

# Automatic Modular Clinical Chemistry Analyzer

## Polaris c1000



## Polaris c1000 Automatic Modular Clinical Chemistry Analyzer

KHB Polaris series are the latest product of KHB. The automatic clinical chemistry system are specially designed for large and medium-sized hospitals and third-party commercial laboratories. The automatic modular analysis system features high-speed detection, modular combination and intelligent management, and provides high-quality test results and satisfying user experience for clinical use.

### Mixing System

- Two groups of stirring devices each with 2 mixing arms
- Available for automatic frequency conversion function

### Reagent System (Reagent Probe)

- 2 reagent probes for 2 reagent trays
- Level sensing, volume tracking and anti-collision protection
- Automatic maintenance and rinsing

### Reaction System

- Reaction tray with 216 reaction positions
- Permanent hard glass cuvettes
- Electric Heating System

### Reagent System (Reagent Tray)

- Dual-reagent-tray design with 200 reagent positions
- Refrigeration at 2 ~ 8°C
- Bar code scanning (optional)

### ISE Module

- 600 tests/hour
- Equipped with K<sup>+</sup>, Na<sup>+</sup> and Cl<sup>-</sup> ion electrodes

### Washing System

- Automatic 8 steps washing
- Multi-stage heating of cleaning agent and deionized water

### Sample System (Track Unit)

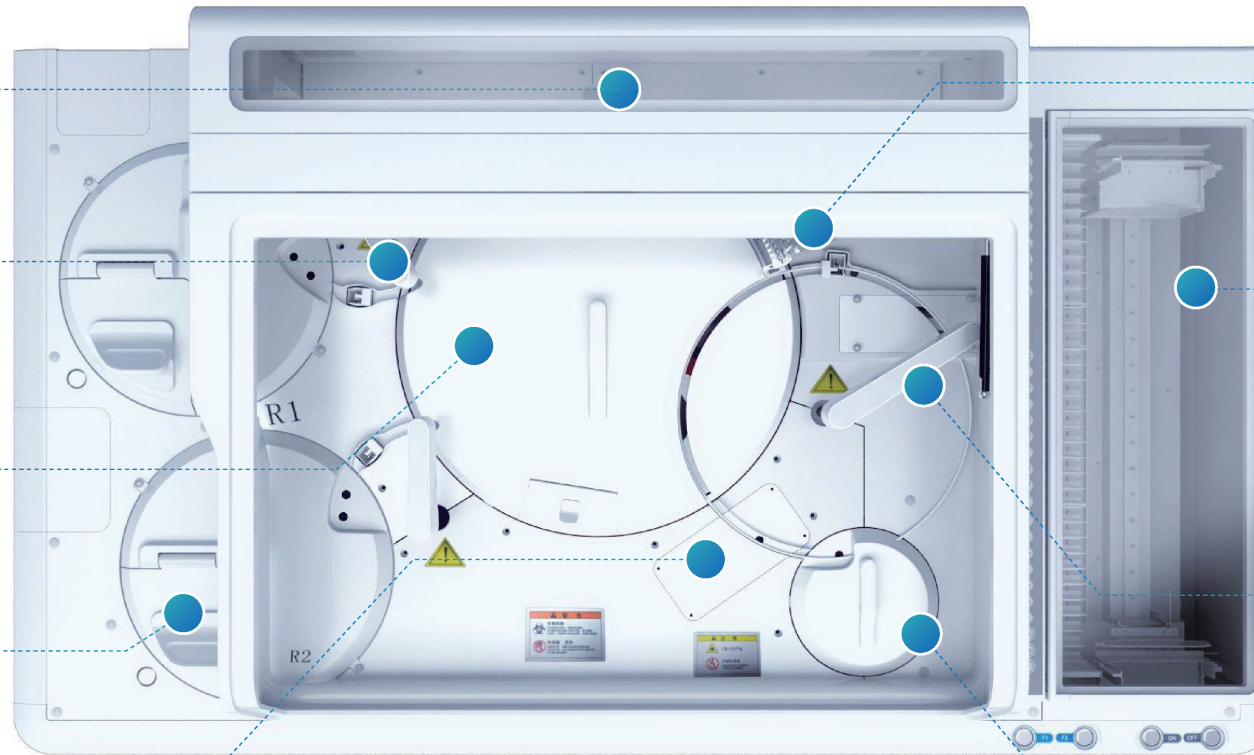
- Loading capacity of 30\*10 samples
- Including 30 emergency sample positions, with priorities to test
- Available for feedings with sample tubes of different sizes
- Available for bar code scanning

### Sample System (Sample Probe)

- Single sample probe
- Level sensing, quantity tracking, anti-collision protection
- Sample clot detection (optional)
- Automatic maintenance and rinsing

### Calibration and Quality Control Tray

- 25 refrigerated calibration/quality control/emergency positions
- Available for bar code scanning (optional)

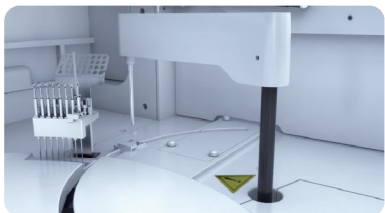


## Patented<sup>[2]</sup> two-channel sample processing system



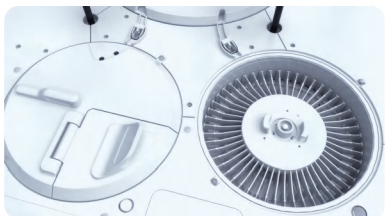
- One-time batch input of 300 samples, available for continuous input amidst operation
- 30 independent emergency sample positions for insert-and-detection purpose
- 25 refrigerated tray sample positions for accelerating emergency detection

## Ultra-micro sampling system



- Ultra-micro sampling technology with minimum reaction volume of 80 $\mu$ L
- Automatic level detection of sample feeding needle available for volume tracking and accurate feeding

## Ultra-large dual-disc reagent system



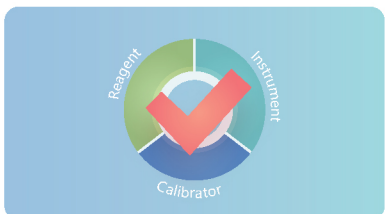
- Dual-disc design with 200 reagent positions
- Online reagent loading and change amidst operation

## New optical system



- Special position design for convenience in change of light source
- Halogen lamp featuring ultra-long service life, stable signal and energy saving
- 16 wavelengths for detection, absorbance range as wide as -0.5 ~ 3.5Abs

## Complete traceable system



- First-class reference method by Kehua Standard Laboratory
- Traceability system integrating instruments, reagents and calibrator
- Easy-to-use matching calibrators, some of which come with controls



## Polaris c1000 Automatic Modular Clinical Chemistry Analyzer Parameter Specification

### Performance

Throughput	Photometric test: 1000 tests/hour; ISE: 600 tests/hour (optional)
System functions	Continuous standby for 7*24 hours, emergency test, automatic dilution, automatic retest, automatic sleep and wakeup 1 ~ 4 reagents, dual-wavelength test, customized reaction time setting (1 ~ 60 minutes)
Scope of test	Clinical chemistry and electrolytes (optional)
Type of sample	Serum, plasma, urine, whole blood, cerebrospinal fluid
Analytical method	One-point endpoint method, dual-point endpoint method, kinetic method (reaction speed method), fixed time method (two-point speed method) and ISE indirect measurement method
Calibration method	Linear calibration: K factor method and linear method (including dual-point linear method and multi-point linear method) Non-linear calibration: transect method, broken line method, exponential method, logarithmic method, 3P parameter method, 4P parameter method and 5P parameter method
Maximum number of items for simultaneous analysis	98 dual-reagent biochemistry items + 3 electrolyte items

### Sample System

Sample position	325 sample positions: including 300 track sample positions (including 30 emergency positions), available for bar code scanning; 25 disc emergency positions, available for bar code scanning (optional), 2 ~ 8℃ refrigeration function
Sample volume	1.0 ~ 35.0μL, progressively increased by 0.1μL
Sample probe	Level sensing, volume tracking, anti-collision protection, sample clot detection (optional), automatic maintenance and cleaning, with a cross-contamination rate of lower than 0.08%
Sample tube	Available for mixed placement of centrifugal cup, micro sample cup, glass blood sampling test tube, plastic blood sampling test tube and other types of samples

### Reagent System

Reagent tray	All 200 reagent positions are available for bar code scanning (optional) and support reagent bottles with volumes of 75mL, 45mL and 25mL
Reagent volume	R1: 80 ~ 300μL; R2: 10 ~ 300μL; progressively increased by 0.5μL
Reagent probe	Level sensing, volume tracking, anti-collision protection and automatic maintenance and cleaning
Refrigeration of reagent	2 ~ 8℃

### Reaction System

Reaction tray	Disc type, with 216 reaction positions
Cuvette	Permanent hard glass cuvette (glass), with optical path of 5mm
Reaction solution volume	80 ~ 450μL
Constant temperature system	Maintenance-free electric heating system
Temperature of reaction tray	37℃, real-time display of temperature
Temperature fluctuation of reaction tray	±0.1℃

### Optical System

Light source	Halogen lamp
Spectral method	Flat-filed concave grating and diode array, with post spectro detection technology
Wavelength	16 wavelength: 340nm, 380nm, 410nm, 450nm, 478nm, 505nm, 546nm, 578nm, 600nm, 630nm, 660nm, 700nm, 750nm, 780nm, 800nm, 850nm
Measurement range of absorbance	-0.5 ~ 3.5Abs

### Mixing System

Mixing arm	Independent mixing arm
Mixing technology	Available for automatic frequency conversion

### Washing System

Washing steps	Automatic washing within 8 steps
Washing solution	Acid and alkaline washing solution

### Working Conditions

Weight	533Kg
Size	1770mm (length) × 990mm (width) × 1238mm (height)
Power supply	~ 230 V ±10%, 50 Hz/60 Hz ± 1 Hz
Power	2500VA
Water consumption	Less than 45 liter/hour



## KHB Polaris Series Clinical Chemistry Testing Items

### Diverse items menu

Over 100 kinds of clinical chemistry reagents that meet clinical requirement

### Multiple items available for attached calibrators

Traceable matching calibrators provided to ensure detection results and lower user costs



### Reagent bar code management

Bar code scanning for accurate reagent information and reliable period of validity management

### Excellent anti-interference capability

Outstanding abnormal sample detection, effectively reducing retest and avoiding delayed reports

## Clinical Chemistry Reagents Test Menu



### Liver Function

- ALT
- AST
- ALP
- TP
- ALB
- PA
- TBA
- γ-GT
- TB
- DB
- CHE
- AFU
- GPDA
- ADA
- 5'-NT
- CG
- m-AST
- CIV\*
- LAP\*
- MAO\*
- AMM\*
- GR\*



### Renal Function

- CRE
- UREA
- UA
- UMA
- Cys-C
- RBP
- NAG
- NGAL
- β2-MG
- α1-MG
- CSF\*
- LCA\*
- LCK\*



### Blood Lipid

- TC
- TG
- HDL-C
- LDL-C
- ApoA1
- ApoB
- Lp (α)
- ApoE
- sd-LDL-C
- Lp-PLA<sub>2</sub>
- MPO\*
- PLIP\*



### Specific Protein

- IgA
- IgM
- IgG
- C3
- C4
- CRP
- hs-CRP
- WCRP
- RF
- ASO
- anti-CCP
- SAA
- PCT\*
- MMP-3\*
- Clq\*
- SOD\*



### Myocardium

- LDH
- CK
- CK-MB
- α-HBDH
- Hcy
- IMA
- ACE
- MYO
- H-FABP
- CTnl\*
- LDH1\*



### Pancreas

- α-AMY
- LPS
- PAMY



### Electrolyte

- Ca
- Mg
- IP
- CO<sub>2</sub>
- K
- Na
- Cl
- Fe\*
- Zn\*



### Glycometabolism

- GLU
- HbA1c
- D3H
- NEFA
- GA
- INS\*
- GSP\*
- LAC\*



### Tumor Marker

- SA
- PGI
- PGII
- Fer\*
- SGF\*



### Others

- D-Dimer
- TRF
- FDP\*
- Fbg\*

\*Coming soon

Care for life Delicate to excellence

**وستا تجهيز پارت**

جردن، ناهید غربی، پلاک ۵۷، ساختمان وستا

🌐 [www.vestallab.ir](http://www.vestallab.ir)

☎ ۰۲۱-۷۲۸۰۱



**Shanghai Kehua Bio-engineering Co., Ltd.**

Mail: [International@skhb.com](mailto:International@skhb.com)

Phone: +86-21-64950625

Website: <https://www.skhb.com/en/>

Address: 1189 North Qinzhou Road, 200233, Shanghai

Manufacture: Shanghai Kehua Laboratory System Co., Ltd.

Address: 2 Floor, Bldg 84, No.1198 North Qinzhou Road, Xuhui District, 200233, Shanghai

## Modularized combination for high speed detection

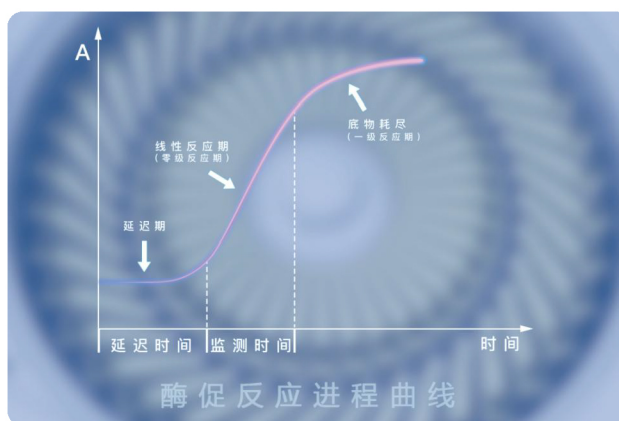
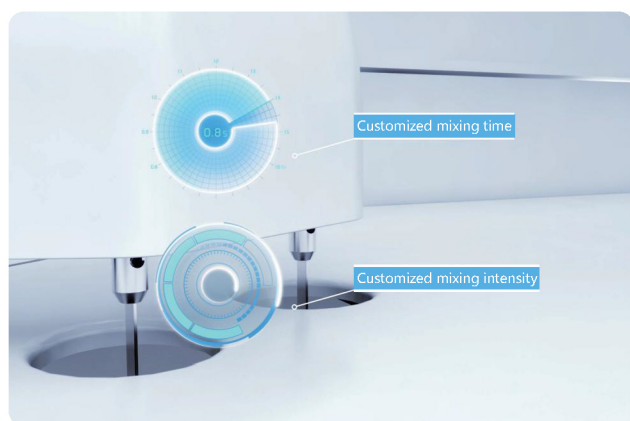
- Photometric test: 1000 tests/hour; ISE: 600 tests/hour (optional)
- Combinations of 1-4 analysis modules are optional
- Interconnection with KHB Polaris c2000 for speed expansion
- Interconnection with KHB Polaris i2400 for a biochemical immunoassay system



- ★ KHB Polaris series are composed of biochemical modules including c2000 (biochemical analysis with constant speed of 2000 tests/hour) and c1000 (biochemical analysis with constant speed of 1000 tests/hour), as well as i2400 immunization module (240 tests/hour).

## Higher accuracy in results through optimization of reaction parameters

- User-defined mixing parameters for accurate detection
- Rapid and solid support to clinical decisions by setting prozone parameters and substrate depletion parameters



## Intelligent design with remote control function that offers more convenience

- Remote automatic quality control\* and automatic maintenance and rinsing that minimize manual intervention
- Automatic remote reminder to change reagent\* and ensure analysis continuity

