HumaCount 5L

Automated Hematology Analyzer – Laser Technology

- Patented technology
- Cost-efficient
- Reliable routine performance

CoreLab DX

HEMATOLOGY



Anti-Clogging Technology

Human

Diagnostics Worldwide

HumaCount 5L

5-Part WBC Differential System



Movie

Case Study Book



HumaCount 5L	REF
5-Part-Laser Technology	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

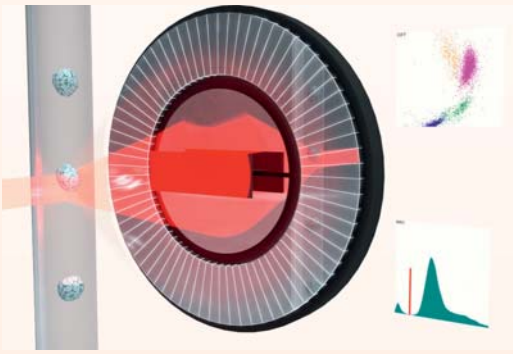
	REF
Auto-sampler (optional)	16430/10

- 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

Anti-Clogging Technology

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





5-Part System Reagents

	REF
HC5L-Diluent	16430/20
› Specially designed for HumaCount 5L instruments	
› Contains 20 l	
HC5L-Lyse CF	16430/30
› Cyanide-free reagent, environmentally safe	
› Contains 5 l	
HC5L-Diff	16430/40
› Dedicated baso analysis	
› Contains 1 l	
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
Sample type	Human whole blood (K3-EDTA anticoagulant)
Tube identification	By means of the front panel keyboard (enter ID)
	By means of the barcode labels (manual and/or auto-sampler)
Sampling method	Ceramic shear valve with 3 separated primary loops
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
Throughput	60 tests/hour
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
Aperture diameter	WBC: 80 µm
	RBC, PLT: 70 µm
HGB measurement	Light source: green LED with 540 nm wavelength
	Detector: light to frequency converter
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

Reagents	HC5L-Diluent (20 liter)
	HC5L-Lyse (5 liter)
	HC5L-Diff (1 liter)
Sheath fluid	Diluent
Quality control	16- and 64-day Levey-Jennings charts, separate QC database (6 level)
Flagging	Morphological flags
	Interpretive flags (Diagnostic flags)
	Lab limits (normal ranges)
Reagents alert	Pre-alert-online reagent replacement
System alert	Instrument alerts, self check
Calibration	Manual and SW supported automatic mode
Languages available	UK-English, US-English, Hungarian, German, Italian, Polish, Russian, Spanish, Turkish, French
Software upgrade	Via USB
Data storage capacity	100,000 records including flags, scatter- and histograms
Data processing	VIA C7 1.8 GHz 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 10 A H 250 V
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

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