

ABX **Pentra DX** 120   
Process efficiency in Hematology



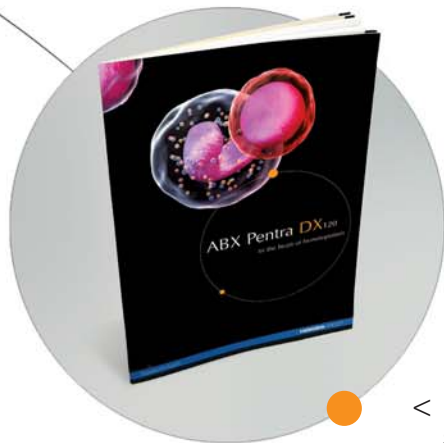
# ABX Pentra DX 120

In the heart of hematopoiesis



## Complete cytology platform

- **120 samples per hour**  
Continuous loading option  
150-tube loader capacity
- **49 parameters**  
CBC (12), DIFF (20), RET (10), NRBC (3), CBF (4)
- **Automatic reflex testing**  
Immediate confirmation of tests based on the chosen validation rules
- **Automatic validation of results**  
Laboratory-defined rules
- **Integrated cytology atlas**  
Hematovision, a software designed and developed by HORIBA Medical
- **SPS evolution**  
Integrated smearer stainer (optional)



## < Hematopoiesis through ABX Pentra DX 120

Scientific book

### Differentiation and quantification of hematopoietic populations using 7 analytical systems

#### > Erythropoiesis

3 dedicated channels: erythroblasts / reticulocytes / erythrocytes

#### > Thrombopoiesis

2 dedicated channels: thrombocytes / double matrix

#### > Leukopoiesis

4 dedicated channels: leukocytes / double matrix / basophils / erythroblasts



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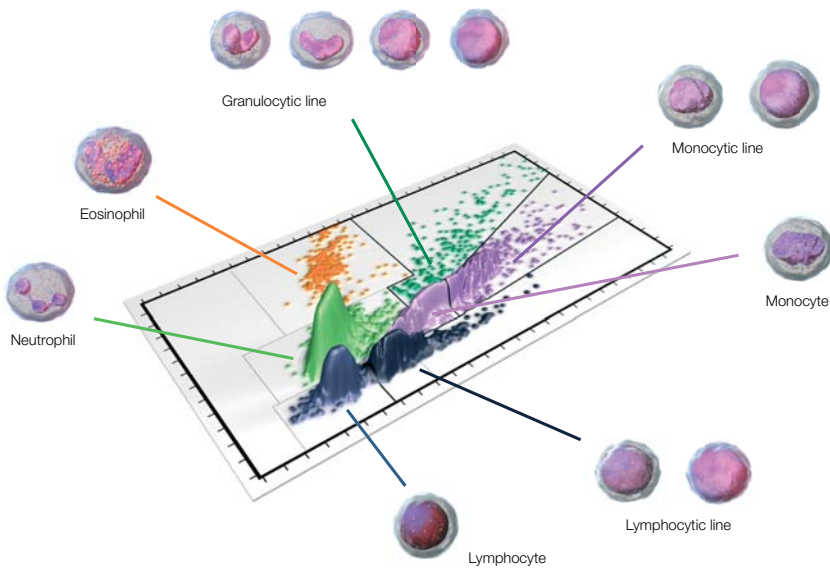
## DHSS Concept

### 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 (with argon-ion laser).

### Cytochemistry

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



## Double DIFF matrix

### Full leukopoiesis analysis:

Routine identification and quantification of three immature cell lines

- granulocytic line (IMG)
- lymphocytic line (IML)
- monocytic line (IMM)

Reduction of the number of slide examinations

Diagnostic and follow-up tool for rapid decision-making

## Erythroblasts

### Fluorescence-based count:

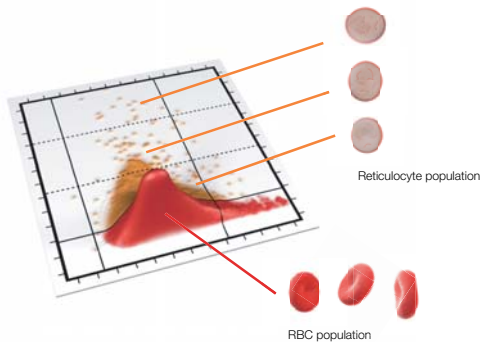
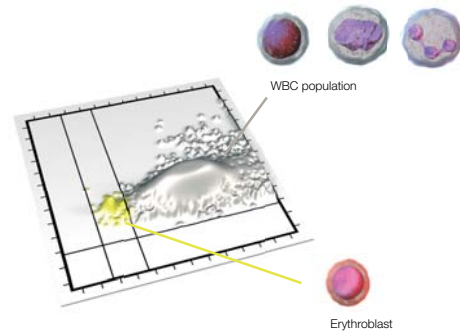
Erythroblast analysis in routine or reflex mode based on:

- internal laboratory rules
- detection alarms
- patient demographics...

Use of Thiazole Orange fluorochrome

Automatic correction of leukocyte count (WBC Flu)

Double Hydrodynamic Sequential System (HORIBA Medical Patent)



## Reticulocytes

### Differential diagnosis of anemia:

Simultaneous count of 10 parameters  
Classification according to three stages of maturation (Heilmeyer):

- RET High
- RET Medium
- RET Low

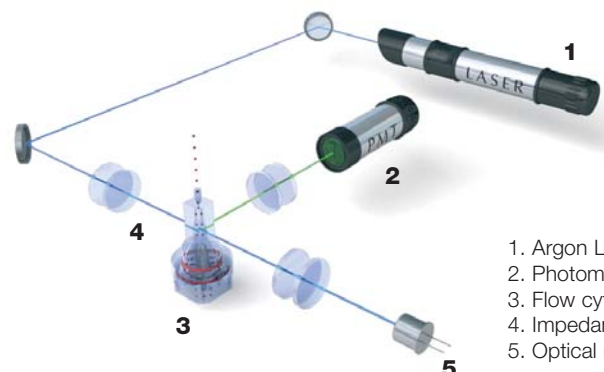
Follow-up of iron-deficiency anemia based on the MRV (Mean Reticulocyte Volume)

Confirmation of bone marrow regeneration level based on the CRC (Corrected Reticulocyte Count)

## A concentrate of technology

5 recognised measurement principles included on a single analyzer.

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



1. Argon Laser
2. Photomultiplier
3. Flow cytometer
4. Impedancemetry
5. Optical measurement



## SPS Evolution

### Perfect standardization of blood smears

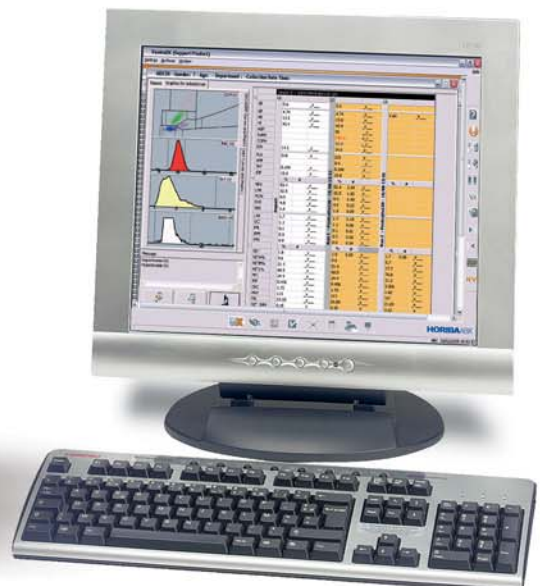
- **Integrated slide-maker\***
  - 120 slides per hour
  - Fully automated and secured process
- **Choice of staining protocols**
  - May-Grünwald Giemsa, Wright, Wright Giemsa, etc.
- **Sampling volume: 50 µl of whole blood (added)**
  - On primary closed tube
- **Positive identification**
  - Barcode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

\* optional module

## Validation station

### Result validation

- **Full management of samples**
  - Alarms triggered according to patient profile
  - Delta check
  - Programmable rerun rules
- **Manual entry capability**
  - Results, comments, etc.
- **Automatic validation**
  - Based on rules, flags, patient history, etc.
- **Integrated cytology atlas**
  - Hematovision





# ABX Pentra DX 120

## Technical Specifications



### PHYSICAL SPECIFICATIONS

#### Dimensions & weight:

	Height	Width	Depth	Weight
Without SPS	75 cm/29.5 in	117 cm/46.1 in	55 cm/22.6 in	110 kg/242.5 lb
With SPS	75 cm/29.5 in	167 cm/65 in	55 cm/22.6 in	170 kg/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:

18 - 32°C (64 - 90°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 800 VA  
Power consumption Laser 9 VA

#### Reagents:

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

### METHODS & TECHNOLOGIES

#### RBC/PLT Detection Principles

Method Impedance  
Aperture diameter 50 µm  
Dilution ratio 1/10 000

#### HGB Measurement

Method Photometry  
Wavelength 550 nm  
Dilution ratio 1/234

#### HCT Measurement

Method Numeric integration

#### WBC & BASO Count (on DIFF mode)

Method Impedance  
Aperture diameter 80 µm (baso)  
Aperture diameter 100 µm (WBC)  
Dilution ratio 1/200 (baso)  
Dilution ratio 1/234 (WBC)

#### Differentiation

Method Impedance with cytometry & cytochemical  
Aperture diameter 60 µm  
Flow diameter 42 µm  
Dilution ratio 1/80  
Reaction temperature 35°C

#### RET and ERB count

Method Impedance with flowcytometry and fluorescence  
Aperture diameter 60 µm

#### MCV, MCH, MCHC, RDW, PCT\*, PDW\*

Calculated parameters

### SOFTWARE SPECIFICATIONS

#### Data Processing:

Color LCD: 17 in  
Capacity: 20,000 results + graphics  
90,000 results (without graphics)

External PC board Windows XP  
Pentium 4 2.4 GHz  
RAM (256 Mo), Hard disk (20 Gb)  
Floppy disk & CD ROM reader & writer  
RS 232C, 2 X USB1  
User defined flagging limits  
Transmit patient & QC to LIS  
Mono & bi-directional connections  
ASTM protocol

#### 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

#### Patient Management:

Automatic validation (setting rules)  
Delta check  
Anteriority (Matrix, curves, data)  
Manual entry

### PARAMETERS & PERFORMANCE DATA

#### 49 Parameters:

WBC RBC HGB HCT MCV MCH MCHC RDW PLT MPV PCT\* PDW\*  
NEU# & NEU% LYM# & LYM% MON# & MON% EOS# & EOS% BAS# & BAS%  
ALY\*# & ALY% LIC\*# & LIC% IMG\*# IMG\*# IMM\*# IMM\*# IML\*# IML\*#  
RET# RET# RETH% RETM% RETL% IMM% CRC% IRF% MRV MFI  
ERB# ERB# WBC Fluo WBC# RBC# Poly Nuc# Mono Nuc#

#### Linearity:

WBC	0 - 150	10 <sup>9</sup> /mm <sup>3</sup>
RBC	0 - 8	10 <sup>9</sup> /mm <sup>3</sup>
HGB	0 - 24	g/dL
HCT	0 - 67	%
PLT	0 - 1900	10 <sup>9</sup> /mm <sup>3</sup>
PLT	0 - 2800	10 <sup>9</sup> /mm <sup>3</sup> (platelet concentrated)

#### Precision:

Parameters	Range	Units	% CV
WBC	4.0 - 10.0	10 <sup>9</sup> /mm <sup>3</sup>	< 2
RBC	3.6 - 6.2	10 <sup>9</sup> /mm <sup>3</sup>	< 2
HGB	12.0 - 18.0	g/dL	< 1
HCT	36 - 54	%	< 2
PLT	150 - 500	10 <sup>9</sup> /mm <sup>3</sup>	< 5
NEU%	50 - 80	%	< 3
LYM%	25 - 50	%	< 5
MON%	2 - 10	%	< 10
EOS%	0 - 5	%	< 15
BAS%	0 - 2	%	< 20

\* RUO parameters (Research Use Only)

### 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

**HORIBA**  
Medical



Operating IMS

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