

# Yumizen H500



## PHYSICAL SPECIFICATIONS

Dimensions & Weight:	Height	Width	Depth	Weight
Analyzer	48 cm 16 in	40 cm 19 in	48 cm 19 in	23 kg 51 lbs

### Printer (optional):

Compatible models

### Throughput:

50 samples/hour

### Sound Level:

53 dBA

### Operating Temperature & Humidity:

+15°C (+59°F) to +30°C (+86°F)  
Relative humidity of 30%-80% maximum, without condensation

### Specimen Volume:

CBC mode: 20µL

DIFF mode: 20µL

### Power Requirements:

Power supply: 100 V to 240 V (+/- 10%), 50 Hz to 60 Hz

Power consumption: 165 VA

Heat output: 348 kJ/h (330 BTU/h)

### Reagents:

2 reagents for analysis :

ABX Diluent (20L)

Whitediff 1L (cyanide free)

1 reagent for daily maintenance :

ABX Cleaner / ABX Miniclean 1L

## MEASUREMENT PRINCIPLES

### WBC & Differential

First Dilution: 1/51 with ABX Diluent

Final Dilution: 1/121 with Whitediff

Incubation: 22 sec at 37°C

### Methods:

• Cytometry : Double Hydrodynamic Sequential System 'DHSS'

• Optical Reading : Absorbance

• Impedance Variation

Aperture Diameter: 60µm

Counting: 11 x 1 sec

### HGB Measurement

First Dilution: 1/51 with ABX Diluent

Final Dilution: 1/121 with Whitediff 1L

Incubation: 12,5 sec at 37°C

### Method:

• Spectrophotometry : at a wavelength of 555 nm

Measurement: 10 x 0,3 sec

### RBC & PLT Detection

First Dilution: 1/51 with ABX Diluent

Final Dilution: 1/10251 with ABX Diluent

### Method:

• Impedance Variation

• Analogic Digital Conversion

Counting: 12 x 1 sec

RBC histogram: 256 channels from 30 to 300 fL

PLT histogram: 256 channels from 2 to mobile threshold

### HCT Measurement

Method: analogical integration

Calculation: MCV, MCH, MCHC, RDW-CV, RDW-SD\*, PCT\*, PDW\*, P-LCC\*, P-LCR\*

## SOFTWARE SPECIFICATIONS

### • Data Processing

Color LCD touch screen: 12,1 in.

Operating System: Linux™

Connection: RS232, Ethernet, USB

Communication: ASTM protocol

Capacity: 10 000 results + graphs

Options: keyboard, mouse and bar code reader

### • Quality Control

3 controls levels (low, normal, high)

Target values download (USB)

QC results compatible with Horiba Medical Quality Control Program (QCP)

Levey-Jennings graphs

Radar graphs

XB on 3 or 9 parameters, mean value of 20 runs

## PARAMETERS & PERFORMANCE DATA

### 27 Parameters:

WBC	RBC	PLT
NEU# & NEU%	HGB	MPV
LYM# & LYM%	HCT	PCT*
MON# & MON%	MCV	PDW*
EOS# & EOS%	MCH	P-LCC*
BAS# & BAS%	MCHC	P-LCR*
LC# & LIC%*	RDW-CV	RDW-SD*

Linearity:	Linearity Limits	Visible Range	Unit
WBC	0 - 300	300 - 600	10 <sup>9</sup> /L
RBC	0 - 8	8 - 18	10 <sup>12</sup> /L
HGB	0 - 240	240 - 300	g/L
HCT	0 - 67	67 - 80	L/L
PLT	0 - 2500	2500 - 4000	10 <sup>9</sup> /L
PLT (concentrate)	0 - 4000	4000 - 5000	10 <sup>9</sup> /L

### Precision (Repeatability):

Parameters	CV (%)	Range	Unit
WBC	<3.0	4 - 100	10 <sup>9</sup> /L
RBC	<2.0	3,6 - 6,2	10 <sup>12</sup> /L
HGB	<1.5	120 - 180	g/L
HCT	<2.0	0,36 - 0,54	L/L
PLT	<5.0	150 - 500	10 <sup>9</sup> /L

## CERTIFICATION

98/79/EC (IVD)  
EN ISO 13485  
EN ISO9001  
IEC 61010-1  
IEC 61010-2-081  
IEC 61010-2-101  
EN 61326-1  
EN 61326-2-6  
IEC 61000-3-2  
IEC 61000-3-3  
UL 61010-1  
CAN/GSA-C22.2 61010-1

\* RUO parameters (Research Use Only)

**HORIBA**  
Medical

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Operating IMS



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## The Yumizen effect !

- 6 Part Hematology Analyzer
- Only 2 Reagents per Analysis
- DHSS & VCF
- Complete Platelet Indices
- Artificial Intelligence System
- Color Patient Report



**Yumizen**  
H500

Explore the future

Automotive Test Systems | Process & Environmental | Medical | Semiconductor | Scientific

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## Technologies VCF & DHSS



- Volume
- Cytochemistry
- Flow Cytometry
- DHSS® Double Hydrodynamic Sequential System

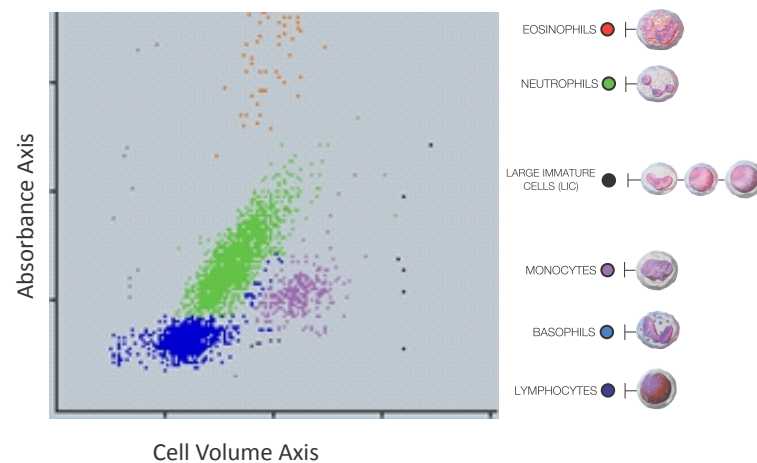
## DHSS (Double Hydrodynamic Sequential System) for Cytochemistry and Flow Cytometry:

### Cytochemistry

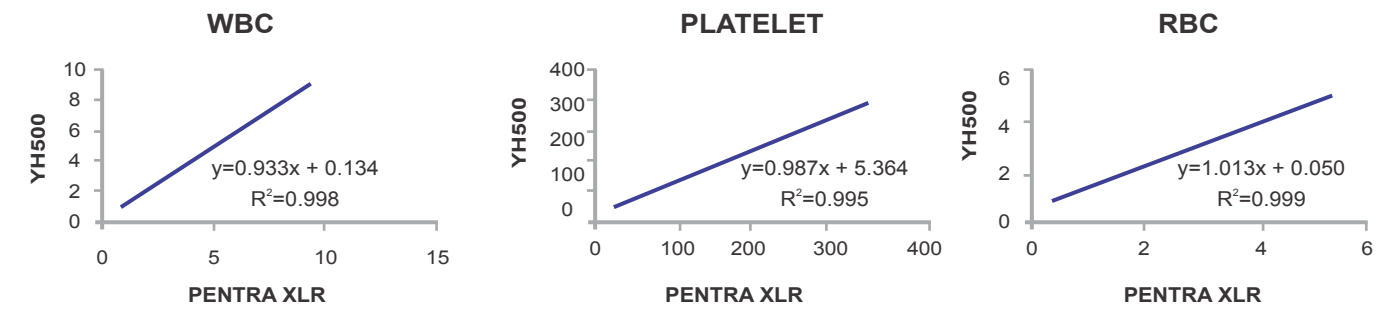
- Temperature controlled reagent cytochemistry produces excellent cell differentiation
- 48 hours post-draw stability

### Flow Cytometry

- Precise cellular identification by injecting the prepared sample into a double hydrofocusing cytometer: impedance (cell volume measurement) & optical (analysis of the internal cellular structure by measuring light absorbency).



## Regression & Correlation Analysis



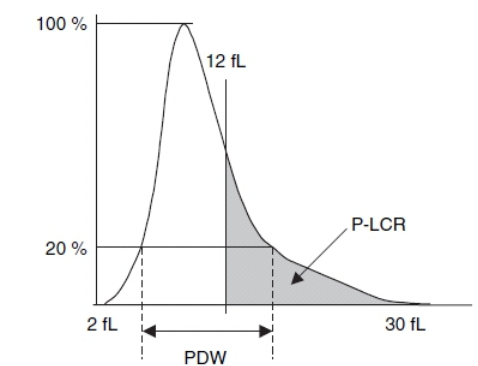
## Repeatability With 1:5 Dilution

	WBC	RBC	HGB	HCT	PLT	MCV	RDW
MEAN	1.03	1.05	3.4	9.1	8	86.6	13.4
SD	0.02	0.025	0.05	0.2	1	0.35	0.3
CV	1.78	2.16	2.06	2.23	13.2	0.41	2.38
MIN	1	1.03	3.4	8.9	6	86.1	12.9
MAX	1	1.11	3.6	9.6	9	87.4	13.9

\*Applicable For Even Low Platelet Count

## Extended Platelet Indices

- ▶ **P-LCC (#)** : Count of Large Platelets with a Volume >12 fL.
- ▶ **P-LCR (%)** = P-LCC/PLT



• 6 Part Hematology Analyser

• Quality Control

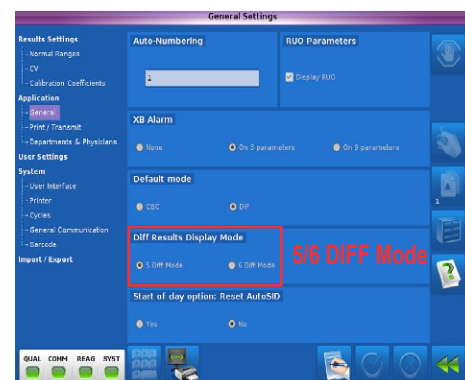
• Artificial Intelligence System

• Only 2 Reagents Per Analysis

• Complete Report

• Color Patient Report

## 6 Part Hematology Analyzer

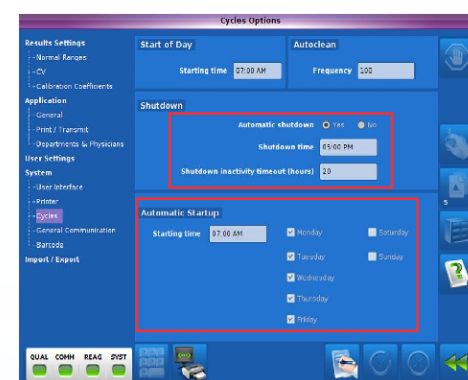


## Only 2 Reagents Per Analysis

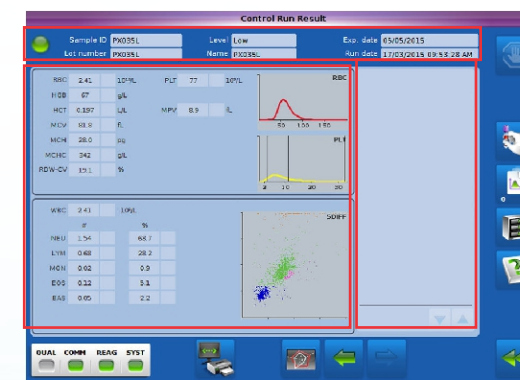


Whitediff® 1L

## Artificial Intelligence System



## Complete Report



## Quality Control



Uni-dimensional time progressive graph

Levey Jennings



Bi-dimensional multi-variable quantitative graph

Radar Graphs