LIFECODE
PROTEOMICS
Your Vision, Our Innovation.

Swiftest HB1

Dry Clinical Chemistry and Electrolyte Analyzer

FDA- 510 K CLEARED*

28 Test Parameters
Biochemistry, Immunoassay & Electrolyte

200 µl Whole Blood

15 Mins. Test Time

Built-in Centrifuge
No Sample Pre-treatment

SPEED MEETS QUALITY

Rapid *Reliable* *Convenient*

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KEY FEATURES

Rapid

- Fully Automated
- Test Time - 15 minutes
- Wide Test Profile - 8 panels, 28 test items
- Built-in Centrifuge

Reliable

- Principle - Colorimetric System
- LEDs 340 nm~940 nm wavelength
- IQC with self-calibration of optical system and interference alerts functions
- Fixed 200 µl Micropipette provided

Convenient

- Sample type - Whole blood/serum/plasma
- Micro sample - 200 µl
- Built-in Printer
- LIS/HIS Compatible
- Up to 50,000 results storage

SINGLE STEP PROCEDURE

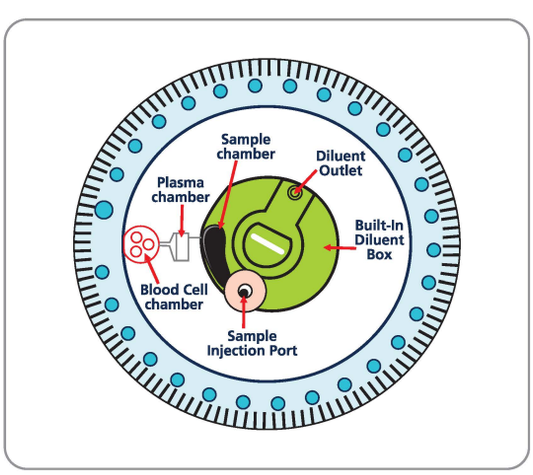
Walk- Away System

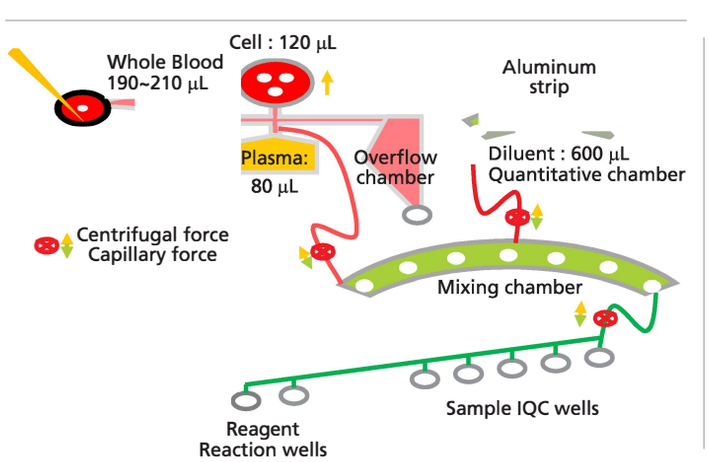
Inject 200 µl blood sample

Press START and insert reagent disc

Read the results

DISC WORKING THEORY





Test Profiles

General Biochemistry Panel (12+3	ALB, ALP, ALT, AST, BUN, CREA, GGT, GLU, TBIL, TC, TP, UA, A/G#, eGFR#, GLOB#
Basic Biochemistry Panel (7+3)	ALB, ALT, BUN, CREA, GLU, TP, UA, A/G#, eGFR#, GLOB#
Metabolic Panel (13+3)	ALB, ALT, AST, BUN, CREA, GLU, TP, UA, Ca, Cl, K, Na, PHOS, A/G#, eGFR#, GLOB#
Liver Panel (9+3)	ALB, ALP, ALT, AST, DBIL, GGT, GLU, TBIL, TP, A/G#, GLOB#, IBIL#
Renal Panel (10+1)	ALB, BUN, CPK, CREA, GLU, Ca, Cl, K, Na, PHOS, eGFR#
Lipid Panel (4+2)	GLU, HDL, TC, TG, LDL#, VLDL#
ER Panel (13+1)	ALT, AMY, AST, BUN, CPK, CREA, GLU, LIPA, Ca, Cl, K, Na, PHOS, eGFR#
Electrolyte Panel II	Cl, K, Na, tCO2, Ca, PHOS, Mg

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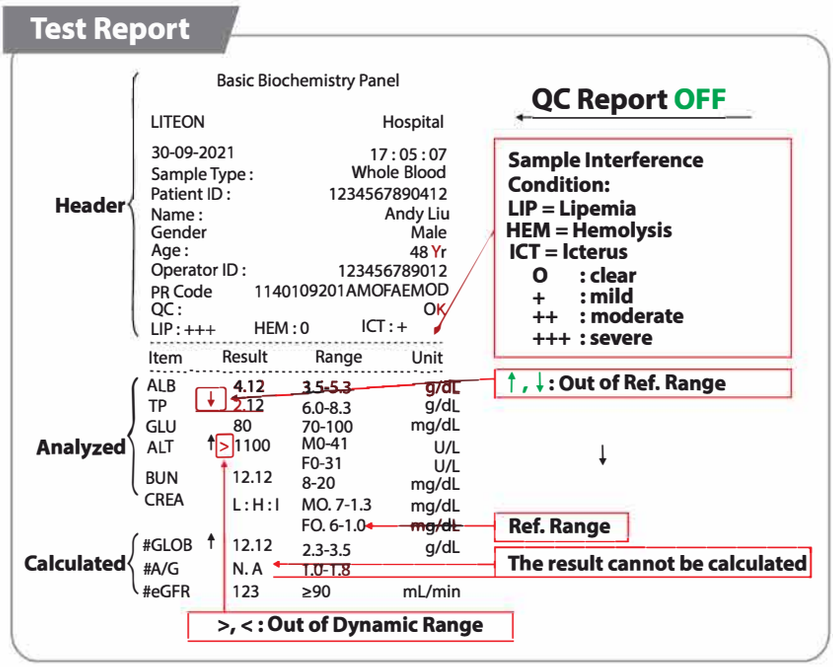
INTELLIGENT INTERFERENCE ELIMINATING (IIE) SYSTEM

Use of multiple wavelengths LEDs eliminates the effect of sample lipemia (LIP), hemolysis (HEM) and icterus (ICT) interference to provide high accuracy results.



EXTERNAL QUALITY CONTROL

BIO-RAD Lyphochek® Assayed Chemistry Control Level 1/2 and BIO-RAD Liquid Assay Multiquald ® Control Level 1/2/3 values provided on request.

Specifications	
Throughput	Max.15 test results / 15 minutes
Display	5" Color LCD Touch Screen
USB Socket	USB type A (Host) for External USB Printer, USB flash drive for External Barcode Scanner, USB port for Wifi dongle (optional)**
Interface	RS232 serial port or RJ45 (LAN)
Power Supply	100 - 240 VAC, 50 - 60 Hz
Dimensions	223 (W) X 285 (D) X 300 (H) mm
Operating Environment	Temperature : 10 - 32℃, Humidity : 5 - 90%
LEDs	340, 405, 450, 510, 540, 600, 650, 940
Weight	5.5 kg

* ALP, ALT, AST, BUN, Creatinine

** No FDA 510K for model with wifi dongle

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Assay	Test Item	Unit	Methodology	Working Range
ALB	Albumin	g/dL	Bromcresol green	1.0 - 6.0 g/dL
ALP	Alkaline Phosphatase	U/L	PNNP, AMP Buffer	41 - 2000 U/L
ALT	Alanine Aminotransferase	U/L	UV with P5P	20 - 1100 U/L
AMY	Amylase	U/L	Gal-G_2-CNP	22 - 3000 U/L
AST	Aspartate Aminotransferase	U/L	UV without P5P	20 - 1000 U/L
BUN	Blood Urea Nitrogen	mg/dL	Urease, UV (GLDH)	2 - 120 mg/dL
Ca	Calcium	mg/dL	Arsenazo III	4 - 15 mg/dL
Cl	Chloride	mmol/L	Enzymatic, α-amylase activation	70 - 140 mmol/L
CPK	Creatinine Phosphokinase	U/L	IFCC	40 - 2400 U/L
CREA	Creatinine	mg/dL	Enzymatic	0.6 - 20 mg/dL
CRP	C-Reactive Protein	mg/L	Immunoturbidimetric	5 - 40 mg/L
DBIL	Direct Bilirubin	mg/dL	Vanadate Oxidation	0.1 - 15 mg/dL
GGT	Gamma Glutamyl Transferase	U/L	IFCC	10 - 1500 U/L
GLU	Glucose	mg/dL	Hexokinase	30 - 600 mg/dL
HDL	High Density Lipoprotein	mg/dL	Direct Measurement	20 - 75 mg/dL
LIPA	Lipase	U/L	DGGMR, Colorimetric	60 - 1500 U/L
Mg	Magnesium	mg/dL	Hexokinase	0.1 - 8.0 mg/dL
PHOS	Phosphorous	mg/dL	Enzymatic	0.4 - 18 mg/dL
K	Potassium	mmol/L	Enzymatic	1.5 - 8.5 mmol/L
Na	Sodium	mmol/L	Enzymatic	110 - 170 mmol/L
TBIL	Total Bilirubin	mg/dL	Vanadate Oxidation	0.4 - 30 mg/dL
TC	Total Cholesterol	mg/dL	Dehydrogenase, Esterase	50 - 540 mg/dL
tCO2	Total CO2	mmol/L	Enzymatic (Phosphoenolpyruvate Carboxylase)	10 - 40 mmol/L
TG	Triglycerides	mg/dL	Enzymatic GPO	35 - 600 mg/dL
TP	Total Protein	g/dL	Biuret	1.5 - 10 g/dL
UA	Uric Acid	mg/dL	Uricase	1 - 20 mg/dL

Calculated parameter#	Indication	Unit	Equation
Globulin	#GLOB	g/dL	GLOB = TP - ALB
Albumin/Globulin ratio	#A/G		ALB/#GLOB = ALB/(TP - ALB)
VLDL - Cholesterol	#VLDL	mg/dL	VLDL = TG/5
LDL - Cholesterol	#LDL	mg/dL	LDL = TC - (HDL+VLDL)
Estimated Glomerular Filtration Rate	#eGFR (MDRD)	mL/min/1.73 m^2	Male - $186*CREA^{-1.154} \times Age^{-0.203} \times 1$ Female - $186*CREA^{-1.154} \times Age^{-0.203} \times 0.742$
Estimated Glomerular Filtration Rate	#eGFR (CKD-EPI)	mL/min/1.73 m^2 (CREA : Common unit)	Male - CREA ≤ 0.9, eGFR $=141 \times (Cr/0.9)^{-0.411} \times (0.993)^{age}$ CREA > 0.9, eGFR $=141 \times (Cr/0.9)^{-1.209} \times (0.993)^{age}$ Female - CREA ≤ 0.7, eGFR $=144 \times (Cr/0.7)^{-0.329} \times (0.993)^{age}$ CREA > 0.7, eGFR $=144 \times (Cr/0.7)^{-1.209} \times (0.993)^{age}$
Indirect Bilirubin	#IBIL	mg/dL	IBIL = TBIL - DBIL
Non HDL	#NHDL	mg/dL	NHDL = TC - HDL

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