



BS-230

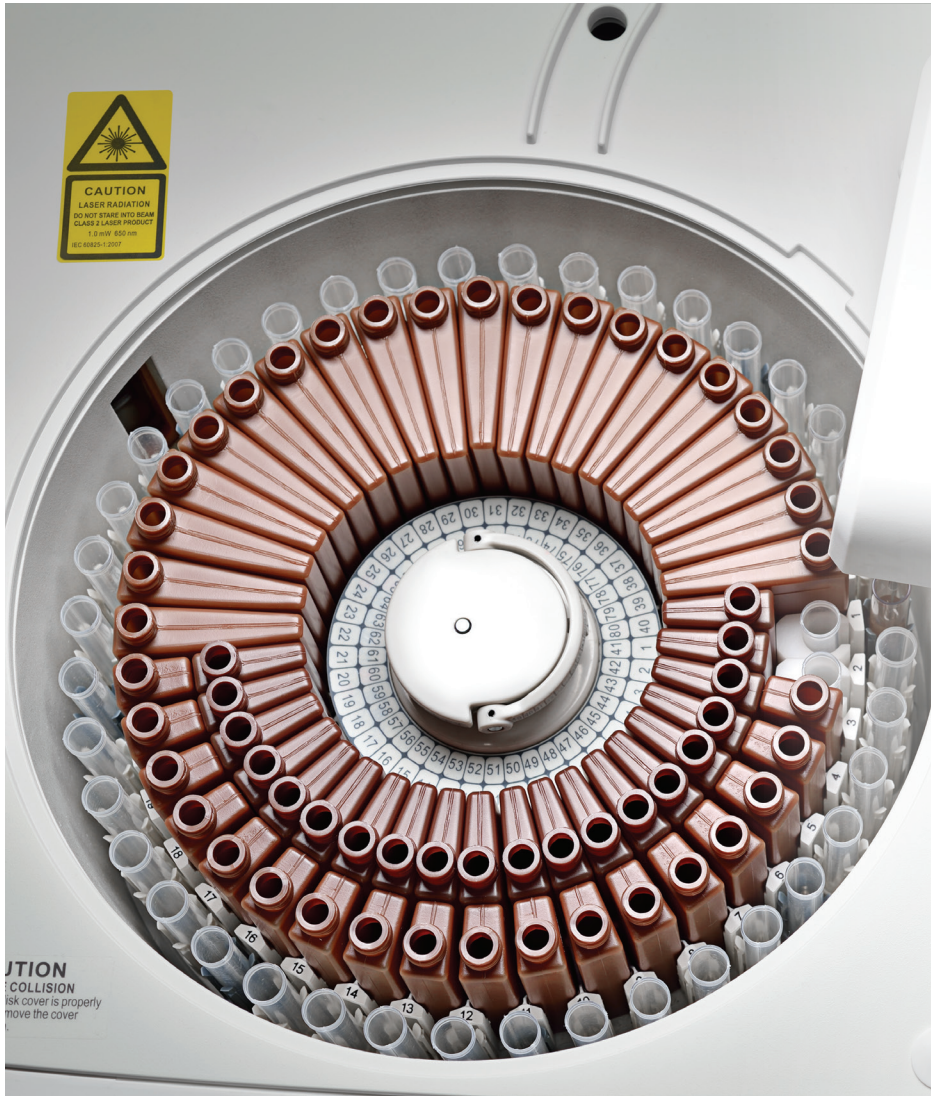
Clinical Chemistry Analyzer



mindray
healthcare within reach



WARNING
MOVING PARTS
Do not touch when in operation



Flexible loading:

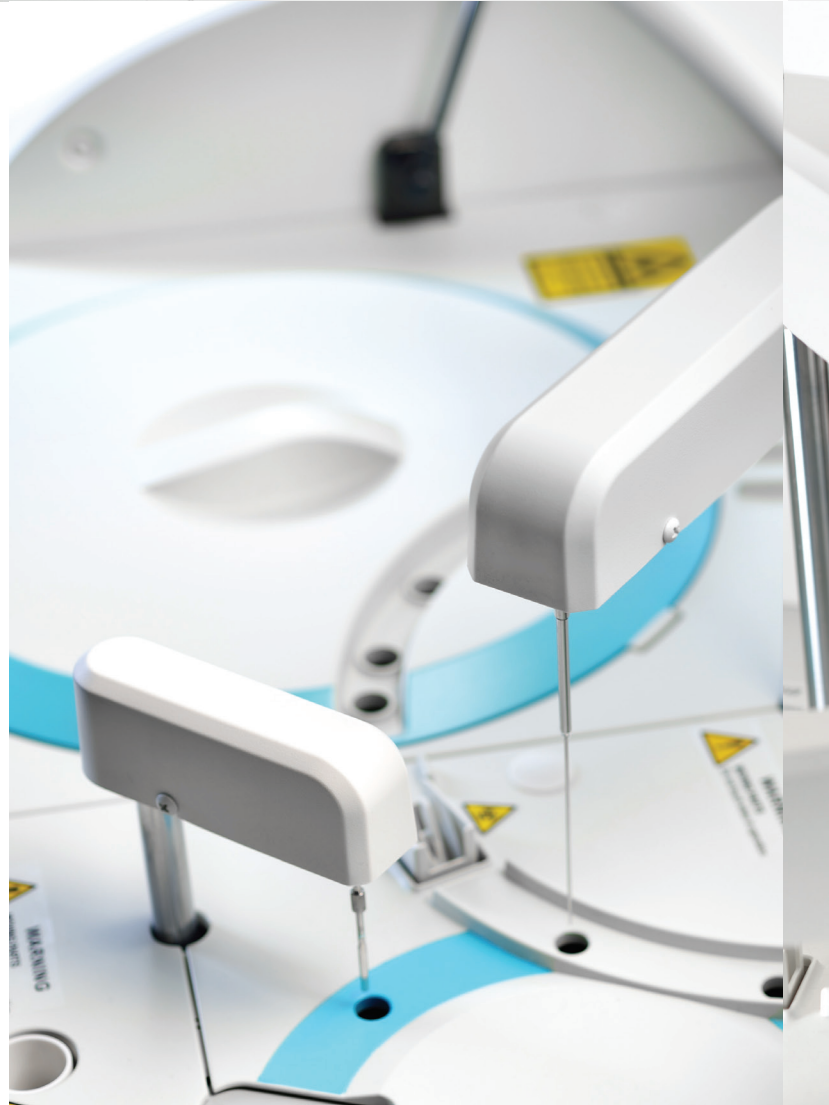
Up to **80** sample positions,

Up to **80** reagent positions.

(40 fixed + 40 interchangeable)

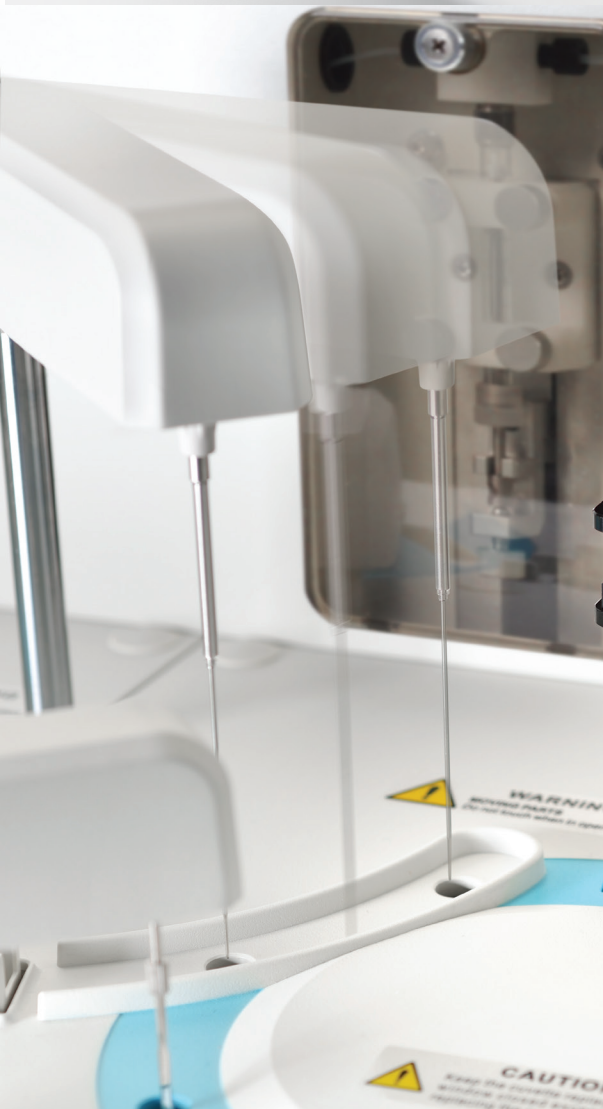
CAUTION
COLLISION
If risk cover is properly
move the cover

100µl
minimum reaction volume



Disposable Cuvettes

to avoid contamination



Probe carryover less than
0.05%

BS-230

Clinical Chemistry Analyzer



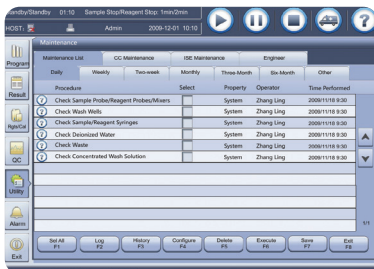
Independent mixing bar



Built-in barcode reader



Intelligent software with user-friendly interface



Step-by-step maintenance guide



Compact Size with Robust Functions

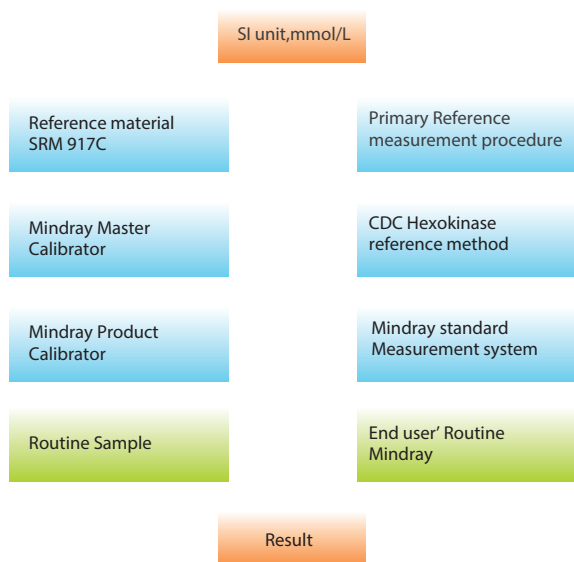


Complete traceability process

Complete calibration hierarchy and traceability chain are based on ISO standard (EN/ISO17511) from reference system to routine measurement system.

Traceability chain of Mindray measurement system (Glu)

Traceability Material Calibration / Value Assignment Procedure Implementation Uncertainty $U_c(y)$

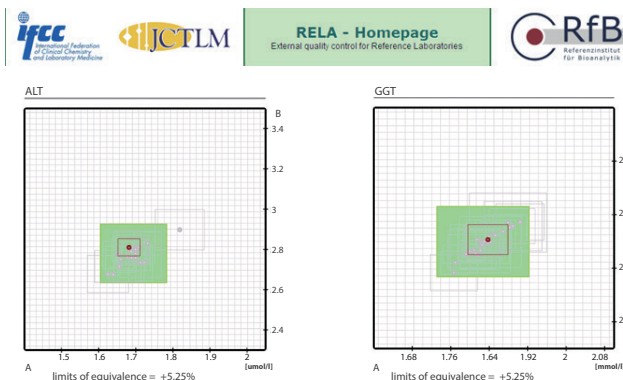


External quality assurance for reference measurement

Mindray participates in RELA (External quality control for reference laboratory) and CAP (College of American Pathologists external quality control).

EQA for Mindray Reference laboratory——RELA

Mindray reference laboratory has passed RELA for 6 consecutive years.



More RELA results please refer to: www.dgkl-rfb.de/81

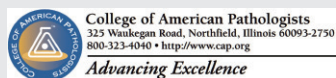


All the items Mindray participate RELA

ALT AMY ALP CK GGT GLU LDH TB TP UA UREA

EQA for Mindray Testing System——CAP

Mindray testing system has passed CAP for 6 consecutive years.



CAP Number: 7198395-01 Kit# 1
 Institution: Shenzhen Mindray Biomed Elec Co Ltd
 Attention: Lixing Liu MD
 City / State: Hongkong HK CH 518055

Kit ID: 25733824
 Kit Mailed: 6/3/2013
 Original Evaluation: 7/8/2013

EVALUATION ORIGINAL

C-B 2013 Chemistry

CAP

Regulated Analyte	Proficiency Event 2012 3			Proficiency Event 2013 1			Proficiency Event 2013 2			Current Event Performance Interpretation	Cumulative CLIA '88 Performance Interpretation
	Test Event	Score	%	Test Event	Score	%	Test Event	Score	%		
ALT	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Albumin	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Alkaline Phosphatase	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Amylase	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
AST	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Bilirubin, Total	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Calcium, Total	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Chloride	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Cholesterol, Total	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Cholesterol, HDL	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Creatine Kinase	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Creatinine	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Glucose	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Iron, Total	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
LD	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Magnesium	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Potassium	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Sodium	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Protein, Total	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Triglycerides	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Urea Nitrogen	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful
Uric Acid	C-C	5/5	100	C-A	5/5	100	C-B	5/5	100	Satisfactory	Successful

Reagent menu

Hepatic Panel

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)
 α -L-fucosidase (AFU)
5'-nucleotidase (5'-NT)

Renal Panel

Urea (UREA)
Creatinine (CREA) Modified Jaffé Method
Creatinine (CREA)Sarcosine Oxidase Method
Uric Acid (UA)
Carbon dioxide (CO₂)
Microalbumin
 β 2-Microglobulin (β 2-MG)
Cystatin C (CysC)
Retinol binding protein(RBP)

Immune Panel

Immunoglobulin A (IgA)
Immunoglobulin G (IgG)
Immunoglobulin M (IgM)
Complement C3 (C3)
Complement C4 (C4)

Diabetes Panel

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

Cardiac panel

Creatine Kinase (CK)
Creatine Kinase-MB (CK-MB)
Lactate Dehydrogenase (LDH)
 α -Hydroxybutyrate Dehydrogenase(α -HBDH)
High sensitive C-reaction protein(HS-CRP)

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)]

Rheumatism Panel

C-reactive protein (CRP)
Rheumatoid Factor (RF)
Antibodies Against Streptolysin O (ASO)

Lung Panel

Adenosine Deaminase (ADA)
Angiotensin Converting Enzyme(ACE)

Pancreatitis Panel

α -Amylase (α -AMY)
Lipase (LIP)

BS-230

Clinical Chemistry Analyzer

Technical Specifications

System function

Automatic, Discrete, Random Access, Bench-top

STAT sample priority

Throughput: Up to 200 tests/hour, up to 400 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 / bi-chromatic

Original system pack reagent ready to use

Close system and open system is optional

Reagent/Sample Handling

Reagent/Sample tray: 80 positions for reagents and 40 positions for samples in 24-hour refrigerated compartment (2~12 °C)

Reagent volume: 100~250µl, step by 0.5µl

Sample volume: 2~45µl, step by 0.1µl

Reagent/Sample probe: Liquid level detection, vertical collision protection and inventory checking, reagent pre-warming

Probe cleaning: Automatic washing for interior and exterior Carry over < 0.05%

Automatic sample dilution: Pre-dilution and post-dilution

Internal bar code reader (optional)

Capable to communicate with LIS in bi-directional mode

Reaction System:

Cuvette: 40 disposable cuvettes

Reaction volume: 100~360µl

Operating temperature: 37 °C ±0.1 °C

ISE Module (optional)

Measuring K+, Na+, Cl-

Mixing Unit

Independent mixing bar

Optical System

Light Source: Halogen-tungsten lamp

Wavelength: 8 wavelengths, 340nm、405nm、450nm、510nm、546nm、578nm、630nm、670nm

Absorption range: 0~4.0 Abs (10mm conversion), resolution 0.0001Abs

Stray Light 5.6Abs

Control and Calibration

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

Control Rules: X-R, L-J, Westgard multi-rule, Cumulative sum check, twin plot

Operation Unit

Operation system: Windows 8

Interface: RS-232

Working Conditions

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

Dimension: 690 mm (length) ×580 mm (depth) ×595 mm (height)

Weight: 47 kg

Water Consumption: ≤ 2 L/H

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