

Pentra **DX** Nexus

Process efficiency in Hematology



Pentra DX Nexus

Be productive and flexible

- 120 samples per hour
- 28 parameters
- Automatic reflex testing
- Automatic validation of results
- Integrated cytology atlas
- SPS evolution

• Reliability

• Ergonomics



Comfort

- Large color touch screen.
- Intuitive interface with virtual keyboard.



Ergonomics

- Smart access to all functionalities.
- Enhanced visibility.
- Comprehensive icons.



External links

- USB port for multi-data exchange and hardware connection.



Differentiation and quantification of hematopoietic populations using 6 analytical systems

> Erythropoiesis

3 channels: erythroblasts / reticulocytes / erythrocytes

> Thrombopoiesis

1 channel: thrombocytes

> Leukopoiesis

3 channels: leukocytes / basophils / erythroblasts

Hematopoiesis through
Pentra DX Range
SCIENTIFIC BOOK



Concentrated Technology

5 recognized measurement principles included on a single analyser.

Reference methods	CBC	DIFF	RET	NRBC
Impedancemetry	•	•	•	•
Flow cytometry		•	•	•
Fluorometry			•	•
Cytochemistry		•		•
DHSS		•	•	

● In the heart of hematopoiesis

● Comfort



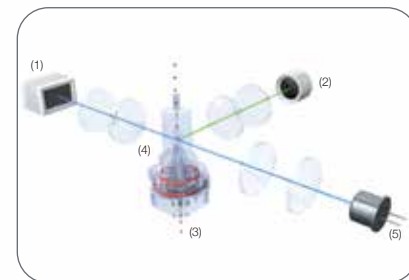
Quality

- Complete traceability for each run including identification, lot number and expiration date on reagents and controls.



Compatibility

- Compatible racks with most pre-analytical systems and post analytical systems.
- Two models of racks.



Environment

- New laser source require less space, reducing heat and noise.
- (1) Laser LED
(2) Photomultiplier
(3) Hydrofocalisation
(4) Impedancemetry
(5) Optical measurement

DHSS Concept

Flow cytometry

Injection of the sample prepared in a double hydrodynamic flow cytometer (HORIBA Medical patent), and determination of the cell complexity by measuring the absorbance of a polychromatic light source, or the fluorescence by fluorocytometry (Diode type laser at 488 nm wavelength).

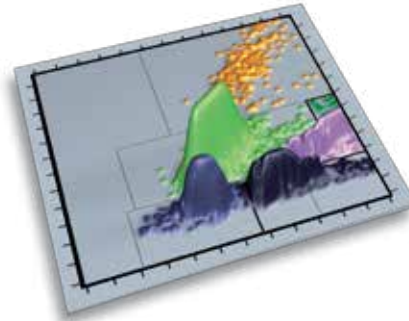
Cytochemistry

Incubation of the sample at a regulated temperature and cells stained with Chlorazol Black. This reagent stains specifically leukocyte cytoplasm, granules, and nuclei.

LMNE matrix

Full leukopoiesis analysis:

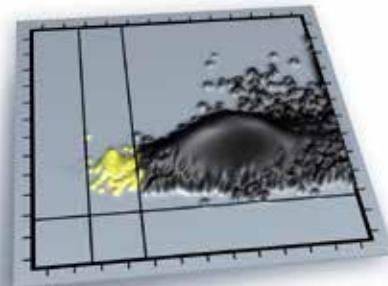
- Mature populations 5 DIFF
- Reduced slide review
- Diagnostic and follow-up tool for rapid decision-making



Erythroblasts

Fluorescence-based count:

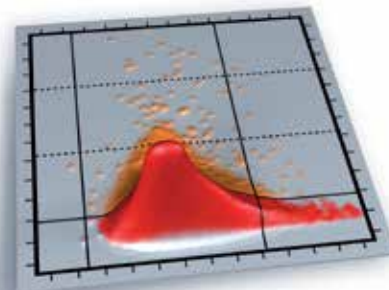
- Erythroblast analysis in routine or reflex mode based on:
 - internal laboratory rules
 - detection alarms
 - patient demographics...
- Use of Thiazole Orange fluorochrome
- Double Hydrodynamic Sequential System (HORIBA Medical Patent)



Reticulocytes

Differential diagnosis of anemia:

- Classification and monitoring of anemia based on the Reticulocyte count and the CRC (Corrected Reticulocyte Count)
- Follow-up of iron-deficiency anemia based on the MRV (Mean Reticulocyte Volume)
- Detection and monitoring of the erythropoietic response according to three stages of maturation: RET High, RET Medium, RET Low and maturation parameters (IRF, MFI, and MRV)



SPS Evolution

Perfect standardization of blood smears

- **Integrated slide-maker***
120 slides per hour
Fully automated and secured process
- **Choice of staining protocols**
May-Grünwald Giemsa, Wright, Wright Giemsa, etc.
- **Sampling volume: 50 µl of whole blood (additional)**
On primary closed tube
- **Positive identification**
Barcode reading
Patient data printed automatically on slide
- **Smearing flexibility**
User-defined smearing profiles based on the laboratory's own rules

* Optional module



Expert validation station

Results validation

- **Full management of samples**
Alarms triggered according to patient profile
Delta check
Programmable rerun and reflex test rules
- **Automatic validation**
Standardization of Lab rules (integrated catalog)
International recommendation rules for Hematology review (ISLH, Laboratory Hematology 11:83-90 © 2005 Carden Jennings Publishing Co., Ltd. doi: 10.1532/LH96.05019)
integrated in routine
Automatic validation based on rules, flags, patient history, etc.
- **Integrated cytology atlas: Hematovision**
Aid to accurate diagnosis support
Excellent education tool
- **Quality assurance**
Control blood management
Graphical and table statistics
XB management
QCP Export (Quality Control Program)
Complete traceability (reagents & controls) for each run



Pentra DX Nexus

Technical Specifications



PHYSICAL SPECIFICATIONS

Dimensions & Weight

	Height	Width	Depth	Weight
Without SPS	73 cm	120 cm	55 cm	110 kg
	28.7 in	47.2 in	21.6 in	242.5 lb
With SPS	73 cm	170 cm	55 cm	170 kg
	28.7 in	66.9 in	21.6 in	374 lb

Printer

Laser

Throughput

Up to 120 samples/hour in CBC, DIFF, CBR, SPS modes
Up to 60 samples/hour in DIR, ERB, CBE modes

Operating temperature

16 - 34°C (61 - 93°F) room temperature

Specimen volume

Manual cycle 130 µL
Automatic cycle 200 µL

Power requirements

Power supply from 100 VAC to 240 VAC (± 10%)
50 Hz to 60 Hz
Power consumption Pentra DX120 900 VA

Reagents

ABX Diluent
ABX Lysebio (cyanide free)
ABX Fluocyte
ABX Leucodiff
ABX Basolyse
ABX Cleaner

PARAMETERS

CBC

WBC RBC HGB HCT MCV MCH MCHC RDW PLT MPV

Differential Leukocytes

NEU# & NEU% LYM# & LYM% MON# & MON% EOS# & EOS% BAS# & BAS%

Reticulocytes

RET% RET# RETH% RETM% RETL% IMM% CRC% IRF% MRV

Erythroblasts

ERB% ERB#

SOFTWARE SPECIFICATIONS

Data Processing

Color LCD: 12.1 in
Capacity: 90,000 results
Operating System: Windows XP Embedded™
Processor: Genuine Intel 1.60 GHz
RAM (Random Access Memory): 1 GB
External DVD/CD drive connected to instrument USB port
RS 232C, 5 X USB1
User defined flagging limits
Transmit patient & QC to LIS
Mono & bi-directional connections

Quality Control Management

48 selectable QC files
XB: 100 operator selectable files with statistics (20 samples per file)
With-in run
Levey-Jennings graphs

Logs

Reagents, quality control, calibration, maintenance, user, settings, communication, errors, blanks

PERFORMANCE DATA

Linearity

Parameters	Standard	Unit
WBC	0.1 - 150	10 ⁹ /mm ³
RBC	0.01 - 8	10 ⁶ /mm ³
HGB	0.65 - 24	g/dL
HCT	1 - 67	%
PLT	6 - 1900	10 ³ /mm ³
PLT (platelet concentrated)	6 - 2800	10 ³ /mm ³

Precision:

Parameters	Range	Units	% CV
WBC	4.0 - 10.0	10 ⁹ /mm ³	< 2
RBC	3.6 - 6.2	10 ⁶ /mm ³	< 2
HGB	12.0 - 18.0	g/dL	< 1
HCT	36 - 54	%	< 2
PLT	150 - 500	10 ³ /mm ³	< 5
NEU%	45 - 80	%	< 3
LYM%	25 - 50	%	< 5
MON%	2 - 10	%	< 10
EOS%	1 - 5	%	< 20
BAS%	0.5 - 2.5	%	< 30

CERTIFICATION

EN 61326: 2001
IEC 61000-3-2 : 2000
IEC 61000-3-3 : 2001
IEC 61010-1 : 2001
IEC 61010-2-081 : 2001
IEC 61010-2-101 : 2002
CE 98/79/EC

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AD-040913-1 Rev.1