BS-400
Chemistry Analyzer

Technical Specifications

System function:

Fully automated, Discrete, Random Access, for routine, STAT, urine and homogeneous Immuno Assays
STAT sample priority

Throughput: 400 tests/hour, up to 640 tests/hour with ISE

Measuring principles:
Absorbance photometry, Turbidimetry

Methodology: End-point, Fixed-time, Kinetic, optional ISE
Single/Dual/Triple/Quadruple reagent chemistries, monochromatic / bichromatic

Programming: User defined profiles and calculation chemistries

Sample Handling:

Sample tray: 90 positions for primary tubes or secondary cups

Sample volume: 2~45μl, step by 0.1μl

Sample probe: liquid level detection, clot detection and collision protection

Probe cleaning: automatic washing for both inside and outside, carry over ≤ 0.1%

Automatic sample dilution:
pre-dilution and post-dilution
dilution ratio up to 150

dilution vessel: cuvette

Internal bar code reader:

Used for sample and reagent programming
Applicable to various bar code systems of Codabar、ITF (Interleaved Two of Five)、code128、code39、UPC/EAN、Code93
Capable to link in LIS bi-directional mode

ISE Module:

Optional selection for K^+, Na^+, Cl^-, or K^+, Na^+, Cl^-, Li^+

Throughput: Up to 320 tests per hour

Reagent Handling:

Reagent tray: 80 positions in refrigeration compartment (4~10℃)

Reagent volume: R1: 150~350μl, step by 1μl
R2/R3/R4: 20~350μl, step by 1μl
2 independent reagent probes

Reagent probe: liquid level detection and collision protection
Inventory checking

Probe cleaning: automatic washing for both inside or outside
carry over ≤ 0.1%

Reaction System:

Reaction rotor: rotating tray, 90 cuvettes with automatic washing

Cuvette: optical length 5mm

Reaction volume: 150~360μl

Operating temperature: 37℃

Temperature fluctuation: ±0.1℃
2 independent mixing bars

Optical System:

Light Source: Halogen-tungsten lamp

Photometer: reversed optics, grating photometry

Wavelength: 340nm、380nm、412nm、450nm、505nm、546nm、570nm、605nm、660nm、700nm、740nm、800nm

Absorbance range: 0~3Abs (10mm conversion)
Resolution: 0.001Abs

Control and Calibration:

Calibration mode: linear (one-point, two-point and multi-point), Logit-Log 4P, Logit-Log 5P, spline, exponential, polynomial, parabola

Control rules: Westgard multi-rule, Cumulative sum check, twin plot

Operation Unit:

Operation system: Windows 2000 Professional or Windows XP

Interface: RS-232

Working Conditions:

Power Supply: 200-240V~, 50Hz, 1500VA
or 220/230V~, 60Hz, 1500VA
or 110/115V~, 60Hz, 1500VA

Temperature: 15-30℃

Humidity: 35-80%

Water consumption: 23L/hour Deionized water

Dimension: 1180mm x700mm x1145mm (WxDxH)

Weight: 300kg

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BS-400 NEW
Chemistry Analyzer

MINDRAY

BS-400

Chemistry Analyzer

- Discrete, random access, fully automated
- 400 tests per hour, up to 640 tests per hour with ISE
- Up to 77 onboard chemistries and 4 ions
- Refrigerated reagent compartment
- Onboard capacity of 90 sample positions
- Automatic probe cleaning, liquid level detection, clot detection & collision protection from both vertical and horizontal directions
- 8-step auto washing system
- 12wavelengths: 340-800nm
- Automatic dilution for abnormal sample
- Internal bar code reader (optional)
- LIS interface bi-directional

High performance mixer design

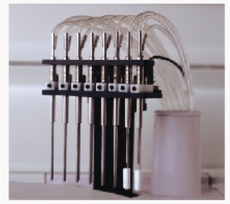
- Optimal homogenization in minimum time
- High precision mixer station to ensure excellent reaction conditions
- Standardized mixing procedures across the whole range of analyzers
- The two mixers will function immediately after the sample and reagent pipetted in

High quality ISE Module

- Optional selection for K^+, Na^+, Cl^- or K^+, Na^+, Cl^-, Li^+
- Throughput: Up to 240 or 320 tests per hour
- 6 months shelf life

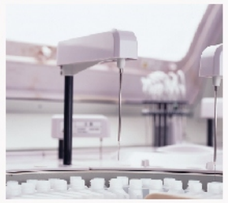
Refrigerated reagent tray

- 80 reagent positions for R1, R2, R3, R4
- 24 hour non stop cooling with Peltier element
- Ready to use liquid stable reagents
- Internal reagent bar code reader(optional)



Washing station

- High tech wash station to warrant accurate results and ensure valid diagnostics
- Two different detergents to prevent any carry over
- 8 step water cleaning

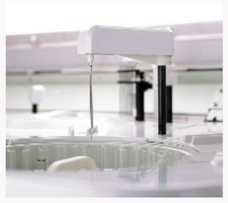


Multi-function reagent probe

- Internal and external probe washing
- Liquid level detection
- Collision protection
- Inventory monitoring
- Reagent volume as small as 20μl
- Probe depth adjustment automatically

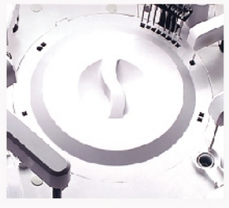
Multi-function sample tray

- 90 sample positions
- Can be programmed in the 5 virtual sample trays
- Primary tube and various sample cup can be used
- Automatic dilution of high concentration sample
- Pre-dilution for calibrator and sample
- Internal sample bar code reader(optional)



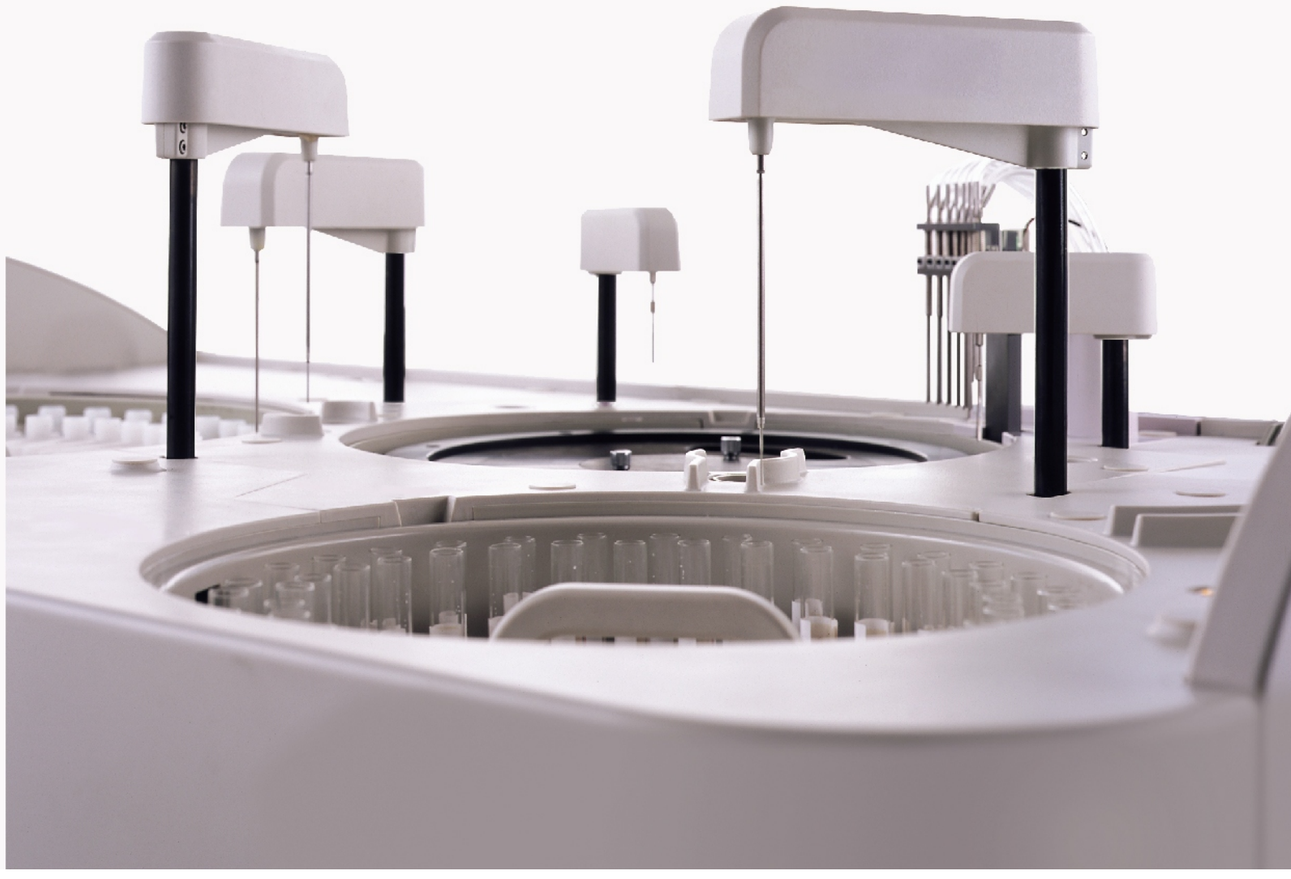
Multi-function sample probe

- Internal and external probe washing
- Liquid level detection
- Clot detection
- Collision protection
- Probe depth adjustment automatically
- Sample volume as small as 2.0μl



Reaction tray

- Test sequence optimization that reduces carry over
- Total reaction volume as small as 150μl
- Contain 90 reaction cuvettes
- Maintenance free heater elements



Sample of Test Menu

Proteins & Immunoglobulins

Total Protein	TP
Albumin	Alb
Myoglobin	Mb
Immunoglobulin A	Ig A
Immunoglobulin G	Ig G
Immunoglobulin M	Ig M
Immunoglobulin E	Ig E
Complement C3	C3
Complement C4	C4
C Reactive Protein	CRP
Rheumatoid Factor	RF
Anti Streptolysin O	ASO

None-Protein Nitrogen

Urea	Ure
Uric Acid	UA
Creatinine	Cre
Blood Urea Nitrogen	BUN
Total Bilirubin	TB
Direct Bilirubin	DB

Lipids

Total Glyceride	TG
Phospholipid	PL
Free Fatty Acid	FFA
Total Cholesterol	TC
Free Cholesterol	FC
High Density Cholesterol	HDL
Low Density Cholesterol	LDL
β-Lipoprotein	β-Lipo
Apolipoprotein A I	ApoA I
Apolipoprotein A II	Apo A II
Apolipoprotein B	Apo B
Apolipoprotein C II	Apo C II
Apolipoprotein C Ⅲ	Apo C Ⅲ
Apolipoprotein E	Apo E
Total Bile Acid	TBA
Lipoprotein (a)	Lp (a)

Glucide

Glucose	Glu
Sialoid Acid	SiA
Fructose	FRA

Enzymes

Alanine aminotransferase	ALT
Aspartate aminotransferase	AST
Alkaline phosphatase	ALP
Acid phosphatase	ACP
Adenosine Deaminase	ADA
Amylase	Amy
Amylase-pancreatic	Amy-p
Gamma-Glutamyl Transferase	γ-GT
Creatine Kinase	CK
Creatine Kinase-MB	CK-MB
Choline Esterase	ChE
Lactate Dehydrogenase	LDH
α-hydroxybutyric dehydrogenase	α-HBDH
Monoamine Oxidase	MAO
Lipase	Lip
Leucine aminopeptidase	Lap
N-Acetyl-β-Glucosaminidase	NAG

Electrolytes & Minerals

Natrium	Na
Kalium	K
Chloride	Cl
Calcium	Ca
Magnesium	Mg
Phosphate	P
Iron	Fe
Unsaturated Iron Binding Capacity	UIBC
Transferrin	Tf
Copper	Cu

Drugs

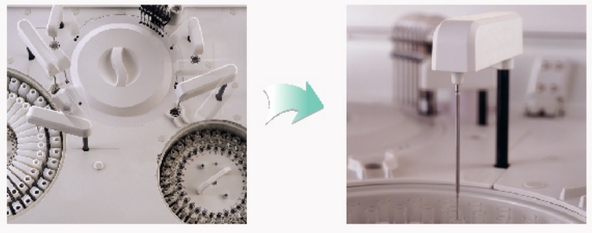
Alcohol	ALC
Amphetamines	AMP
Barbiturates	BAR
Benzodiazepine	BZO
Cocaine Metabolite	COC
Methadone	MTD
Methaqualone	MTQ
Phencyclidine	PCP
Propoxyphene	PPX

Others

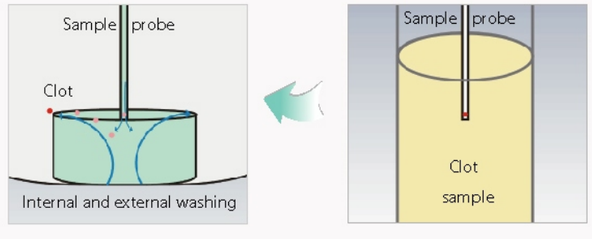
Glycosylated hemoglobin A1c	HbA1c
nonglycosylated hemoglobin	HbAo
Urine-Albumin	U-Alb
Ratio of Branched-chain Tyrosine amino acids to	BTR

Convenient to use: real time monitoring of working status, emergency tests are enabled by the LED lightening.

Reusable cuvettes: high performance and accurate result.

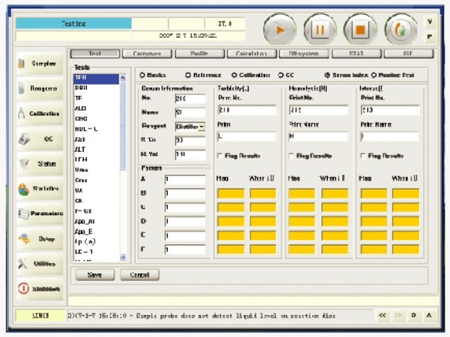


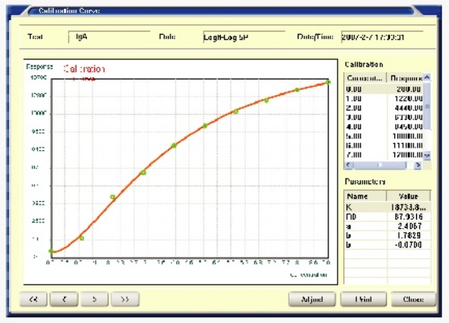
Clot detection: to avoid incorrect reaction at the very beginning of the process.

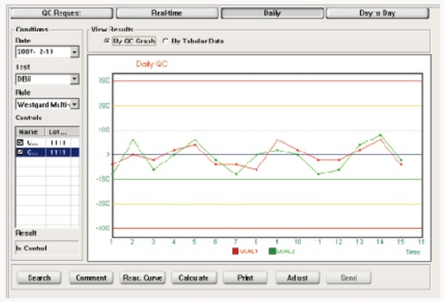


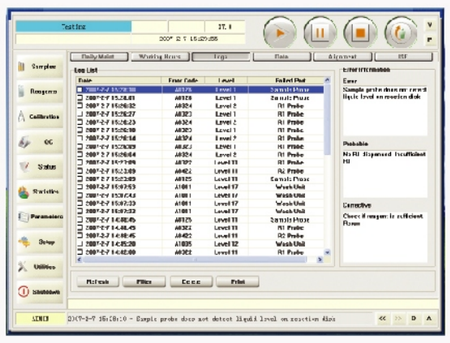
Comprehensive and sophisticated software program

- Serum indices detection function;
- Intelligence to extend the linearity range for enzyme tests automatically;
- Multi-point calibration: up to 10 points;
- Auto rerun: in commensurate / increasing / decreasing mode;
- Power-off memory protection: in case of emergency shutdown, the system quickly stores all the current information. When powered on again, it will carry over unfinished tests without requesting again;
- Reaction trend graph for patient's history results;
- Comprehensive indications for out-of-control results, and detailed causation record;
- Automatic alarm during running process, with explanations when clicking it;
- Multi-media training materials (Chinese / English), easy for learning and operating;



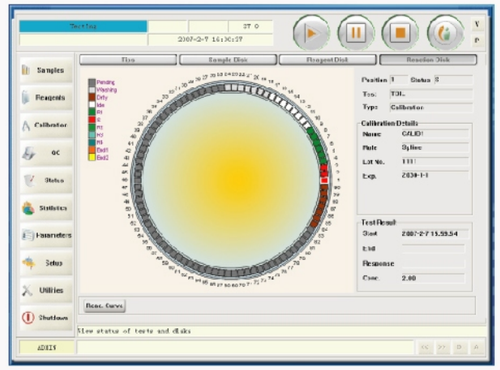


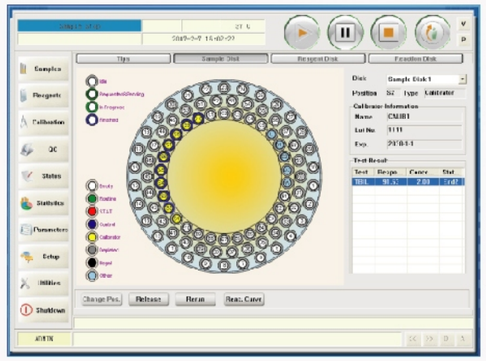


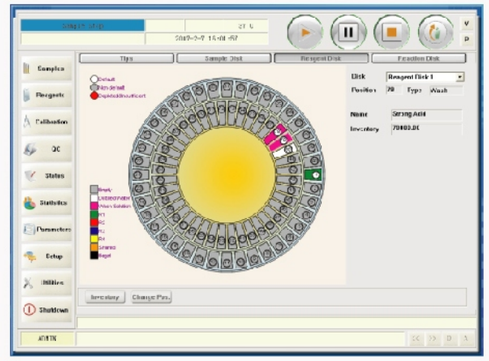


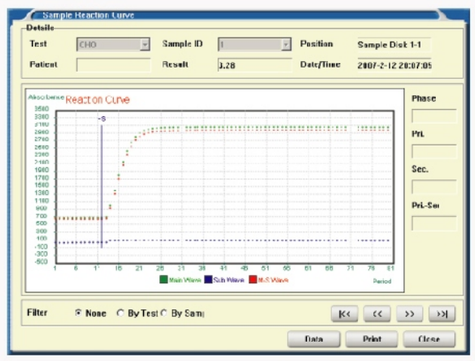
Dynamic and real time display of running status

- Running status of reagent tray, sample tray and reaction tray;
- Real time monitoring of reagent residual volume;
- Optimum test sequence setting program to avoid carry over.









Original reaction data record

- Real time monitoring of reaction curve;
- Simultaneously display primary and secondary wavelengths to avoid interference;
- Detailed profile of alert messages;
- Real time diagnosis of system working status.