

Chemray 420

Auto Chemistry Analyzer

Technical Specifications

• System Function

Automatic, Random Access

STAT sample priority, available for all sample position

Barcode Scanner for sample and reagent

Bi-direction LIS interface (HL7)

Throughput: 360 tests/hour (single and dual reagent)
Up to 540 tests/hour with ISE (K⁺, Na⁺, Cl⁻)

Principle: Colorimetric, Turbidimetric

Methodology: End-point, Two-point, Kinetic
Discrepant Value

Single/Dual/Triple/Quadruple reagent
chemistries

Monochromatic/Bichromatic

Programming: Open system with user defined profiles
and calculation assays

Probe cleaning:

Automatic washing both interior and
exterior, carryover <0.1%

Pre-heating for reagent

Auto dilution: 3-150 times

Built-in reagent/sample bar code reader (optional)

• Reaction System

Reaction positions: 100 cuvettes

Cuvette: Optical length 5mm

Reaction volume: 150 ~ 500ul

Reaction temperature: 37°C, ±0.1°C

2 mixing probes

8 steps auto-washing system

• Measuring and Optical System

Light Source: Halogen tungsten lamp

Photometer: Grating photometry

Wavelengths: 340nm,405nm,
450nm,505nm,540nm,570nm,600nm,
635nm,670nm,700nm,760nm,795nm

Absorption range: 0 ~ 2.500Abs

Resolution: 0.0001Abs

• Working Condition

Power supply: 100 ~ 240 V,AC 50/60 Hz,1500w

Temperature: 10°C ~ 30°C

Humidity: 40% ~ 85%

Water consumption: ≤20 L/hour

Dimension: 1150mm(L)*726.5mm(W)*1150mm(H)

• Sample/Reagent Handling

2 reagent probes, 1 sample probe

Sample tray: 100 positions

Reagent tray: 80 refrigerated positions

Refrigeration temperature: 2 ~ 10°C

Reagent volume: 20 ~ 350 μL, 1 μL adjustable

R1: 150 ~ 350 μL, 1 μL adjustable

R2: 20 ~ 250 μL, 1 μL adjustable

Support R3 and R4

Sample volume: 2 ~ 45 μL, 0.1 μL adjustable

Sample and Reagent probe:

Collision protection, liquid level detection
and inventory checking

Chemray 420

Auto Chemistry Analyzer



- 360 tests/hour, up to 540 tests/hour with ISE(optional)
- Grating system with 12 wavelengths
- Built-in bar code reader (optional)
- 8 steps washing system
- Bi-direction LIS interface



Rayto reserves the right to change specifications without prior notice.
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Chemray 420

Auto Chemistry Analyzer

Reagent System

Multi-functional reagent probe

- Interior and exterior probe washing
- Liquid level detection
- Collision protection
- Inventory checking
- Reagent volume as low as 20 μ l
- Probe depth adjust automatically



Refrigerated reagent tray

- 80 reagent positions for R1,R2,R3,R4
- Compatible with Hitachi reagent bottles
- 24 hours non-stop cooling with peltier element
- Ready-to-use stable reagent
- Built-in reagent bar code reader (optional)

Sample System

Multi-functional sample probe

- Interior and exterior probe washing
- Liquid level detection
- Collision protection
- Probe depth adjust automatically
- Sample volume as low as 2 μ l



Multi-functional sample tray

- 100 sample positions
- 7 virtual sample disks
- Support standard tube, primary tube, EP tube
- Automatic dilution of high concentration sample
- Automatic rerun
- Built-in sample bar code reader (optional)

Optical System

- Unique water cooling system for light source
- Maximum stabilized optical system
- Sealed optical system to prevent any dust and disturbance
- Reversed optics, grating photometry
- Maintenance free



ISE module

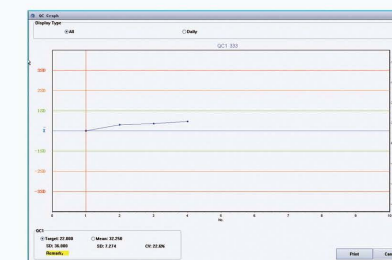
- Optional selection of K⁺, Na⁺, Cl⁻
- Throughput: up to 270 tests per hour
- 6 months shelf life

Operation System



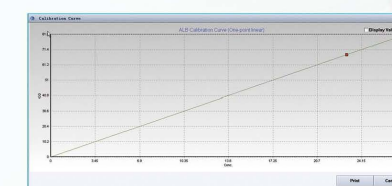
Reaction Curve

- Substrate exhaust limit detection
- Equilibrium point auto search



QC Graph

- QC type: real-time QC, daily QC, day to day QC
- Control rule: multi-rules QC, intelligent QC alarm



Calibration Setting

- Refitting : fitting different types of calibration curve with a certain standard data, thus choosing the best calibration curve

Reaction System

Reaction tray

- Optimized test sequence to reduce carryover
- Total reaction volume as low as 150 μ l
- Contains 100 reaction cuvettes
- Real direct heating
- Real-time display of reaction tray temperature

Unique washing station

- High precision washing liquid control to guarantee washing function
- Washing solution pre-heating to prevent any carryover
- Maintain ideal temperature for testing
- 8 steps auto-washing
- Separate drainage for high and low concentration waste
- Ceramic syringe for auto washing system, high accuracy

High performance mixer design

- Two independent mixers
- Optimized homogenization in minimum time
- Standardized mixing procedures
- Function immediately after sample and reagent pipetted in

Parameter setting

- Different levels of user permission
- Different reference range according to gender and age
- Calculated items available
- Manual items input available
- Automatic rerun
- 3-150 times auto dilution

Statistics

- Calculate the mean value, standard deviation and coefficient of variation
- Statistics of reagent usage
- Statistics of test volume

