

BS-300

Chemistry Analyzer

Technical Specifications

System Function:

Automated, discrete, random access for routine, STAT, urine and homogeneous immuno assays; STAT sample priority

Throughput: 300 tests/hour, up to 420 tests/hour with ISE

Measuring principles: Absorbance photometry, Turbidimetry

Methodology: End-point, Fixed-time, Kinetic, Single/Dual reagent chemistries, Monochromatic/Bichromatic, Linear/Non-linear multi-point calibration

Programming: User defined profiles and calculation

Sample Handling:

Sample tray: 60 positions for primary or secondary tubes and sample cups

Sample volume: 2~45µl, step by 0.1 µl

Sample probe: Liquid level detection and collision protection

Probe cleaning: Interior and exterior wash, carry-over < 0.1%

Automatic sample dilution:

Pre-dilution and post-dilution

Dilution ratio up to 3 : 225

Dilution vessel: Cuvette

Internal bar code reader (optional):

Used for sample programming

Applicable to various bar code systems of code 128, code 39, code 93, codabar, ITF, UPC/EAN

Capable to link with LIS in a bi-directional mode

ISE Module(optional):

Optional selection for K⁺, Na⁺, Cl⁻

Throughput: Up to 180 tests per hour

Reagents Handling:

Reagent tray: 50 positions in refrigerated compartment (2~10°C)

Reagent volume: 10~450µL, step by 1µL

Reagent probe: Liquid level detection and collision protection reagent pre-heating and inventory checking

Probe cleaning: Interior and exterior washing carry-over< 0.1%

Reaction System:

Reaction rotor: Rotating tray, 80 disposable cuvettes with automatic loading

Cuvette: Optical length 5mm

Reaction volume: 150~500µL

Operating temperature: 37± 0.1°C

Mixing: Independent mixing bar

Optical System:

Light Source: Halogen-tungsten lamp

Photometer: Reversed optics, static fiber spot photometry

Wavelength: 340, 405, 450, 510, 546, 578, 630, 670, 700nm

Resolution: 0.001 Abs

Control and calibration:

Calibration mode: Linear (one-point, two-point and multi-point), Logit-Log 4P, Logit-Log 5P, Spline Exponential 5P, Polynomial 5P, Parabola

Control software: X-R, Westguard multi-rule, Cumulative sum check, Twin plot

Operation Unit:

Operation system: Windows® XP Professional/Home SP2 or above Windows® 7 Home basic 32 bits

Interface: RS-232

Working Conditions:

Power Supply: 200~240V, 50/60Hz, 1000W or 100~130V, 50/60Hz, 1000W

Temperature: 15~30°C

Humidity: 35~85%

Water consumption: 3.5 L/hour

Dimension: 980mm x 710mm x 1200mm (W x D x H)

Weight: 186 Kg



BS-300

Chemistry Analyzer

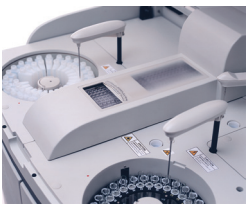
BS-300

Chemistry Analyzer

- Discrete, random access, fully automated
- 300 tests per hour, up to 420 tests per hour with ISE
- Up to 50 onboard chemistries and 3 ions
- Refrigerated reagent compartment
- Onboard capacity of 60 sample positions
- Automatic probe cleaning, liquid level detection & collision protection



- 9 wavelengths: 340~700nm
- Automatic dilution for abnormal sample
- External hand-held /Internal bar code reader (optional)
- Bi-directional LIS interface
- Low carry-over



Unique and intelligent cuvette loading system

- Disposable cuvette to avoid carry-over
- Up to 30 segments on board (300 cuvettes)
- Automated cuvette blank check
- Intelligent cuvette loading



High performance mixer design

- Optimal homogenization in minimum time
- Avoid cross contamination
- Function immediately (within the same sampling cycle) after sample or the second reagent dispensed



Internal bar code reader

- Used for sample programming
- Applicable to various bar code systems of code 128, code 39, code 93, codabar, ITF, UPC/EAN
- Capable to link with LIS bi-directional



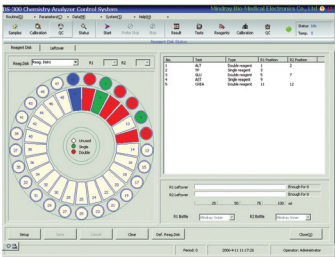
Refrigerated reagent tray

- 50 reagent positions for R1 and R2
- 24 hour non-stop cooling with Peltier element
- Automatic reagent residue volume monitoring



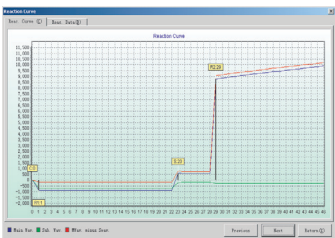
ISE Module

- Optional selection for K⁺, Na⁺, Cl⁻
- Throughput: Up to 180 tests per hour



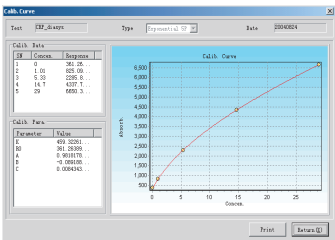
Dynamic and real-time display of running status

- Running status of sample tray, reagent tray and reaction tray
- Real-time monitoring of reagent residual volume and reaction temperature control curve



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



Optimum calibration curve

- Selection of calibration methods; Factor, Linear, Point to Point, Spline, Log Logit, Exponential

Mindray solution for clinical chemistry

After more than 10 years of research and development on reagents, Mindray can now provide 48 parameters of dedicated reagents(more than 17 others are coming), covering hepatic, renal, cardiac, lipids, diabetes, pancreatitis, inorganic ions and immunalassays, etc.,together with original calibrators with metrological traceability as well as controls for BS-300 chemistry analyzer.



Original Calibrators with traceability:

Reference Method (Certified by 'Joint Committee for Traceability in Laboratory Medicine' (JCTLM))

- International Federation of Clinical Chemistry and Laboratory Medicine (IFCC)
- National Institute of Standards and Technology(NIST)
- Centers for Disease Control and Prevention (CDC, USA)
- American Association for Clinical Chemistry (AACC)

Reference Material

- Institute for Reference Materials and Measurements (IRMM) standards
- National Institute of Standards and Technology (NIST) standards
- World Health Organization (WHO) standards
- Japan Committee for Clinical Laboratory (JCCLS) standards

Chemistry Reagents

Hepatic	Lipids
Alanine Aminotransferase (ALT) Aspartate Aminotransferase (AST) Alkaline Phosphatase (ALP) γ-GlutamylTransferase (γ-GT) Direct Bilirubin (D-Bil) DSA Method Direct Bilirubin (D-Bil)VOX Method Total Bilirubin (T-Bil) DSA Method Total Bilirubin (T-Bil)VOX Method Total Protein (TP) Albumin (ALB) Total Bile Acids (TBA) Prealbumin (PA) Cholinesterase (CHE) Adenosine deaminase (ADA) * α-L-fucosidase (AFU) * 5'-nucleotidase (5'-NT) *	Total Cholesterol (TC) Triglycerides (TG) HDL-Cholesterol (HDL-C) LDL-Cholesterol (LDL-C) Apolipoprotein A1 (ApoA1) Apolipoprotein B (ApoB) Lipoportein(a) [LP(a)]
	Pancreatitis
	α-Amylase (α-AMY) Lipase (LIP)
	Diabetes
	Glucose (Glu) GOD-POD Method Glucose (Glu) HK Meth Hemoglobin A1c (HbA1c) Fructosamine (FUN)
	Inorganic ions
	Calcium (Ca) Magnesium (Mg) Phosphate Inorganic (P)
	Rheumatism
	High sensitivity C-reactive protein (hs-CRP) * Rheumatoid Factor (RF) Antibodies Against Streptolysin O (ASO)
	Immune
	Immunoglobulin A (IgA) Immunoglobulin G (IgG) Immunoglobulin M (IgM) Immunoglobulin E (IgE) * Complement C3 (C3) Complement C4 (C4) C-Reactive Protein (CRP)
	Others
	Glucose-6-phosphate dehydrogenase (G6PD) * D-dimer* Angiotensin converting enzyme (ACE) * Retinol binding protein (RBP) * D3-hydroxybutyric acid (D3-HB) *
Renal	
Urea (UREA) Creatinine (CREA) Modified JafféMethod Creatinine (CREA)Sarcosine OxidaseMethod Uric Acid (UA) Carbon dioxide (CO2) Microalbumin* β2-Microglobulin (β2-MG) * Cystatin C (CysC) *	
Cardiac	
Creatine Kinase (CK) Creatine Kinase-MB (CK-MB) Lactate Dehydrogenase (LDH) α-Hydroxybutyrate Dehydrogenase(α-HBDH) Homocysteine (HCY) Myoglobin*	
Ferrum	
Iron (Fe) Ferritin (FER) * Transferrin (TRF) * Total iron binding capacity / unsaturated ironBinding capacity (TIBC/UIBC) *	

* Coming soon