

BS-200

Chemistry Analyzer

Technical Specifications

System Function:

	Automatic, Discrete, Random Access STAT sample priority
Throughput:	Up to 200 tests/hour (without ISE), up to 330 tests/hour with ISE
Measuring principles:	Absorbance photometry, Turbidimetry, Ion Selective Electrode technology
Methodology:	End-point, Fixed-time, Kinetic, optional ISE Single/Dual reagent chemistries, monochromatic/bichromatic Linear/non-linear multi-point calibration
Programming:	Open system with user defined profiles and calculation chemistries

Reagent/Sample Handling:

Reagent/Sample tray:	40 positions for reagents and 40 positions for samples in refrigerated compartment (2~12°C)
Reagent volume:	
R1:	10~450µl, step by 1 µl
R2:	10~450µl, step by 1 µl
Sample volume:	2~45µl, step by 0.1 µl
Reagent/Sample probe:	Liquid level detection, collision protection and inventory checking
Probe cleaning:	Automatic washing for both interior and exterior Carry-over < 0.1%
Automatic sample dilution:	Pre-dilution and post-dilution Dilution ratio up to 1: 200
Dilution vessel:	Disposable cuvette

Internal Bar Code Reader (optional):

	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 communicate with LIS in bi-directional mode
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ISE Module (optional):

Measure K ⁺ , Na ⁺ , Cl ⁻	
Throughput:	Up to 225 tests per hour

Reaction System:

Reaction rotor:	Rotating tray, containing 80 cuvettes
Cuvette:	Optical length 5mm
Reaction volume:	150~500µl
Reaction temperature:	37°C
Temperature fluctuation:	±0.1°C

Mixing System:

	Independent mixing bar
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Optical System:

Light Source:	Halogen-tungsten lamp
Photometer:	Reversed optics, static fiber spot photometry
Wavelength:	340nm、405nm、450nm、510nm、546nm、 578nm、630nm、670nm
Absorption range:	0~4.0Abs (10mm conversion)
Resolution:	0.0001Abs

Control and Calibration:

Calibration mode:	Linear (one-point, two-point and multi-point), Logit-Log 4P, Logit-Log 5P, Spline, Exponential, Polynomial, Parabola
Control software:	Westgard multi-rule, Cumulative sum check, Twin plot

Operation Unit:

Operation system:	Windows® XP Professional/Home SP2 or above Windows® VISTA, Windows® 7
Interface:	RS-232

Working Conditions:

Power Supply:	AC 200~240V, 50/60Hz, 1000VA or AC 100~130V, 50/60Hz, 1000VA
Temperature:	15-30°C
Humidity:	35-85%
Water consumption:	3.5L/hour
Dimension:	Bench top: 860mm (W) x700mm (D) x625mm (H)
Floor standing:	860mm (W) x700mm (D) x1160mm (H)
Weight:	Bench top: 110 Kg
Cabinet (optional):	51 Kg



BS-200

Chemistry Analyzer



PT. MULTIMEDILAB KARYAMANDIRI
MEDICAL & LABORATORY EQUIPMENTS

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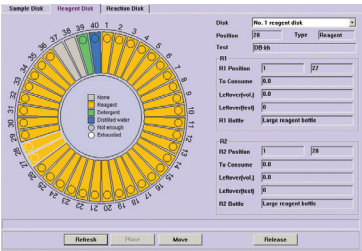


mindray
healthcare within reach

BS-200

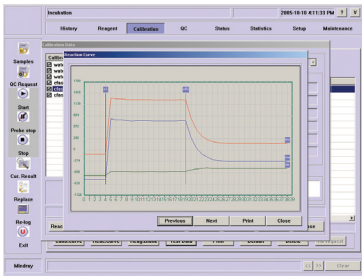
Chemistry Analyzer

- Discrete, random access, fully automated
- 200 tests per hour, up to 330 tests per hour with ISE
- Optional for ISE module and internal bar code reader
- 40 positions for samples and reagents respectively
- Automatic probe cleaning, liquid level detection, collision protection
- Reversed optic system with 8 wavelengths: 340~670nm
- Refrigerated reagent and sample compartment
- Bi-directional LIS interface



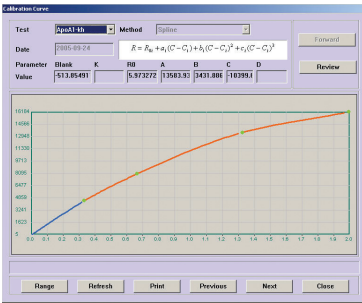
Dynamic and Real-time display of running status

- Running status of reagent tray, sample tray and reaction tray
- Real-time monitoring of reagent residual volume
- Probe depth adjusted automatically



Original reaction data record

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



Optimum calibration curve

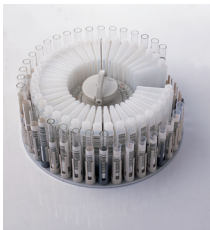
Calibration classification:

- Linear curve type: One-point linear, Two-point linear and Multi-point linear.
- Nonlinear curve type: Logistic-Log 4P、Logistic-Log5P、Exponential 5P、Polynomial 5P and Spline.



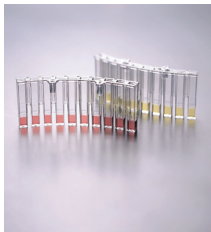
High quality ISE Module (optional)

- Measuring K+, Na+, Cl-
- Throughput: up to 225
- 6 months shelf life



Multi-functional sample/reagent tray

- Optional internal reagent/sample bar code reader
- 40 positions for samples and reagents respectively
- Primary tubes and various sample cups can be used, non-fixed positions for samples, control, calibrators and STAT
- 24 hour non-stop cooling with Peltier elements



Disposable reaction cuvettes

- Disposable cuvettes to avoid carry-over and to save operating costs
- Automatic cuvettes blank checking to assure precise results

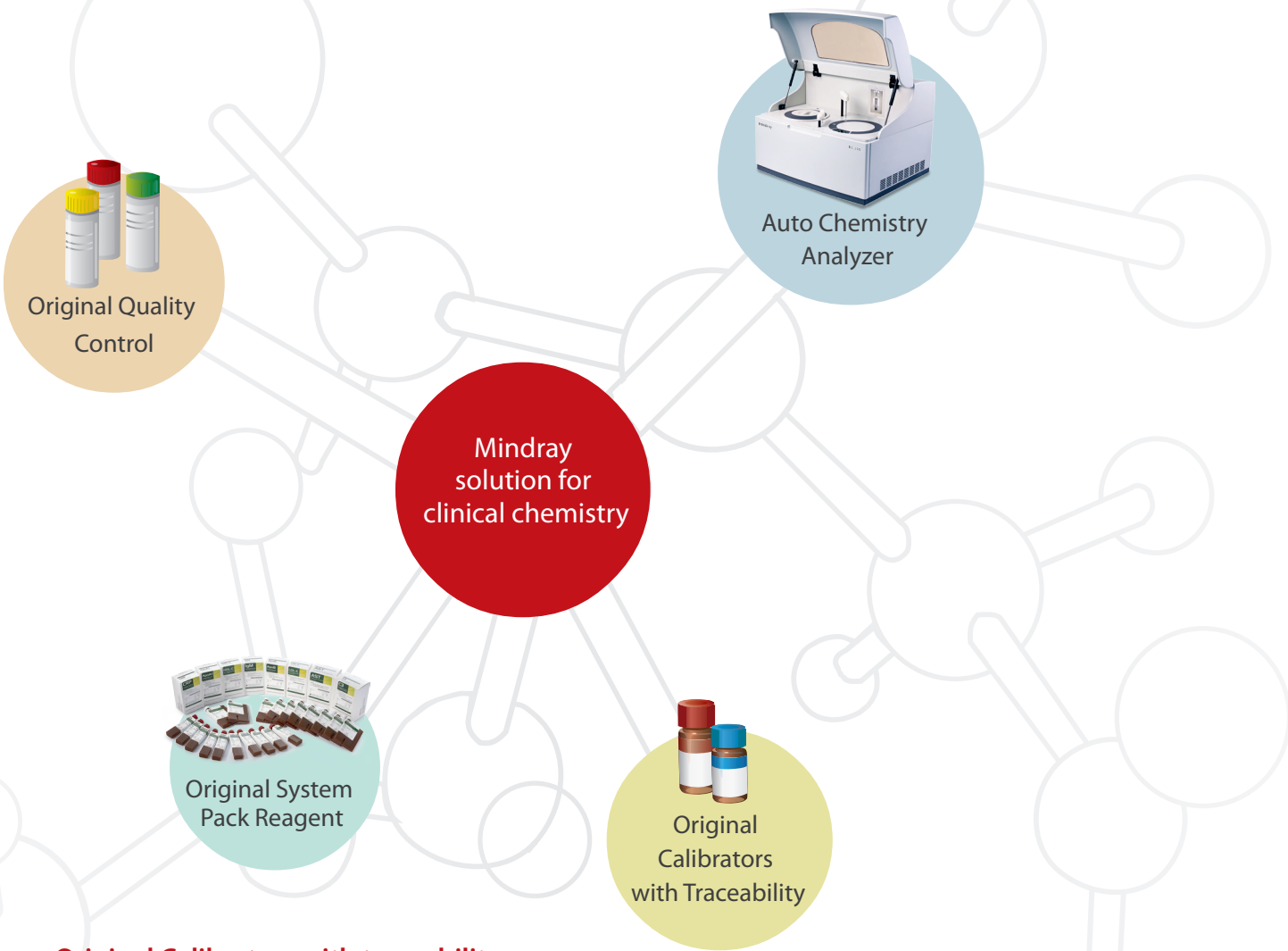


High performance mixer design

- Avoid cross contamination
- Optimal homogenization in minimum time
- Function immediately (within the same period)

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-200 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) *

* Coming soon