

HumaCount 5L

Automated Hematology Analyzer – Laser Technology

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

HEMATOLOGY

CoreLab DX



Human

Diagnostics Worldwide

HumaCount 5L

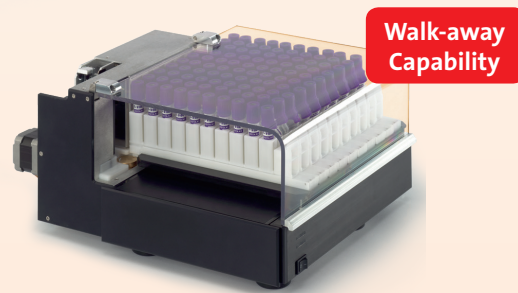
5-Part WBC Differential System



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

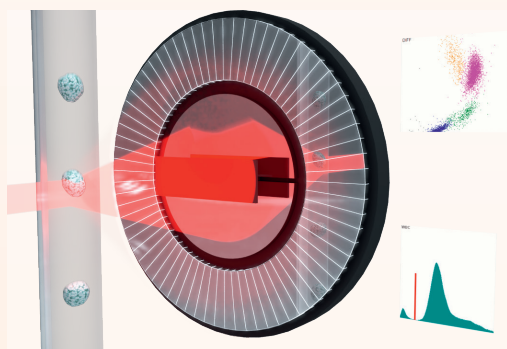
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Auto-sampler (optional)	16430/10
> Capacity 100 samples (10 racks)	
> Patient ID mapping via barcode reader	
> Built-in mixer with cap piercer	
Small Sample Module	16430/12
2D-Barcode Scanner	16430/11
HumaRoll (tube roller)	15460



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

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



5-Part 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

HC5L-Control 16430/50

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

HC-Calibrator 17400/50

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

Typical precision

Parameters	CV	Range
WBC	CV ≤ 3%	4.7 x 10 ³ /μl ≤ WBC ≤ 38 x 10 ³ /μl All 5 part parameters (NEU, LYM, MON, EOS, BAS abs and %) at 4.7 x 10 ³ /μl ≤ WBC ≤ 38 x 10 ³ /μl
NEU%	CV ≤ 5%	87.4% ≥ NEU% ≥ 47%
LYM%	CV ≤ 8%	35.6% ≥ LYM% ≥ 15%
MON%	CV ≤ 20%	16.3% ≥ MON% ≥ 5.3%
EOS%	CV ≤ 25%	11% ≥ EOS% ≥ 1.5%
BAS%	CV ≤ 40%	2.4% ≥ BAS% ≥ 1%
NEU	CV ≤ 5%	NEU% ≥ 30%
LYM	CV ≤ 8%	LYM% ≥ 15%
MON	CV ≤ 20%	MON% ≥ 5%
EOS	CV ≤ 25%	EOS% ≥ 1.5%
BAS	CV ≤ 40%	BAS% ≥ 1%
RBC	CV ≤ 1.5%	2.5 x 10 ⁶ /μl ≤ RBC ≤ 5.44 x 10 ⁶ /μl
HGB	CV ≤ 1.5%	78.5 g/l ≤ HGB ≤ 184 g/l
HCT	CV ≤ 2%	20–49 HCT%
MCV	CV ≤ 1%	65 fl ≤ MCV ≤ 105 fl
PLT	CV ≤ 5%	100 x 10 ³ /μl ≤ PLT ≤ 492 x 10 ³ /μl
MPV	CV ≤ 5%	5.6 fl ≤ MPV ≤ 11.3 fl

Linearity

Linearity	Coefficient of determination	Range
WBC	r ² ≥ 0.95	1 x 10 ³ /μl ≤ WBC ≤ 100 x 10 ³ /μl
RBC	r ² ≥ 0.95	0.4 x 10 ⁶ /μl ≤ RBC ≤ 7.5 x 10 ⁶ /μl
HGB	r ² ≥ 0.95	13 g/l ≤ HGB ≤ 227 g/l
PLT	r ² ≥ 0.95	10 x 10 ³ /μl ≤ PLT ≤ 873 x 10 ³ /μl
Carry over	< 0.5%	

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Specifications

Sample volume	Closed- and Open-mode: 110 µl Optional small sample module: 25 µl	Reagents	HC5L-DILUENT (20 liter) HC5L-LYSE (5 liter) HC5L-DIFF (1 liter)
Sample type	Human whole blood (K3-EDTA anticoagulant)	Sheath fluid	Diluent
Tube identification	By means of the front panel keyboard (enter ID) By means of the barcode labels (manual and/or auto-sampler)	Quality control	16- and 64-day Levey-Jennings charts, separate QC database (6 level)
Sampling method	Ceramic shear valve with 3 separated primary loops	Flagging	Morphological flags Interpretive flags (Diagnostic flags) Lab limits (normal ranges)
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, RWDcv, RDWsd, PDWcv, PDWsd, P-LCC, P-LCR	Reagents alert	Pre-alert-online reagent replacement
Throughput	60 tests/hour	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	Calibration	Manual and SW supported automatic mode
Aperture diameter	WBC: 80 µm RBC, PLT: 70 µm	Languages available	UK-English, US-English, Hungarian, German, Italian, Polish, Russian, Spanish, Turkish, French
HGB measurement	Light source: green LED with 540 nm wavelength Detector: light to frequency converter	Software upgrade	Via USB
Optical measurement	Light source: semiconductor laser diode with 650 nm wavelength and 10 mW (Class IIIB laser module) Quartz flow cell with hydro-dynamic focusing Detector: fiber optic coupled PIN Si photodiodes Internal safety interlock	Data storage capacity	100,000 records including flags, scatter- and histograms
		Data processing	VIA C7 1.8GHz processor
		Data store	Embedded XP
		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
		Power requirements	110/230 VAC; 47 Hz to 63 Hz
		Power consumption	Maximum 400 VA
		Main fuse	F 10A H 250V
		Operating conditions	15–30°C (59–98 °F); Maximum relative humidity 80%
		Weight	Instrument 35 kg, auto-sampler 10 kg
		Size (h x d x w)	Instrument 540 x 460 x 450 mm Auto-sampler 180 x 270 x 320 mm