CL-2000i

Chemiluminescence Immunoassay System

mindray

Mindray Solution for Immunoassay Tests

01 ›› **High Throughput**
Up to 240 tests/hour

04 ›› **Flexible Scalability**
Flexible connection with BS-800 module and BS-2000 module into integrated system

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Easy Operation
Intuitive interface for software
Real-time indication of cuvettes, waste and wash buffer status
Step-by-step maintenance guide

03 ››
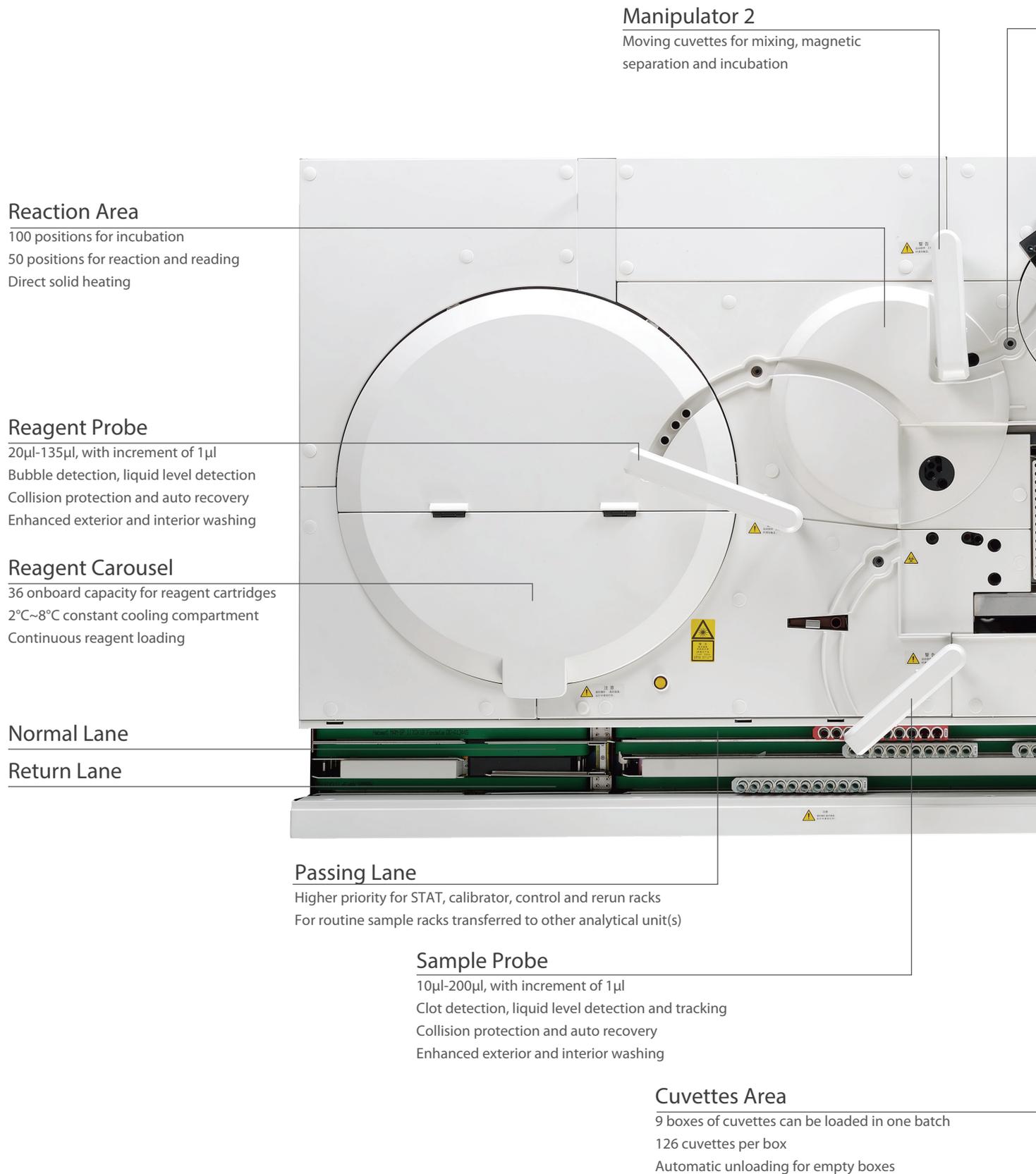
Large Capacity
300 samples in one batch
Support continuous loading
36 onboard capacity for reagent cartridges
1134 cuvettes loaded in one batch

02 ››

Test menu

Thyroid
FT3
FT4
T3
T4
TSH
Anti-Tg
Anti-TPO
Tg
rT3
TRAb

Infectious Disease
HIV Combo
HBsAg
Anti-HBs
HBeAg
Anti-HBe
Anti-HBc
Anti-HCV**
Anti-TP (Syphilis)
HAV IgM*

Fertility
Total β-HCG
FSH
LH
Prolactin
Estradiol
Estriol
TESTO
PROG
AMH
Free testosterone*
17-OH PROG*
SHBG*

Tumor marker
CEA
AFP
CA125
CA15-3
CA19-9
Free PSA
Total PSA
NSE
CYFRA 21-1
CA72-4
PG I
PG II
SCCA
HE4
ProGRP
CA50
CA242
PIVKA-II*
AFP-L3%*
Hp IgG*
G-17*

Bone Metabolic
Intact PTH
Calcitonin
Vitamin D total

Cardiac
CK-MB
Myoglobin
Troponin I
BNP
NT-proBNP*

Diabetes
DM
Insulin
C-peptide

Adrenal Function
DHEA-S
Cortisol
ACTH

Liver Fibrosis
Laminin
Hyaluronic Acid
PIIINP
Collagen IV

COVID-19
SARS-COV-2 IgG
SARS-COV-2 IgM
SARS-COV-2S-RBD IgG
SARS-COV-2
Neutralizing
Antibody

ToRCH
Toxo IgG
Toxo IgM
Rubella IgG
Rubella IgM
CMV IgG
CMV IgM
HSV-1/2 IgG*
HSV-1/2 IgM*
HSV-1 IgG*
HSV-2 IgG*

Growth Hormone
GH*
IGF-1*

Anemia
Ferritin
Vitamin B12
Folate
RBC Folate

Hypertension
EH
Renin
Aldosterone

Inflammation
Procalcitonin
IL-6
sCD14-ST

DS' Screening
DS
PAPP-A*
Free β-HCG*

*: Under development
**: Non-CE

CL-2000i
Chemiluminescence Immunoassay System

Manipulator 2
Moving cuvettes for mixing, magnetic separation and incubation

Reaction Area
100 positions for incubation
50 positions for reaction and reading
Direct solid heating

Reagent Probe
20μl-135μl, with increment of 1μl
Bubble detection, liquid level detection
Collision protection and auto recovery
Enhanced exterior and interior washing

Reagent Carousel
36 onboard capacity for reagent cartridges
2℃~8℃ constant cooling compartment
Continuous reagent loading

Normal Lane

Return Lane

Passing Lane
Higher priority for STAT, calibrator, control and rerun racks
For routine sample racks transferred to other analytical unit(s)

Sample Probe
10μl-200μl, with increment of 1μl
Clot detection, liquid level detection and tracking
Collision protection and auto recovery
Enhanced exterior and interior washing

Cuvettes Area
9 boxes of cuvettes can be loaded in one batch
126 cuvettes per box
Automatic unloading for empty boxes

Mixing Unit
High speed vortexer mixing for reaction solution

Magnetic Separation Unit
4-phase washing

Sample Delivery Module (SDM)
Up to 300 samples to be loaded
Continuous sample loading and offloading

STAT and RUN buttons
Flexible STAT rack loading
One touch to initiate analysis

Substrate Bottles
2 bottles for equilibrium
2 bottles ready for aspirating
Bottom piercing to eliminate contamination

Manipulator 1
Moving cuvettes for dispensing
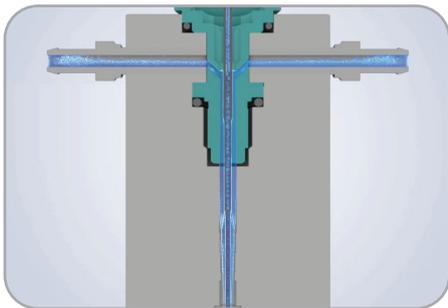Intelligent cuvette detection

Reliable Results

Enhanced Reaction System

- Non-touch vortexer mixing for reaction solution without any contamination
- Precisely controlled temperature for magnetic separation, incubation & reaction by maintenance free direct-solid heating technology
- Reliable clinical performance with enhanced PMT chemiluminescent detection system

Efficient Washing System

- Interior & exterior probe washing with high pressure pre-heated water
- Programmed enhanced washing with detergent for reagent and sample probes
- 4-phase washing for magnetic separation unit with high efficiency

Stable Reagent Cartridges Utility

- 2℃~8℃ constant cooling compartment for reagents cartridges
- Membrane sealed liquid reagent ready-to-use
- Intelligent magnetic particles mixing by reagent carousel rotation

Intelligent Indication for Daily Operation

- Real-time indication of cuvettes, waste and wash buffer status
- Real-time monitoring for substrates consumption
- Easy operation for replacing cuvettes, wash buffer and placing new substrates

Advanced Software

User-friendly Interface

- Unified platform of BS-2000M series, BS-800M series, BS-480 and future system
- Real-time status monitoring for analytical unit, SDM and carousels
- Intelligent distribution for STAT samples

Real-time QC Status Monitoring

- Westgard Rules and Two-Control Evaluation check
- Levey-Jennings chart and Twin-Plot chart for review
- Real-time alarm and locating when QC result(s) is out of range
- Auto QC setup capability

Traceable Test Results

- Reagent, calibrator and control information can be recalled from archive history
- Intuitive software design, easy to trace results

Reflex and Re-run Function

- Pre-defined reflex and Re-run assays will be performed automatically when preset criteria is met

Test Summary Function

- Test summary during certain period, including calibration, QC, Sample, valid tests and rerun tests
- Facilitate to computation of total test costs within a defined period
- The summary can be archived into excel files or printed to review and backup

Step-by-step Maintenance Guide

- Scheduled maintenance and maintenance guide for analytical unit
- Ensure performance reliability and reduce unnecessary service calls
- Error report transferrable to service engineers for immediate troubleshooting which can minimize instrument downtime

Technical Specifications

General Information

Throughput	Up to 240 tests/hour
Measurement Principle	Micron superparamagnetic particles platform with alkaline phosphatase (ALP) labeled reagents and AMPPD substrate

Sample Assembly

Sample Feeder	Rack system with Sample Delivery Module Up to 300 onboard samples with 30 racks
Sample Probe	Steel probe, liquid level detection, clot detection, horizontal and vertical collision protection
Sample Volume	10µl~200µl, with increment of 1µL
Sample Dilution	Automatic dilution with 1:2 ~ 1:40

Reagent Assembly

Reagent Disk	36 reagent positions, continuous loading, real-time mixing for magnetic particles
Cooling System	2℃~8℃
Reagent Barcode	Automatic scanning
Reagent Probe	Steel probe, liquid level detection, bubble detection, horizontal and vertical collision protection
Reagent Volume	20µL~135µL, with increment of 1µL

Substrate System

Substrate Bottle	300/500 tests per bottle, bottom piercing
Substrate Loading	Capable of continuous loading during testing
Substrate Heating	Constant heating
Aspiration Volume	200µL

Magnetic Separation Unit

Separation Assembly	4-phase magnetic separation
Temperature	Accuracy: 37±0.3℃, fluctuation: ±0.1℃

Measurement and Reaction System

Detection Mode	Photon counting
PMT Calibration	LED reference module
Signal Detector	Photomultiplier (PMT) photon counter
Reaction Disk	150 positions
Temperature	Accuracy: 37±0.3℃, Fluctuation: ±0.1℃
Mixing Unit	Non-touch vortexer mixing

Cuvette Loading and Waste Collection

Cuvette	Disposable plastic cuvettes
Cuvette Loading	Trays continuous loading and offloading, 126 cuvettes per tray, up to 9 trays (1134 cuvettes) can be loaded in one batch
Waste Collection	2 waste boxes, overflow detection

Working Conditions

Power Supply	110V/115V~, 60Hz; 220V-240V~, 50Hz; 220V/230V~, 60Hz
Input Power	3200VA
Operating Temperature	15℃~30℃
Relative Humidity	35%RH~80%RH, without condensation
Dimension	Main Unit: 1450mm*1020mm*1200mm (W*D*H) SDM: 710mm*1020mm*1200mm (W*D*H) Total: 2150mm*1020mm*1200mm (W*D*H)) Weight: 750kg
Altitude Height	-400m~2000m (optional external compressor for 2000m~4000m)

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