

Chemistry Reagents

Hepatic Panel
Alanine Aminotransferase (ALT)
Aspartate Aminotransferase (AST)
Alkaline Phosphatase (ALP)
γ-Glutamyl Transferase (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)

Renal Panel
Urea (UREA)
Creatinine (CREA) Sarcosine Oxidase Method
Uric Acid (UA)
Carbon Dioxide (CO2)
Microalbumin (MALB)
β2-Microglobulin (β2-MG)
Cystatin C (CysC)
Retinol Binding Protein (RBP)
Total Protein In Urine & CSF (TPUC)

Cardiac Panel
Creatine Kinase (CK)
Creatine Kinase-MB (CK-MB)
Lactate Dehydrogenase (LDH)
α-Hydroxybutyrate Dehydrogenase (α-HBDH)
High Sensitivity C-reactive Protein (HS-CRP)

Diabetes Panel
Glucose (Glu) GOD-POD Method
Glucose (Glu) HK Method
Hemoglobin A1c (HbA1c)
Fructosamine (FUN)
β-Hydroxybutyrate (β-HB)

Inorganic & Anemia
Iron (Fe)
Ferritin (FER)
Transferrin (TRF)
Calcium (Ca)
Magnesium (Mg)
Phosphate Inorganic (P)
Unsaturated Iron Binding Capacity (UIBC)
Glucose-6-phosphate Dehydrogenase (G6PD)

Lipid Panel
Total Cholesterol (TC)
Triglycerides (TG)
HDL-Cholesterol (HDL-C)
LDL-Cholesterol (LDL-C)
Apolipoprotein A1 (ApoA1)
Apolipoprotein B (ApoB)
Lipoprotein(a) (Lp(a))

Immune Panel
Immunoglobulin A (IgA)
Immunoglobulin G (IgG)
Immunoglobulin M (IgM)
Immunoglobulin E (IgE)
Complement C3 (C3)
Complement C4 (C4)

Rheumatism Panel
C-reactive Protein (CRP)
Rheumatoid Factor (RF)
Antibodies Against Streptolysin O (ASO)

Pancreatitis Panel
α-Amylase (α-AMY)
Lipase (LIP)

Lung Panel
Adenosine Deaminase (ADA)
Angiotensin Converting Enzyme (ACE)

BS-450  
Clinical Chemistry Analyzer

Technical Specifications

System Function:	Automatic, discrete, random access, STAT sample priority
Throughput:	420 photometric tests per hour, up to 626 tests per hour with ISE
On-board tests:	90 photometric tests + 3 ISEs + 3 serum indices

Sample Handling	
Sample tray:	102 sample positions,
Sample volume:	1.5μL~45μL, step by 0.1μL
Sample probe:	Liquid level detection, collision protection, clog detection (optional), and auto-dilution, automatic hemolysis
	Carry-over≤0.05μL

Reagent Handling	
Reagent tray:	92 reagent positions with 24-hour refrigeration 2~8°C,
Reagent volume:	10μL~200μL, step by 0.5μL
Reagent probe:	Liquid level detection, collision protection, bubble detection, concentrated reagent with auto-dilution

Built-in Bar Code Reader (optional):	
	Sample and reagent bar code readers support Codabar, ITF (Interleaved Two of Five), Code128, Code39, UPC/EAN and code93,
	Capable to connect with LIS in Bi-directional mode

Reaction System	
Cuvettes:	93 reusable cuvettes with 8-step auto-washing
Reaction temperature:	37 ± 0.1°C
Reaction volume:	100~300μL
Mixing system:	2 independent mixers with speed detection

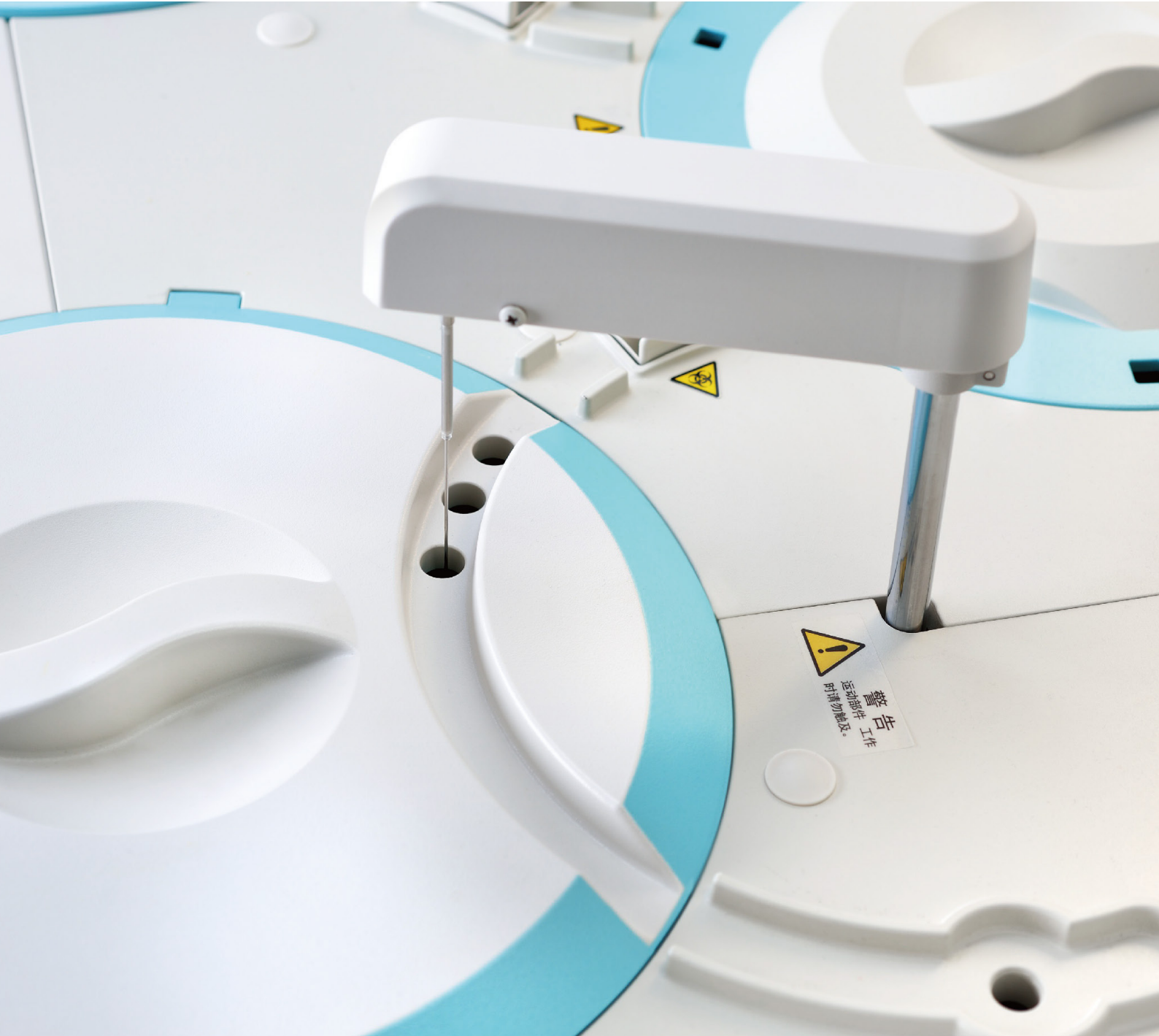
Optical System	
Light source:	12V 20W tungsten-halogen lamp
Photometer:	Grating system
Wavelength:	340nm, 380nm, 412nm, 450nm, 505nm, 546nm, 570nm, 605nm, 660nm, 700nm, 740nm, 800nm
Absorbance range:	0~3.5A

ISE Module (Optional):	K <sup>+</sup> , Na <sup>+</sup> , Cl <sup>-</sup>
------------------------	--

Control and Calibration:	
Calibration mode:	K factor, Linear (two points and multi-points), Logit-Log 4P, Logit-Log 5P, spline, exponential, polynomial, parabola, Logit-log3P, broken line
Control rules:	Westgard multi-rule, Levey-Jennings, Cumulative sum check, Twin plot

Operation Unit:	
Operation system:	Windows 10
Interface:	RS-232 serial port

Working Conditions	
Power supply:	220V-240V, 50/60Hz, ≤1000VA or 110V-130V, 60Hz, ≤1000VA
Water consumption:	≤20 L/H
Dimension:	1050 mm (W) * 720 mm (D) * 1150 mm (H)
Weight:	≤200 Kg





BS-450  
Clinical Chemistry Analyzer



**Precise pipetting system**

Highly polished probes are equipped with multiple technologies to ensure the accuracy and reliability. The minimum sample volume is as low as 1.5μL.



**Efficient washing system**

Interior and exterior washing reduces the carry-over of sample probe to be less than 0.05%. Pre-warmed de-ionized water and detergent ensures the cleanliness of cuvettes.



**Intelligent mixing system**

Stepper motors with speed monitoring optimizes the mixing effect.



**Advanced optical system**

The technology-enhanced grating photometer effectively reduces the stray light and enhances the measuring accuracy of test results. The dot light source lowers the minimum reaction volume to 100μL and maximizes the cost efficiency. Prolong the service life of the lamp by auto sleep function.



**Reliable heating system**

The maintenance-free direct solid heating technology stabilizes the reaction temperature at 37°C. 24-hour refrigeration maintains the temperature of reagent compartment between 2~8°C.



**New software platform**

Inherited from Mindray high-end products, the user-friendly software integrates more practical functionalities and makes itself more easy-to-use. The step-by-step maintenance guide allows the maintenance easier and more comprehensive.



**Total solution for clinical chemistry**

Dedicate to providing a total solution for clinical chemistry with traceability to ensure the ultimate accuracy of test results.



Original Quality Controls



Auto Chemistry Analyzers



Original Reagents



Original Calibrators with Traceability

Mindray Solution for Clinical Chemistry



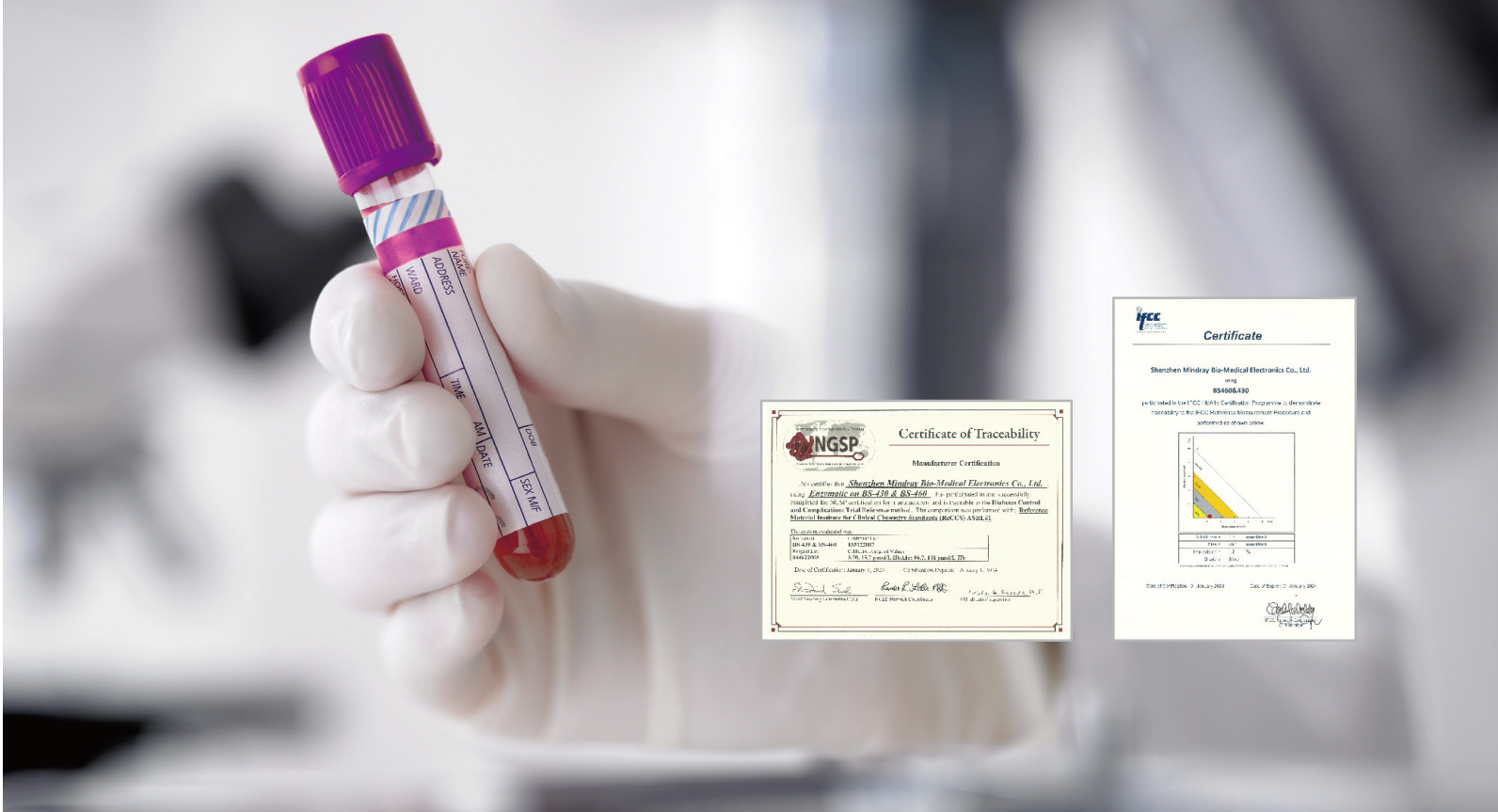
**Optimized integration of the whole system**

All parameters are optimized during the integration to maximize the reliability of test results.



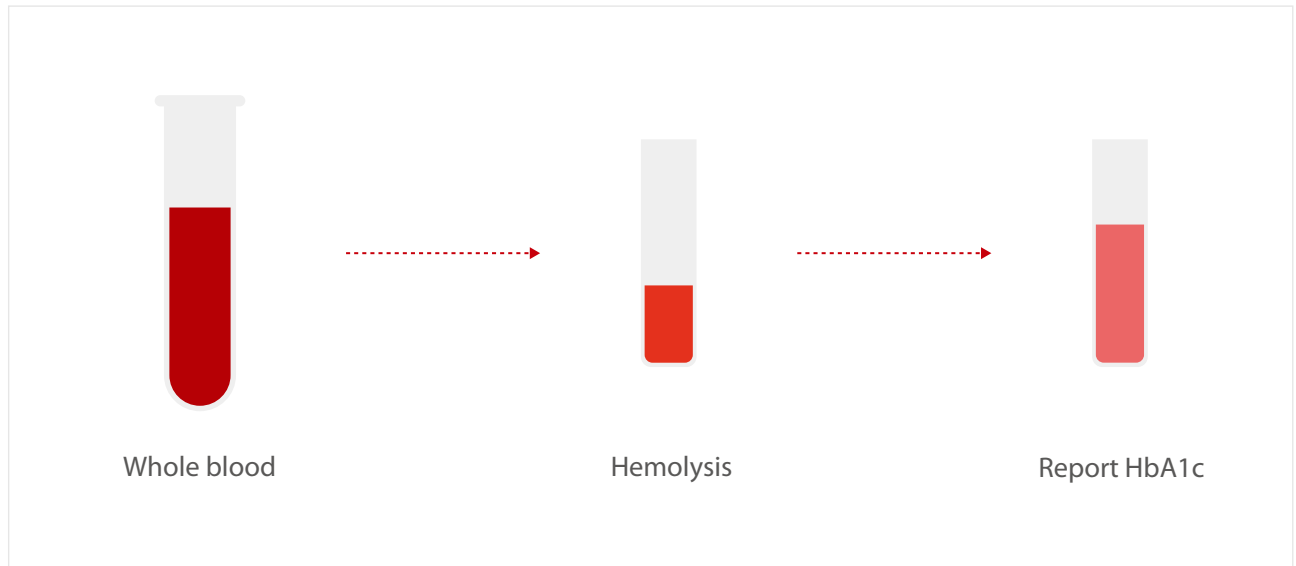
**Whole blood HbA1c**

The whole blood HbA1c technology allows HbA1c test without manual pretreatment.



**Whole blood HbA1c Technology**

BS-450 chemistry analyzer utilizes whole blood HbA1c technology, which allows onboard automatic hemolysate preparation for whole blood samples, thus achieving shorter turnaround time (TAT) and eliminating any biohazardous risks or any errors by manual operation.



Mindray HbA1c assays of enzymatic method, with application of specified protease and Fructosyl Peptide Oxidase (FPOX). The enzymatic method is proven to have high precision, specificity and better performance to avoid interference from hemoglobin variants, and it is traceable to IFCC reference methods.