AUTOMATED BIOCHEMISTRY ANALYZER

Model M400

FEATURES:

- Discrete, random access, fully automated
- Constant 400 tests/ hour, up to 800 tests/ hour with ISE (K, Na, Cl or Li)
- Rear spectrophotometry of holographic flat field grating system with 12 wavelength
- Reusable cuvettes with auto-washing station
- Auto clot detection and crash protection (vertical & horizontal)
- Continuous refrigeration for reagent and sample trays
- Automatic sample diluent: 3-170 times
- Two independent mixing stirrers

NEW

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TECHNICAL SPECIFICATIONS

Performance

Type of Equipment	Fully automatic, discrete, STAT priority
Through-put	400 test/ hour, or 800 test/ hour with ISE
Test principle	colorimetry, turbidimetry, ISE
Analysis principle	End-point, kinetics, fixed time, ...etc Support single/ double wavelength and 1-4 multiple reagent item Linear and non-linear calibration
Simultaneous analysis item	110 colormetric items and 3 ISE items (K, Na, Cl as optional)

Sample Handling

Sample position	115 positions with 50 routine sample positions, 20 STAT positions, 34 calibrations, 8 QC positions, 3 wash solutions positions. Continuously cooling at calibration and QC positions to keep 5~15°C within 24 hours
Sampling technology	liquid level detection, clot detection and collision detection
Sample volume	1.5~35μL, 0.1μL stepping
Carrying rate	≤ 0.1%, automatic warm water cleaning
Automatic sample dilution	3~170 times
Sample code	Code 128, code 39, code 93, 12of5, UPC/EAN

Reagent Handling

Reagent probe	2
Probe function	liquid level detection, clot detection and collision detection
Reagent position	112 positions on two trays, R1 disk with 67 posititons and R2 disk with 45 positions, continuous 5-15°C cooling within 24 hours, loading 70ml and 20ml standard reagent kit
Reagent volume	20~350μl, 0.1μL stepping
Carrying rate	≤ 0.1%, automatic warm water cleaning
Reagent code	Code 128

Reaction Handling

Reaction cuvette	120 positions, optical plastic cup
Total volume of reaction	150 μl~450μl
Reaction temperature	37°C, ±0.1°C (The Unique PID temperature control technology)
Reaction disk constant temperature	Circulating water
Mixing needle	2
Reaction cuvette cleaning	7 stops, 12 steps by warm water rinsing
Wastewater treatment	Two diffluence for high and low concentration waste water, with the function of concentrated waste liquid level alarming.
Reaction time	15 minutes

Optical system

Light source	20W/12V halogen lamps. Shelf-life: 2000 hours
Photometer	Cluster-condensing light, grating photometry
Wavelength	340, 380, 405, 450, 480, 505, 546, 570, 600, 660, 700, 750 or 800 nm
Detector	Photodiode LED array
OD linear range	0 – 3.6 Abs

Calibration and QC

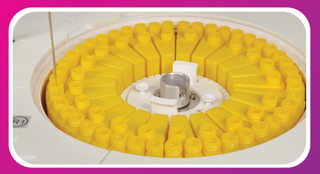
Calibration method	1 point linear, 2 point linear, muliple point linear, non linear method
Calibration tracking	Automatic description calibration K-value trends
QC method	Real-time QC, days QC and day QC
Out of control processing	Alarming for out of control sample, record lost control reason

Working conditions

Power supply	220V±22V, 50/60Hz, 2KVA
Temperature	15-30°C
Humidity	35-85%
Water consumption	≤ 25l deionized water
Volume	1060 x 790 x 1150 mm (LxWxH)
Weight	300 kg

Other

PC operating system	Windows 7, Windows 10
Analysis control software	English version graphical operating software
PC configuration	CPU > 2.2 GHz (dual-core prosessor; Memory > 1Gb, Hard disk > 160 Gb, LCD > 17 inch, lazer printer (optional)
System connection	TCP/IP network connection



Multi functional refrigerated double reagent trays

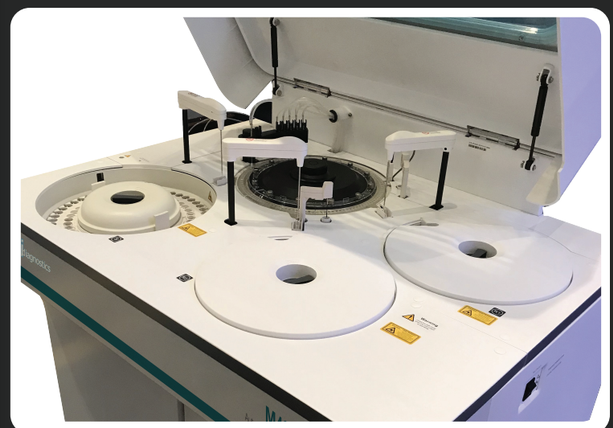
- Double disks 112 positions for R1, R2, R3, R4
- Continuous cooling with Peltier element
- Internal reagent barcode reader (optional)

Reaction cuvette unit

- 120 cuvette reactions
- Volume as low as 120µl
- Using recycling water constant temperature device, automatically changing water and adding defoamer
- Cuvette is emerged into warm water which heats the cup and reduces the ambient temperature influence
- PID thermostat technology ensures temperature at 37°C ± 0.1°C
- Automatic reaction cuvette rinsing with 7 stops 12 steps by warm water
- Vacuum draining liquid and warm water high pressure rinsing enhance cleaness

Multi functional refrigerated sample tray

- 115 sample positions: 50 routine sample; 20 STAT; 8 QC; 34 calibration; 3 detergent
- QC and calibration positions are maintained at 5-15°C
- Automatic dilution
- LED indicator for sample disk spinning, ensure the safety of inputting sample at any time
- Internal sample barcode reader (optional)



Multi functional reagent/ sample probe

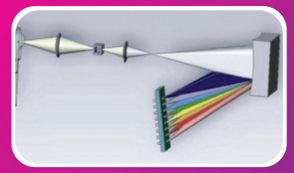
- 3 stand-alone probes, two for reagent and one for sample. Probes contain collision protection function, self-resetting, automatically re-pipetting sample and reagent
- Automatic polish with nano processing technology, internal and external washing help reduce cross-contamination effectively
- Automatic liquid level detection with sensor, monitoring remained volume of reagent/ sample and alarm if inadequate reagent/ sample volume
- Intelligentized clot detection: Pipetting tube with pressure sensor detect the status of clot.
- Water degassing technology: equiped with special degassing device to remove the air disolved in the tube system, ensure quick, accurate and small volume pipeting

Double stirrer

- 2 stand-alone stirrers stirring immediately after add reagent to mix the reaction solution well
- Stirrer surface is telfon coated to avoid liquid suspension and reduce cross-contamination
- “Flat paddle” design and swirl rinsing, the best cleaning effect.

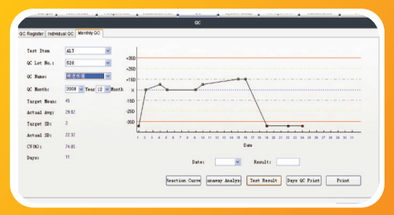
ISE Module (Option)

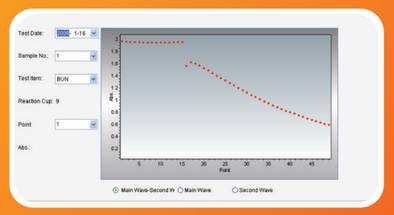
- Parameters: K, Na, Cl (or Li)
- Through-put: up to 400 tests/ hour
- Sample consumption: 15µL serum/ urine
- 3 syringes for ion reagent sampling. Syringe is made of long-life porcelain to keep high precision and low maintenance cost
- Temperature: 37°C
- Automatic rinsing and calibration



Photometry system

- Measuring technology: monochromator with holographic concave flat field grating, spectrophometric 12 ways
- parallel, reduce ambient light interference to get better accurate result.
- Point light source to reach super-microanalysis, total reaction volume is less than 120 µL, save more reagent.
- Light source: 20W/ 12V Halogen lamp, long-life
- 12 ways photodiode array detector, 12 ways high dynamic range logarithmic amplifier, the range can reach 3.6Abs without distortion, ensure high concentration sample testing without data overflow.
- Rigid plastic reaction cuvette with good penetrating of UV, resistance against acid and alkali and long-life span

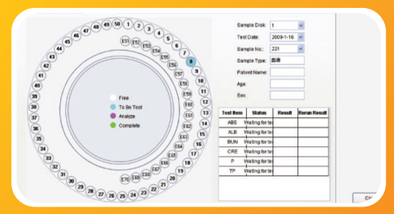


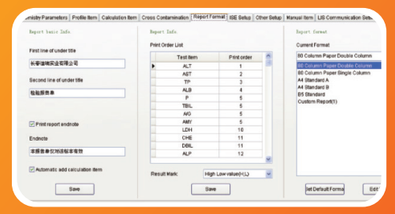


Calibration and QC functions

- Linear and non linear calibration, which can be set up with time, reagent lot No., etc…, with flexible calibration methods
- 9 types of calibration with 6 different levels’calibrator
- Tracing function, depicting calibration K value variation trends helps reduce system error
- Real time, today, days QC function
- QC rule: default as Westgard multi rules
- QC plot: automatic depict and print relative QC plot, L-J, Cumulative, Twin Plot
- Automatic storage of the reason for out of control and primary date.

M400





Software System

- Simple Interface and user friendly
- Real-time online help system
- Simple and easy software operating
- Multiple report formats, user-defined function
- Multiple self-monitoring functions
- Automatic execute super linear limit, super limit reference, substrate depletion, antigen surplus, no reaction equilibrium point auditing program
- Serum checking function, remove intereference from hemolysis, blood lipid, jaundice
- Against cross-contamination program, avoid interference from different reagent
- Automatic alarm during running process with explanations displayed
- User authority hierarchical management