

HumaCount 5L

Automated hematology analyzer – laser technology

- › Patented technology
- › Cost-efficient
- › Reliable routine performance

Hematology



Human
Diagnostics Worldwide

HumaCount 5L

5-part WBC differential system



HumaCount 5L

5-Part-Laser Technology

REF

16430

- 26 parameters, with patented optical 5-part WBC differential measurement by laser scatter
- WBC, LYM, MON, NEU, BAS, EOS (LYM%, MON%, NEU%, BAS%, EOS%)
- RBC, MCV, MCH, MCHC HGB, HCT, RDWc, PLT, MPV, PDWc, PCT, RDWsd, PDWsd, P-LCC, P-LCR
- Flag for immature granulocytes and large blasts
- Impedance method for standard parameters
- 60 samples/hour
- Closed and open tube sampling
- 110 µl sample volume,
25 µl sample volume (Small sample module optional)
- Multi-lingual user interface
- 600 x 800 colour LCD touchscreen
- USB printer interface
- Memory for 100,000 samples incl. histograms
- Built-in QC software
- Closed reagent system
- Open and closed tube sampling
- HL7, LIS integration bi-directional
- Optional: 2D barcode for error-free upload of target values



Accessories

REF

Auto-sampler (optional)

16430/10

- Capacity 100 samples (10 racks)
- Patient ID mapping via barcode reader
- Built-in mixer with cap piercer

Small Sample Module

16430/12

2D-Barcode Scanner

16430/11

HumaRoll (tube roller)

15460



- Reduced clogging rates by high energy burst
- Burn away of proteins at each measurement cycle
- Low cleaner consumption
- Steady workflow with reliable cell counting

PCT	MPV	PDWcv	PDWsd	P-LCC	PLT	HGB	HCT	MCH	MCHC	RDWcv	RDWsd	RBC	MON%	LYM%	LYM	NEU%	NEU	EOS%	EOS	BAS%	BAS	WBC
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System Reagents

REF

HC5L-Diluent 16430/20

- Specially designed for HumaCount 5L instruments
- Contains 20l

HC5L-Lyse CF 16430/30

- Cyanide-free reagent, environmentally safe
- Contains 5l

HC5L-Diff 16430/40

- Dedicated baso analysis
- Contains 1l

HC-Regular 17400/55

- Enzymatic cleaner
- Contains 50ml

HC-Acute 17400/56

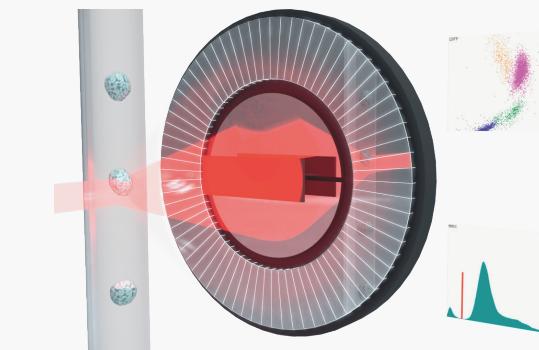
- Hypochlorite cleaner
- Contains 50ml

HC5L-Control 16430/50

- Hematology control blood
- 3 levels, multi-parameter
- Contains 2 x 3 x 3 ml

HC-Calibrator 17400/50

- Hematology calibrator blood
- Stable up to 7 days after opening
- Contains 1 x 2 ml



Typical precision

Parameter	CV	Range
WBC	$CV \leq 3\%$	$4.7 \times 10^3/\mu\text{l} \leq \text{WBC} \leq 38 \times 10^3/\mu\text{l}$ All 5 part parameters (NEU, LYM, MON, EOS, BAS abs and %)
NEU%	$CV \leq 5\%$	$87.4\% \geq \text{NEU\%} \geq 47\%$
LYM%	$CV \leq 8\%$	$35.6\% \geq \text{LYM\%} \geq 15\%$
MON%	$CV \leq 20\%$	$16.3\% \geq \text{MON\%} \geq 5.3\%$
EOS%	$CV \leq 25\%$	$11\% \geq \text{EOS\%} \geq 1.5\%$
BAS%	$CV \leq 40\%$	$2.4\% \geq \text{BAS\%} \geq 1\%$
NEU	$CV \leq 5\%$	$\text{NEU\%} \geq 30\%$
LYM	$CV \leq 8\%$	$\text{LYM\%} \geq 15\%$
MON	$CV \leq 20\%$	$\text{MON\%} \geq 5\%$
EOS	$CV \leq 25\%$	$\text{EOS\%} \geq 1.5\%$
BAS	$CV \leq 40\%$	$\text{BAS\%} \geq 1\%$
RBC	$CV \leq 1.5\%$	$2.5 \times 10^6/\mu\text{l} \leq \text{RBC} \leq 5.44 \times 10^6/\mu\text{l}$
HGB	$CV \leq 1.5\%$	$78.5\text{g/l} \leq \text{HGB} \leq 184\text{g/l}$
HCT	$CV \leq 2\%$	$20-49 \text{ HCT\%}$
MCV	$CV \leq 1\%$	$65\text{f}\text{l} \leq \text{MCV} \leq 105\text{f}\text{l}$
PLT	$CV \leq 5\%$	$100 \times 10^3/\mu\text{l} \leq \text{PLT} \leq 492 \times 10^3/\mu\text{l}$
MPV	$CV \leq 5\%$	$5.6\text{f}\text{l} \leq \text{MPV} \leq 11.3\text{f}\text{l}$

Linearity

Parameter	Coefficient of determination	Range
WBC	$r^2 \geq 0.95$	$1 \times 10^3/\mu\text{l} \leq \text{WBC} \leq 100 \times 10^3/\mu\text{l}$
RBC	$r^2 \geq 0.95$	$0.4 \times 10^6/\mu\text{l} \leq \text{RBC} \leq 7.5 \times 10^6/\mu\text{l}$
HGB	$r^2 \geq 0.95$	$13\text{g/l} \leq \text{HGB} \leq 227\text{g/l}$
PLT	$r^2 \geq 0.95$	$10 \times 10^3/\mu\text{l} \leq \text{PLT} \leq 873 \times 10^3/\mu\text{l}$
Carry over	$< 0.5\%$	

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Specifications

Throughput	60 tests/hour	Reagents	HC5L-Diluent (20 l), HC5L-Lyse (5 l), HC5L-Diff (1 l), HC-Acute & HC-Regular (50 ml)
Sample volume	Closed- and open-mode: 110 µl Optional small sample module: 25 µl	Sheath fluid	Diluent
Sample type	Human whole blood (K3-EDTA anticoagulant)	Quality control	16- and 64-day Levey-Jennings charts, separate QC database (6 level)
Tube identification	By means of the front panel keyboard (enter ID) By means of the barcode labels (manual and/or auto-sampler)	Flagging	Morphological flags Interpretive flags (diagnostic flags) Lab limits (normal ranges)
Sampling method	Ceramic shear valve with 3 separated primary loops arated	Reagents alert	Pre-alert-online reagent replacement
Measured parameters	CBC+5DIFF mode (26 parameters): WBC, LYM, MON, NEU, EOS, BAS, LYM%, MON%, NEU%, EOS%, PLT, PCT, MPV, PDW, BAS%, RBC, HCT, MCV, HGB, MCH, MCHC, RDWcv, RDWsd, PDWcv, PDWsd, P-LCC, P-LCR	System alert	Instrument alerts, self-check
Measurement method	Volumetric impedance change for WBC, RBC, PLT Spectrophotometry for HGB Light scattering 4-diff measurement: LYM, MON, NEU, EOS Light scattering BASO measurement	Languages available	UK-English, US-English, Hungarian, German, Italian, Polish, Russian, Spanish, Turkish, French
Aperture diameter	WBC: 80 µm RBC, PLT: 70 µm	Software upgrade	Via USB
HGB measurement	Light source: green LED with 540 nm wavelength Detector: light to frequency converter	Data storage capacity	100,000 records including flags, scatter- and histograms
Optical measurement	Light source: semiconductor laser diode with 650nm wavelength and 10mW (Class IIIB laser module) Quartz flow cell with hydro-dynamic focusing Detector: fiber optic coupled PIN Si photodiodes Internal safety interlock	Data processing	VIA C7 1.8GHz processor
		Display	800 x 600 color graphic LCD, portrait layout
		External printing	Via USB port, any Windows® compatible printer
		External keyboard	Via PS/2 or USB
		Barcode reader	Optional manual barcode reader via USB Built-in barcode reader in the auto sampler
		Peripheral ports	USB (2.0) 4pc., Ethernet, PS/2

