory provides to clinicans and patients.

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

The automatic cell location and pre-classification functions of the DI-60 improve the process of performing differentials, resource utilization, and clinical collaboration. Your assurance of quality can be enhanced with complete traceability of patient results down to the level of each individual cell image. The DI-60 compact integrated platform offers:
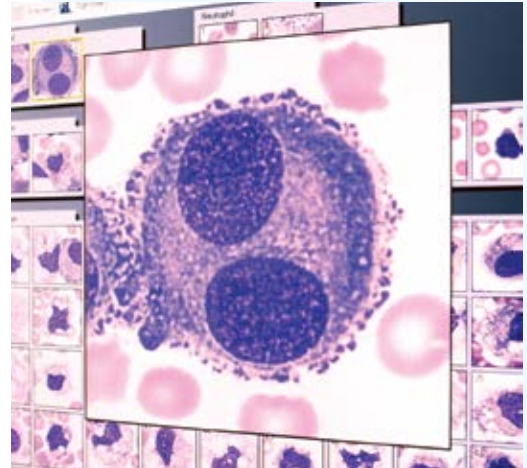
Productivity

- Improve differential turnaround time significantly with the benefit of automatic cell location and pre-classification.

- Handle leukopenic samples efficiently with the ability to merge cells from multiple slides on a single patient.
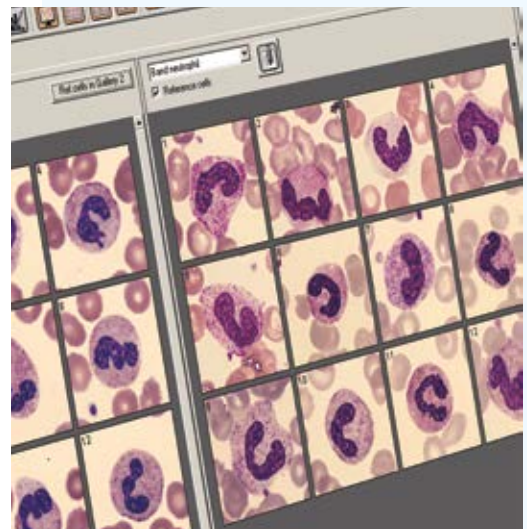
Collaboration

- Access archived cell images to simplify differentials and in-lab training.

- Collaborate with physicians by sharing cell images via remote connectivity.

Adaptability

- Switch from testing blood to body fluids, including cerebrospinal, synovial and pleural fluids, in a safe, efficient and comfortable way.

- Select display configurations that perfectly fit your laboratory work flow demands.

Utilize the power of integration

Integrate information within the healthcare system

Remote review networking for clinicians enables you to share images for consultation, anytime, anywhere. A network of DI-60s gives your laboratory system the tools to meet the needs of multiple labs and departments in your healthcare enterprise. By using the Remote Review Software, you can transfer digital images and results between laboratories or anywhere within your healthcare network. The software and collaborative sharing of images strengthens competence and shortens turnaround times, even for complicated patient cases.
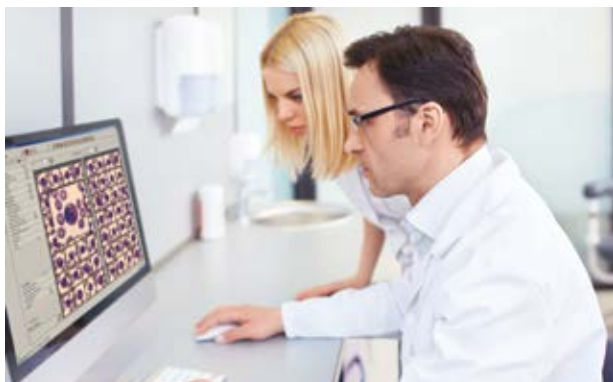
For Clinicians: Reduce time for consultation by enabling clinicians to access patients' cell images remotely.

For Managers: Enable experienced technologists to consult on slide reviews in real time, resulting in greater flexibility in staffing remote labs. Run multiple systems from a central location to eliminate sample transportation and reduce turnaround time.

For Technologists: Save time handling glass slides. Cell images can be easily emailed in real time to colleagues anywhere in the world without interrupting your workflow.

## Integrate hematology workcell components to meet your lab's needs

The Sysmex DI-60 can be connected to the Sysmex XN-9000™/XN-9100™ or XN-3000™/XN-3100™ hematology systems to create a fully integrated automation solution that's perfect for your lab. Each configuration allows hands-free sample processing that includes CBC, automated slide making/staining and digital scanning with cell pre-classification.

Optional integration with Caresphere™ Workflow Solution (WS) conveniently consolidates the sample data from your Sysmex hematology analyzer and the DI-60. Caresphere WS provides a standardized approach to samples that require further review. Management reports are included to help improve the quality and efficiency of your hematology laboratory.

An integrated process designed for how you work

The DI-60 allows you to quickly screen samples for abnormalities, providing fast confirmation of the results from your hematology analyzer.

1. Simply load samples onto the XN-Series analyzer. After analysis is complete, slides are automatically prepared on specimens as needed. flagged samples are automatically reflexed to have slides prepared and stained.

2. Slides will automatically be routed to the DI-60. Cell images are captured and displayed in groups according to cell type for verification.
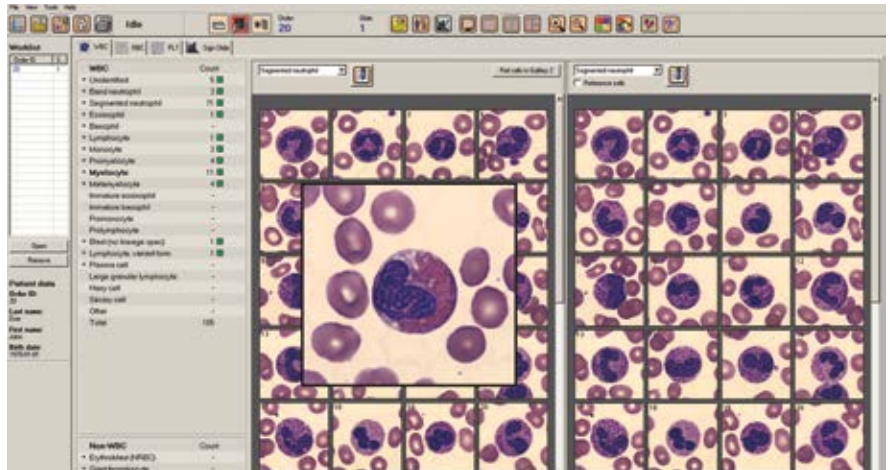
3. Edit WBC, RBC and PLT categories if a cell classification needs to be changed. Standardization and speed can be enhanced by comparing unusual or abnormal cells to images in the customized, on-board reference cell library.

Enhance the DI-60 differential process your way:

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

• Collaborate in real time, email cell images to reviewers or archive cell images for future reference.

4 EASY STEPS GET YOU TO STANDARDIZATION AND REAL TIME CONSULTATION

1. Load samples on XN-Series analyzer – reduce sample handling.

2. Slide preparation and digital imaging automatically reflex when indicated.

3. Review three cell categories – edit only as needed.

4. Slide images are available through Remote Review Software for real time consultations.

WBC

White blood cells

Cells are pre-classified into 18 classes:

- **Leukocytes:** Segmented Neutrophils, Band Neutrophils, Eosinophils, Basophils, Lymphocytes, Monocytes, Metamyelocytes, Myelocytes, Promyelocytes, Blasts, Variant Lymphocytes, Plasma Cells, Unidentified.

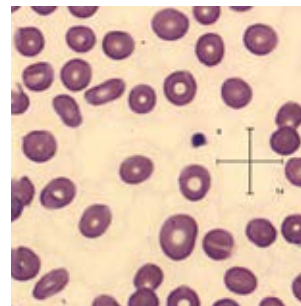- **Non-Leukocytes:** Smudge Cells, Artifacts, Giant Platelets, NRBCs, Platelet Clumps.

RBC

Red blood cells

RBC morphology can be characterized at the click of a button

- Polychromasia, hypochromasia, anisocytosis, microcytosis, macrocytosis and poikilocytosis are automatically pre-characterized.

- Abnormal cells, including target cells, sickle cells, schistocytes, helmet cells, spherocytes, etc., can be graded by the technologist.

- A dynamic micrometer facilitates additional RBC measurements.
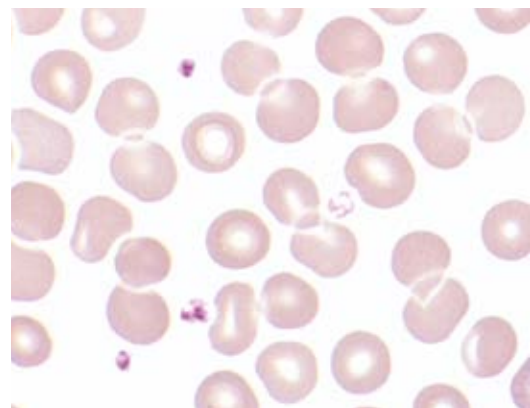

PLT

Platelets

Counting Platelets

- The platelet estimate is based on the number of platelets that are manually counted in the image by the user. From this number, the platelet count can be calculated.

Estimating Platelets

- When reporting a platelet estimate, the software allows the user to select from decreased, increased or adequate.

Optional DI-60 Remote Review Software

By using the DI-60 Remote Review Software, clinicans can access slide images from their office, clinic or home. In addition to current cell images, access is available to a patient's historical images for comparison.

When used on the laboratory's network, the software can significantly enhance workflow and labor by allowing centralized slide review or consultation.

Product information

DI-60 Remote Review Software from CellaVision® provides users access to analyzed slides from anywhere. This allows for multiple work-stations within the lab, as well as real-time consultation by a supervisor or clinician from within or outside the hospital to view images generated by the instrument software.

Remote Review Software can be installed locally on a computer via a physical USB key or using a Citrix® XenApp™ server.

DI-60 Remote Review Software offers network access to the Sysmex DI-60 computer system.

Key features

- Verify, review and collaborate on blood and body fluid slides remotely through the CellaVision Remote Review Software.

- Access patient's cell images, both current and historical, remotely.

- Identify and comment on any number of tagged regions of interest when reviewing body fluids or other specimens.

- Collaborate within/between hospitals in real time.

- View cell counter, flags and images.

- Remote Review Software can be installed locally with a single workstation hardware license or licenses registered with a digital license key with 5, 25 or 75 concurrent users.

Technical Specifications	
Recommended PC Specifications for Local Installation	• Windows 10 • 1 GB RAM • 1 GB Disk space • 256 MB Graphics RAM • 1 vacant USB port
Monitor Specifications	• 24 inch or larger • 1920 x 1080 pixels • IPS or PLS Screen Technology • 16:9 Aspect ratio
Supported Instruments with Remote Review Software	• Sysmex DI-60 • CellaVision DM9600 • CellaVision DM1200 • CellaVision DC-1 NOTE: All instruments must be on the same version of software running on the system computer.
Supported Applications	• Peripheral Blood Application • Body Fluid Application • Advanced RBC Application
DI-60 Remote Review Software	• Single Workstation on LAN • Part number: AG516335
Citrix® XenApp™ server Specificiations	• Windows® Server 2016 (version 6.0.4 or higher) • 6.0, 6.5 and 7 (not just 7.0) XenApp Versions • 1 GB Diskspace • Minimum 16-bit color depth

Optional DI-60 Body Fluid Application

This application requires an optional purchase

Product information

Save valuable morphologist's time while improving the expertise of your entire staff. With the Body Fluid Application software, body fluid samples can be analyzed on the DI-60 by placing cytocentrifuge-prepared smears directly onto the connection feeder. Results will transmit through the bidirectional interface to Caresphere WS or your LIS.

How does it work?

• The software extracts cell features from digital images and delivers a pre-classification of cells using innovative artificial neural network technology.

• The pre-classification is then reviewed and verified by a qualified laboratorian or clinician.

Why DI-60 Body Fluid Application?

The CellaVision Body Fluid Application offers an easier way to examine and review body fluid preparations:

• Automated pre-classification speeds up the review process

• Standardized operational procedure and validation process provide consistency

• Innovative functionalities and integrated tools promote analysis accuracy

Key features

• Utilizes cyto-centrifuged prepared slides

• Pre-classifies cells into seven WBC categories

• Displays cell classes side by side or in full screen view

• Digitally scans entire smear area

  - Simple navigation in sample overview area

  - Available in 10x or 10x+50x magnification

• Allows users to highlight regions of interest

  - Tag areas for pathology review or educational purposes

  - Export tagged areas into presentations

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

• Permanently store images and access patient's image history

Technical Specifications	
Slide Preparation Methods	• Standard cytocentrifuged preparation • Default settings for Shandon™/Wescor™/Statspin™
Stains	• May Grünwald Giemsa, Wright Giemsa, Wright
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 Artifacts • User has the ability to add additional cell categories for manual re-classification
Analyzers Supported	• Sysmex DI-60
Ordering Information	• This software application is an option for the DI-60 Automated Digital Cell Morphology System • Part Number AG241722

The DI-60 changes the way hematology is performed

Sysmex's approach to integrated, scalable automation allows flexibile customization to find the perfect fit for your lab's testing needs.

DI-60

The DI-60 can be integrated with the XN-3100 on wagons as a floor model work cell.

DI-60

The DI-60 can be integrated with any Sysmex XN-9100 to create a freestanding work cell configuration.

DI-60 Specifications

Slide Preparation Methods	Sysmex SP-50™ • Manual preps • Cytospin slides
Stains	Romanowsky stains (May Grünwald Giemsa, Wright Giemsa, Wright*) *Wright stain needs local adjustment to achieve best results.
WBC Classification **WBC**	Segmented and band neutrophils, eosinophils, basophils, lymphocytes, monocytes, blast cells, promyelocytes, myelocytes, metamyelocytes, variant lymphocytes, and plasma cells
Non WBC Classification	Smudge artifacts, giant platelets, platelet clumps, erythroblasts (NRBC), unidentified
RBC Pre-characterization **RBC**	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 **PLT**	The graphical user interface allows manual estimation of the PLT concentration based on eight high power fields (100x)
Storage Capacity	Primary storage: On local hard drive up to 4,000 slides (20 GB) Secondary storage: Unlimited when transferred to external storage media

Throughput	DI-60 system
	• Peripheral Blood
	    • Up to 30 slides/hour (100 WBC + RBC + PLT)
	• Body Fluid – based on 5x5mm area
	    • Up to 40 cytospin slides/hour (100 WBC. 10x Overview)
	    • Up to 5 cytospin slides/hour (100WBC. 10x + 50x Overview)
	    • Body Fluids – based on 6 mm sample area
	• 10x + 50x Approximately 12 minutes for a 5x5 mm area. 10 MB
	• 10x Approximately 1.5 minutes for a 5x5 mm area. 130 MB
	• Depending on WBC concentration, number of non-WBCs and the quality of the smear
	NOTE: Values provided are approximate due to WBC concentration, number of non-WBCs and quality of the smear.

Quality Control	Cell location accuracy test for the verification of the hardware and stain quality

Options

Optional Software	DI-60 Remote Review Software DI-60 Body Fluid Application Advanced RBC Application
Caresphere Workflow Solution (WS)	Caresphere Workflow Solution (WS) is software designed to assist in automating decision-making tasks. • HITRUST CSF®-certified • Custom workflow dashboard • Sysmex hematology rules package • Result auto-verification • Operator alerts based on customer standard operating procedures are displayed for each triggered rule • Critical and delta result management