

BS-120

Chemistry Analyzer

Technical Specifications

System Function:

Automatic, discrete, random access, STAT sample priority

Throughput: Up to 100 tests/hour (without ISE), up to 300 tests/hour with ISE (3 ions)

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 multipoint calibration

Programming: Open system with user defined profiles and calculations

Reagent/Sample Handling:

Reagent/Sample tray: Up to 33 positions for sample, up to 35 positions for reagent; 24 hour non-stop refrigerated compartment (4~15°C)

Reagent volume: R1: 180~450µl, step by 1µl
R2: 30~250µl, step by 1µl

Sample volume: 3~45µl, step by 0.5µl

Reagent/Sample probe: Liquid level detection, collision protection and inventory checking

Probe cleaning: Automatic washing both interior and exterior
Carry-over < 0.1%

Automatic sample dilution: Pre-dilution and post-dilution
dilution ratio up to 1: 150

Dilution vessel: Disposable cuvette

External Bar Code Reader (optional):

Used for sample and reagent programming; Applicable to various bar code systems including Codabar, ITF (Interleaved Two of Five), Code128, Code39, UPC/EAN, Code93; capable to communicate with LIS in a bi-directional mode

ISE Module (optional):

Measure parameter: K⁺, Na⁺, Cl⁻

Reaction System:

Reaction rotor: Rotating tray, containing 40 cuvettes

Cuvette: Optical length 5mm

Reaction volume: 180~500µl

Reaction temperature: 37±0.1°C

Mixing system: Independent mixing bar

Optical System:

Light Source: Halogen-tungsten lamp

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

Linear range: 0~3.5Abs

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® XP Professional/Home SP2, Windows® 7 or above Windows® VISTA Home/Business

Interface: RS-232

Working Conditions:

Power Supply: AC 200~240V, 50/60Hz, 800W or AC 100~130V, 50/60Hz, 800W

Temperature: 15~30°C

Humidity: 35~85%

Water consumption: 2.5L/hour

Dimension: Bench top: 690mm(W)x570 mm(D)x595 mm(H)

Weight: 75 Kg



BS-120

Chemistry Analyzer

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Mindray is listed on the NYSE under the symbol "MR"

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P/N: ENG-BS120-210285x6-20130303



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BS-120

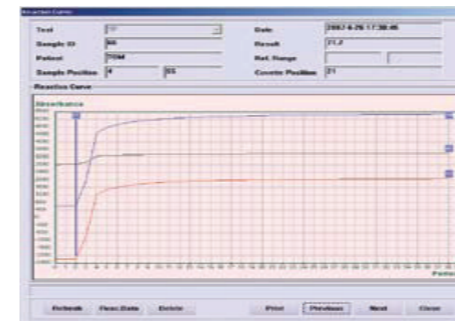
Chemistry Analyzer

- Discrete, random access, fully automated
- 100 tests per hour, up to 300 tests per hour with ISE
- Up to 33 onboard chemistries and 3 ions
- Refrigerated reagent compartment
- Flexible configuration for sample/reagent positions
- Automatic probe cleaning, liquid level detection & collision protection
- 8 wavelengths: 340~670nm
- Automatic dilution for abnormal sample
- External bar code reader (optional)
- Bi-directional LIS interface



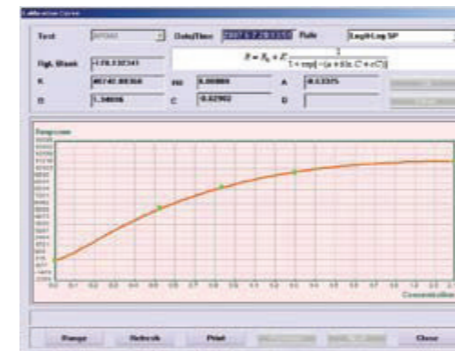
Dynamic and Real-time display of running status

- Running status of reagent/sample tray and reaction tray
- Real-time monitoring of reagent residual volume
- Real-time diagnosis of system working status



Original reaction data record

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



Optimum calibration curve

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



Flexible sample/reagent tray

- Optional external reagent/sample bar code reader
- Up to 33 positions for sample, up to 35 positions for reagent
- Up to 20/10 virtual sample/reagent trays can be programmed
- 24 hour non-stop cooling with Peltier elements



High quality ISE module (optional)

- Measurements of K+, Na+, Cl-
- 6 months shelf life



Disposable reaction cuvettes

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

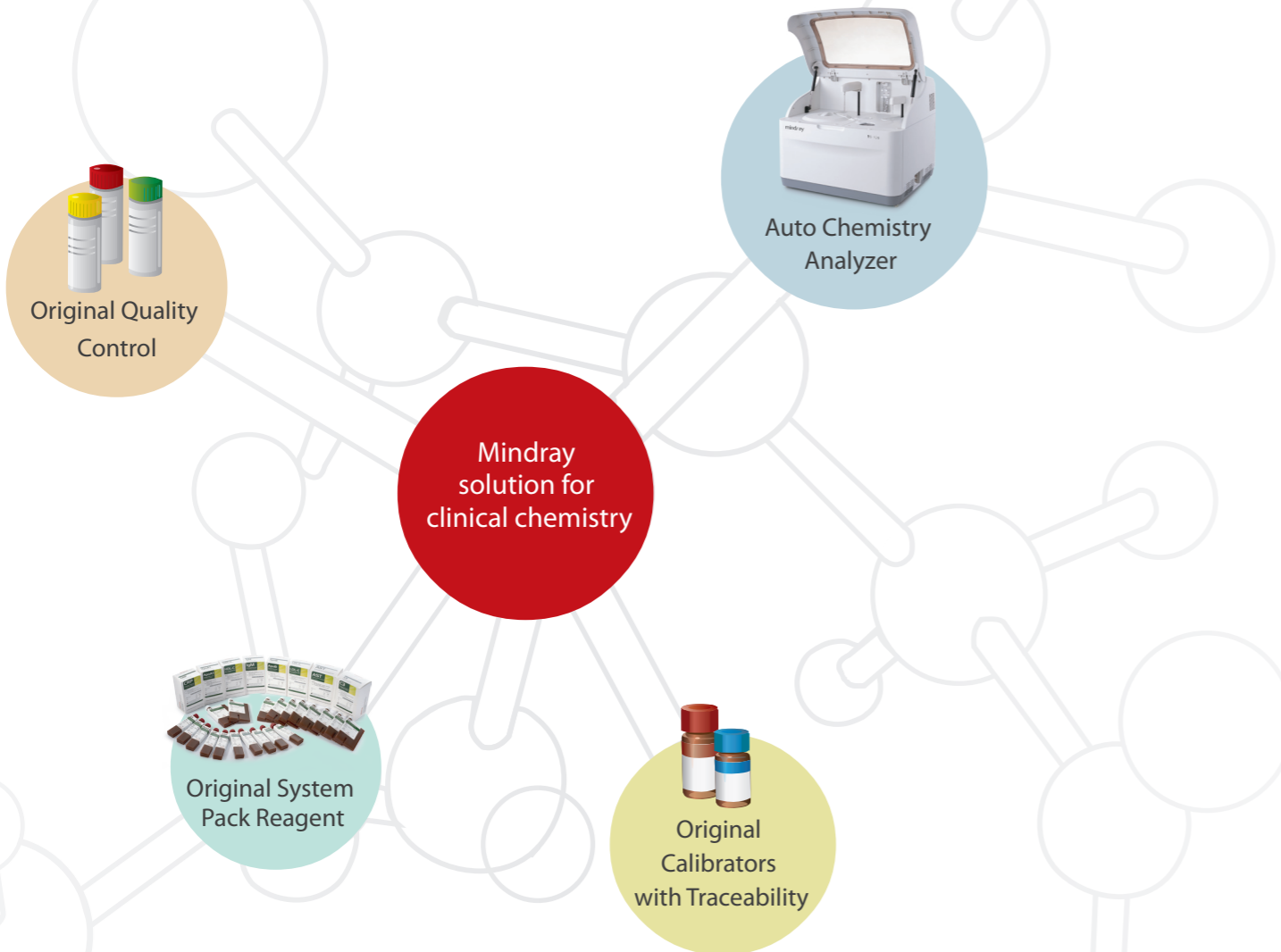


High performance mixer design

- Avoid cross contamination
- Optimal homogenization in minimum time
- Thoroughly mixes after dispensing of sample or second reagent

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 immunoassays, etc., together with original calibrators with metrological traceability as well as controls for BS-120 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

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)
 Adenosine deaminase (ADA) *
 α-L-fucosidase (AFU) *
 5'-nucleotidase (5'-NT) *

Renal

Urea (UREA)
 Creatinine (CREA) Modified Jaffé Method
 Creatinine (CREA) Sarcosine Oxidase Method
 Uric Acid (UA)
 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)
 Myoglobin*

Ferrum

Iron (Fe)
 Ferritin (FER) *
 Transferrin (TRF) *
 Total iron binding capacity / unsaturated iron
 Binding capacity (TIBC/UIBC) *

Lipids

Total Cholesterol (TC)
 Triglycerides (TG)
 HDL-Cholesterol (HDL-C)
 LDL-Cholesterol (LDL-C)
 Apolipoprotein A1 (ApoA1)
 Apolipoprotein B (ApoB)
 Lipoprotein(a) [LP(a)]

Pancreatitis

α-Amylase (α-AMY)
 Lipase (LIP)

Diabetes

Glucose (Glu) GOD-POD Method
 Glucose (Glu) HK Meth
 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