



CE

**RANDOX**

# RX monaco

A compact fully automated solution for  
high quality clinical chemistry testing



# RX series

Precision. Reliability. Accuracy

The RX monaco is a fully automated, cost effective solution for low to mid volume clinical chemistry testing offering the ultimate in convenience, performance and confidence. At optimal configuration, the RX monaco performs 170 tests per hour providing cost effective, high quality testing for small to medium sized laboratories.

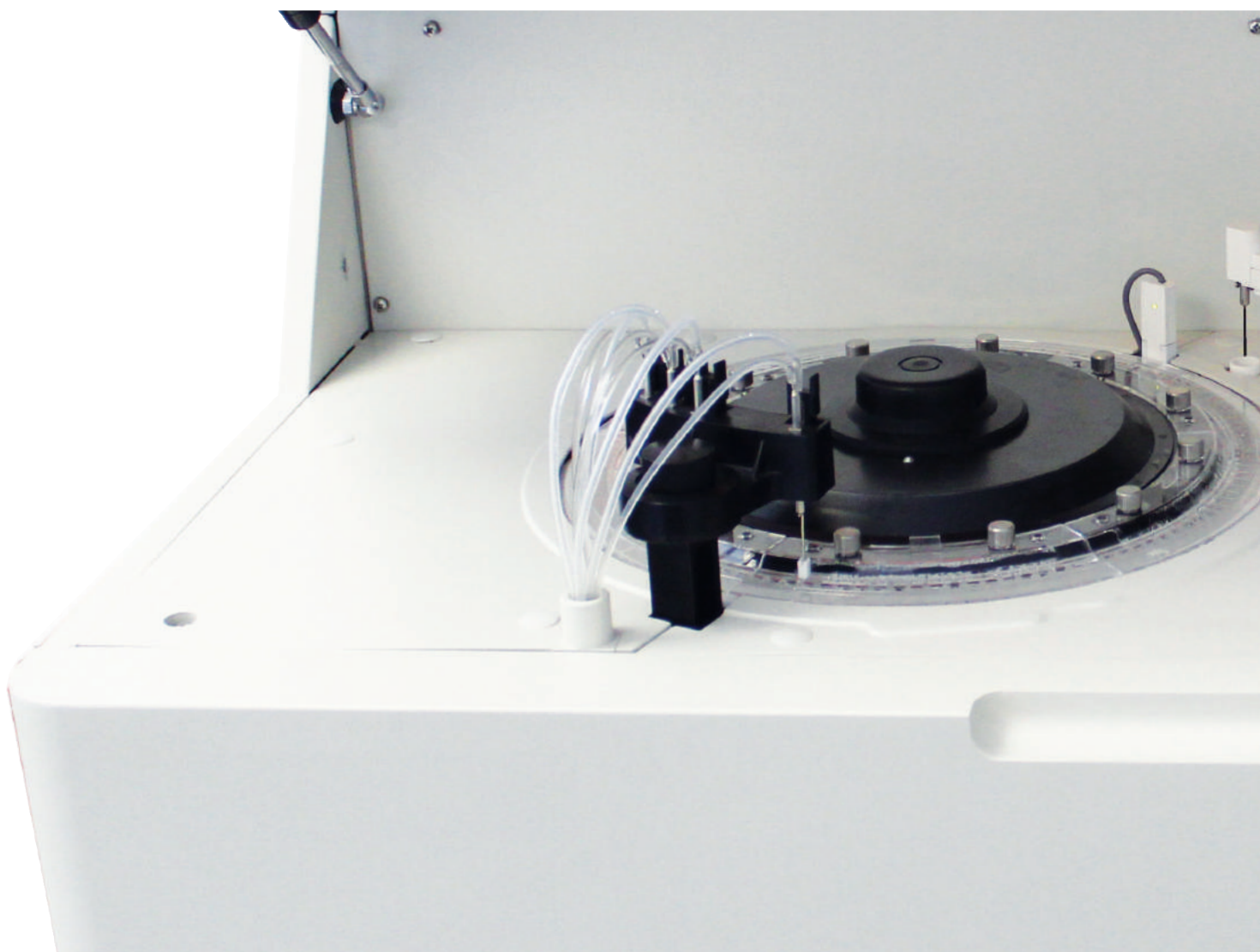
## Wash Station

- 12 stage washing system
- Onboard cuvette checking system
- Unique pipette washing & rinsing
- Includes acid, alkali and pure water wash steps



## Reaction System

- 120 semi-permanent cuvettes, 6mm optical path, 3-6 month lifespan
- Water bath temperature control
- Minimum reaction volume of 150µl
- Cycle time of 15 seconds



# System Overview

The RX series test menu allows for complete consolidation of routine and specialised testing onto one efficient, easy to use platform

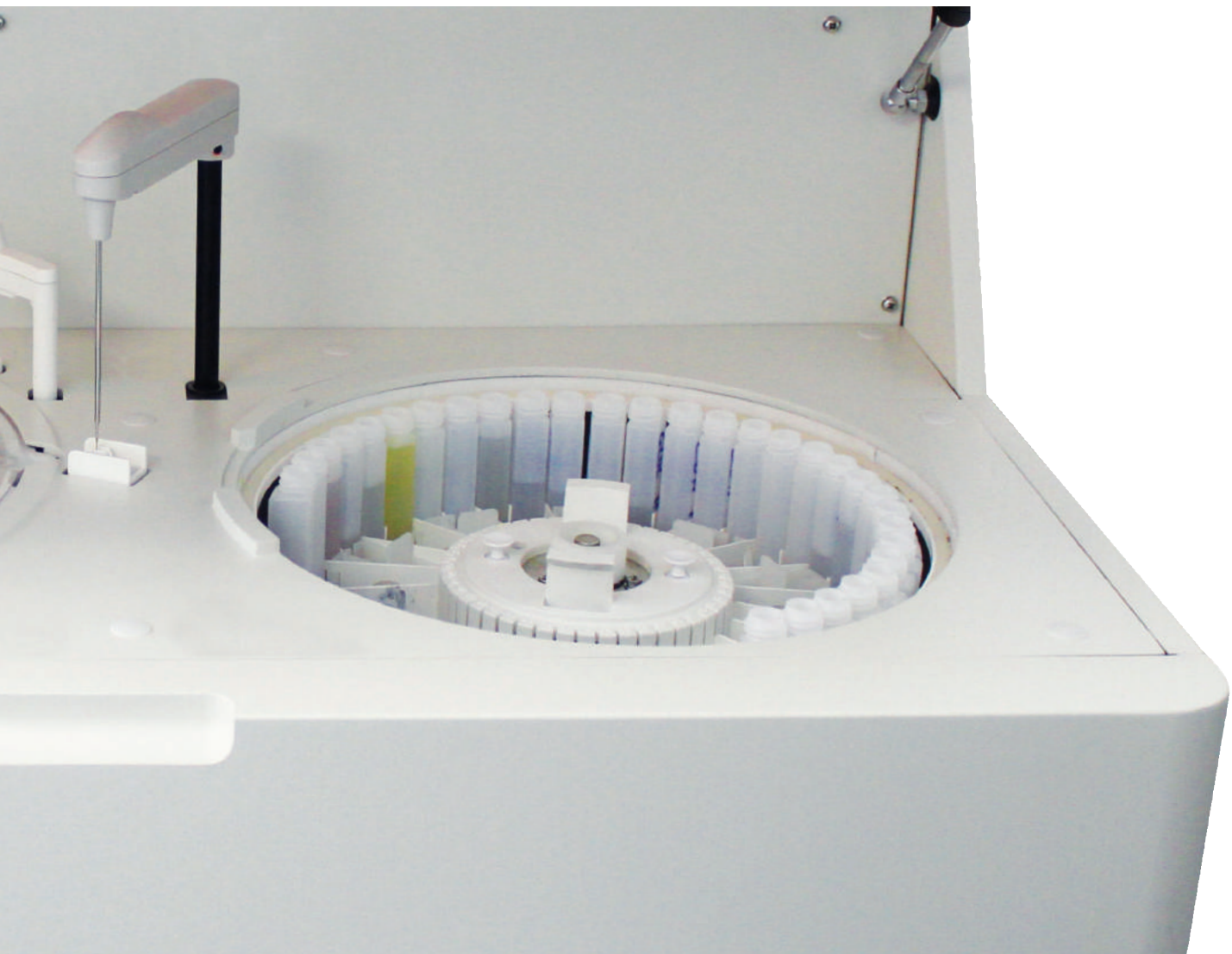
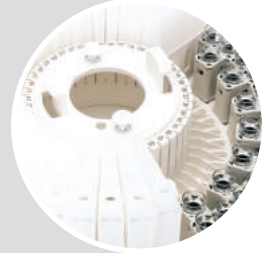
## Optical System

- Direct absorbance in cuvette (monochromatic or bi-chromatic)
- Liquid level and collision detection
- 12 wavelengths generated via diffraction grating: 340, 380, 405, 450, 480, 505, 546, 570, 600, 660, 700 and 800nm



## Reagent & Sample Carousel

- 66 user-defined positions
- Utilises both bar-coded and non bar-coded samples
- Integrated barcode readers for reagent and sample identification
- Uses 20ml reagent bottles



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- Fully automated chemistry analyser
- 170 photometric tests per hour with STAT priority function
- Extensive dedicated test menu
- Versatile shared reagent and sample carousel with 66 user defined positions
- Low water consumption of just 5.5 litres per hour
- 120 semi-permanent cuvettes automatically washed in a 12 step cleaning process
- Digital liquid level & collision detection
- Independent Teflon® coated stirrer
- Minimum daily maintenance required
- Cooled reagent & sample carousel to enhance onboard stability
- Options for bench top or floor stand models
- Built in Inventory Management System automatically tests and reports remaining reagent volume
- Low reagent volume of 10 - 350µl (1 µl increments) & sample volume of just 3 - 35µl (0.1 µl increments)

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# Benefits at a glance

## Optimal Performance

- Throughput of 170 tests per hour
- Single reagent and sample pipette with digital liquid level detection and collision protection
- Built in inventory management system automatically tests and reports remaining reagent volume

## User Friendly

- Easy to use Windows® based software
- Serum indices function detects lipaemic, icteric and haemolytic samples, ensuring accuracy of results and reducing the need for expensive repeats
- Integrated barcode readers for reagent and sample identification

## Optimum Laboratory Efficiency

- Low minimum reaction volume of 150µl improves cost-effectiveness and reduces waste
- Cuvette check function ensures only clean and viable reaction vessels are used

## Advanced On-Board Stability

- Cooled reagent and sample carousel ensure reagent, controls and calibrators can be stored on-board the analyser without compromising stability

## Superior QC Capabilities

- Generation of Levey-Jennings charts, calibration curves and QC statistics
- Auto QC interval
- User defined multi point rules
- QC result search history

## Time and Cost Effective

- Minimal daily maintenance required
- Economic platform with low water consumption of only 5.5 litres per hour at maximum throughput
- Bar-coded reagents and samples mean no time is wasted programming routine assays

## Highly Accurate Testing

- Independent stirring system, automatically rinsed with purified water to reduce carryover
- 120 semi-permanent cuvettes on-board automatically washed in 12 step cleaning programme to minimise contamination
- Warm water washing

## Complete Consolidation

- Extensive dedicated test menu facilitates complete instrument consolidation
- A complete range of clinical chemistry instrumentation, reagents, IQC and EQA available from a single supplier allows for consolidation and real cost savings

## Stat Sampling

- STAT priority functionality enables emergency samples to be processed immediately
- SuperAdd function allows manual items to be added to the interface software so patient results can be printed on one patient report

# Test Menu

## CLINICAL

### AUTOIMMUNE:

Complement Component 3  
Complement Component 4  
CRP Full Range (0.3-160mg/l)  
CRP High Sensitivity  
IgA  
IgG  
IgM  
Rheumatoid Factor

### BASIC METABOLIC PROFILE:

Calcium  
CO<sub>2</sub> Total  
Chloride  
Creatinine Enzymatic  
Creatinine (Jaffe)  
Glucose  
Potassium  
Sodium  
Urea

### BONE PROFILE:

Alkaline Phosphatase  
Calcium  
Phosphorus  
Total Protein

### CARDIAC:

Cholesterol  
CK-MB  
CK-NAC  
CRP Full Range (0.3-160mg/l)  
CRP High Sensitivity  
Direct HDL Cholesterol  
Direct LDL Cholesterol  
Homocysteine  
Lipoprotein (a)  
sLDL  
Triglycerides

### COMPREHENSIVE METABOLIC PROFILE:

Albumin  
Alkaline Phosphatase  
ALT

AST (GOT)  
Direct Bilirubin  
Calcium  
Chloride  
CO<sub>2</sub> Total  
Creatinine Enzymatic  
Creatinine (Jaffe)  
Glucose  
Potassium  
Sodium  
Total Bilirubin  
Total Protein  
Urea

### DIABETES:

Adiponectin  
Cholesterol  
Creatinine Enzymatic  
Creatinine (Jaffe)  
Direct HDL Cholesterol  
Direct LDL Cholesterol  
Glucose  
HbA1c/Hb  
Microalbumin  
Total Protein  
Triglycerides

### ELECTROLYTES:

Calcium  
Chloride (Nondirect)  
CO<sub>2</sub> Total  
Magnesium  
Potassium (Non-Direct)  
Sodium (Non-Direct)

### HAEMOLYTIC ANAEMIA:

LDH

### HEPATIC FUNCTION:

Albumin  
Alkaline Phosphatase  
ALT  
AST (GOT)  
Cholinesterase  
Complement Component 3

Complement Component 4  
Direct Bilirubin  
Gamma GT  
IgA  
IgG  
IgM  
Iron  
LDH  
Total Bilirubin  
Total Protein

### INFLAMMATION AND INFECTION:

Alpha-1 Acid Glycoprotein  
ASO  
CRP  
Rheumatoid Factor

### LIPIDS:

Apolipoprotein A-1  
Apolipoprotein AII  
Apolipoprotein B  
Apolipoprotein E  
Cholesterol  
Direct HDL Cholesterol  
Direct LDL Cholesterol  
Lipoprotein (a)  
sLDL  
Triglycerides

### NEONATAL SCREENING:

CRP  
CRP Full Range (0.3-160mg/l)  
CRP High Sensitivity

### NEUROLOGICAL DISORDERS (CSF):

IgA  
IgG  
IgM

### NUTRITIONAL STATUS:

Albumin  
Ferritin  
Iron

Lipase  
Magnesium  
Potassium  
TIBC  
Transferrin

### PANCREATIC FUNCTION:

Amylase  
Glucose  
LDH  
Lipase

### RENAL FUNCTION:

Albumin  
Ammonia  
Beta-2 Microglobulin  
Calcium  
Chloride  
Creatinine Enzymatic  
Creatinine (Jaffe)  
Glucose  
HbA1c/Hb  
IgG  
LDH  
Magnesium  
Microalbumin  
Potassium  
Sodium  
Phosphorus (Inorganic)  
Urea  
Uric Acid



## VETERINARY

Albumin	Chloride	Glucose	Potassium
Alkaline phosphatase	Cholesterol	HDL	Sodium
ALT (GPT)	Cholinesterase (Butyryl)	Iron	Total Protein
Amylase	CK-NAC	LDL	Triglycerides
AST (GOT)	CO <sub>2</sub> Total	Lipase	Urea
Bilirubin	Creatinine	Magnesium	Uric Acid
Calcium	Gamma-GT	Phosphorus (Inorganic)	

## PROTEIN

<b>SPECIFIC PROTEINS:</b>	ASO	CRP High Sensitivity	IgM
Apolipoprotein A-I	Beta-2 Microglobulin	Ferritin	Lipoprotein (a)
Apolipoprotein AII	Complement Component 3	HbA1c/Hb	Microalbumin
Apolipoprotein B	Complement Component 4	IgA	Rheumatoid Factor
Apolipoprotein E	CRP Full Range (0.3-160mg/l)	IgG	Transferrin

## RESEARCH

### ANTIOXIDANTS:

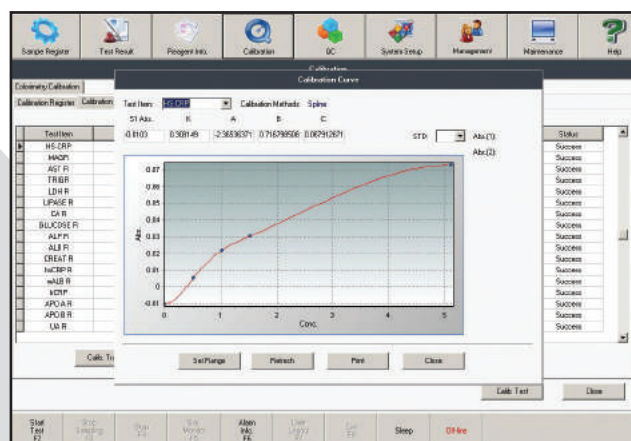
Albumin  
 Bilirubin  
 Ferritin  
 TIBC  
 Transferrin  
 Uric Acid

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The intuitive software allows easy access to information and control of operations from the main screen with informative tabs which ensures straight forward operation



Calibration Screen

## Calibration

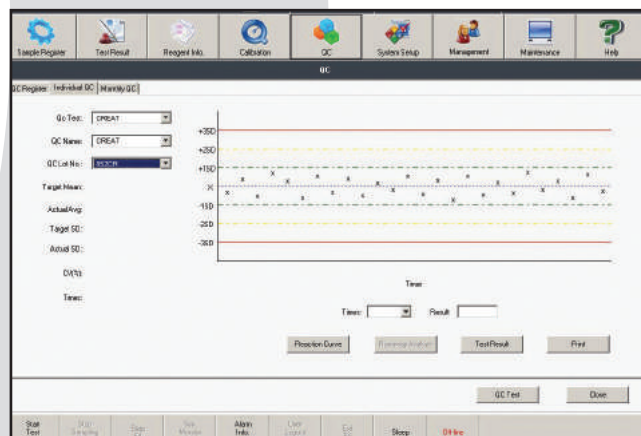
- Register calibration, review calibration data and displays multipoint calibration curves

## Reagent Information

- Registration & reagent inventory information
- Monitors and controls reagent inventory

## Results

- Review, query, download & print results
- View reaction curves



Quality Control Screen

## Quality Control

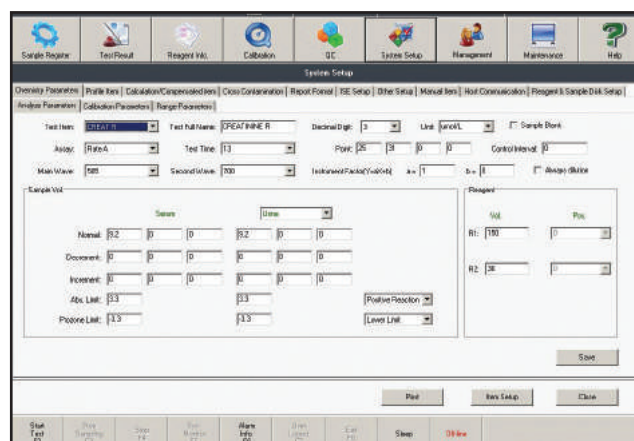
- QC registry, generation of Levey-Jennings charts & analysis of QC statistics allows assessment of results

## System Setup

- Define system parameters
- LIS communication set up
- Single reagent & sample carousel

## System Management

- Displays full patient demographics
- View workload statistics
- Database backup & restore



Parameter Screen

## Maintenance

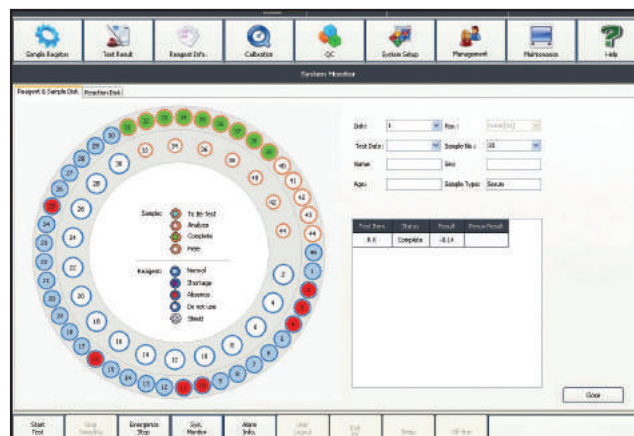
- Periodical maintenance & check-up, minimal daily maintenance required
- Robust part

## Online Help Guide

- Guides user through analyser functions
- Troubleshooting tool for chemistry and maintenance queries

## Reduced Downtime

- Save on time and costs with secure remote diagnostics allowing immediate support from expert technical an applications staff, anytime, anywhere



Run Monitor Screen

## Connectivity

- Software capable of connecting to LIS

## User - Friendly Interface

- Familiar Microsoft Windows® based software offers ease of navigation
- Intuitive symbol based software results in minimal training requirements and enhanced productivity

# Specifications

## PHYSICAL DIMENSION

Height	517mm
Depth	752mm
Width	998mm
Weight	120kg

## PERFORMANCE CHARACTERISTICS

Throughput	170 tests per hour constant speed
Analyser type	Fully automated, discrete, random access bench-top clinical chemistry analyser
Assay types	End-point, rate, 2 point assays
Maintenance	Daily maintenance – probe & mixer wash / water bath exchange / cuvette check

## REAGENT & SAMPLE SYSTEM

Reagent & Sample capacity	Shared reagent & sample carousel with a total of 66 user defined positions (positions for reagents $\geq 3$ , positions for samples $\geq 9$ )
Reagent cooling	5-15°C
Reagent & sample Identification	Internal barcode scanner
Reagent Inventory	Test & report remaining reagent volume, linked to work list
Reagent & sample pipette	Single reagent & sample pipette with digital liquid level detection & collision detection function, rinsed inside & out (warm water rinsing)
Reagent volume	0-350 $\mu$ l (1 $\mu$ l increments)
Reagent container	20ml and 70ml
Sample type	Serum, plasma, urine, CSF, & supernatants
Sample volume	3-35 $\mu$ l (0.1 $\mu$ l increments)
Sample dead volume	100 $\mu$ l in primary tubes
STAT Sampling	STAT priority function available

## REACTION SYSTEM

Reaction Time	13 minutes
Reaction Volume	150-550 $\mu$ l
Stirring Speed	Independent stirring after reagent injection (teflon coated)
Temperature Control	Water bath
Water Consumption	5.5 litres per hour
Water Requirements	NCCLS type 1 or 2 purified water supply at 0.5 bar pressure
Cuvettes	120 semi-permanent optical plastic cuvettes, 6mm optical path. Life span: 3-6 months
Cycle Time	15 seconds

## OPTICAL SYSTEM

Incubator temperature	37°C $\pm$ 0.1°C
Light Source	Long life quartz halogen lamp (water cooled)
Detection principal	12 wavelengths generated via diffraction grating: 340, 380, 405, 450, 480, 505, 546, 570, 600, 660, 700, 800nm
Detector method	Direct absorbance in cuvette (monochromatic or bi-chromatic)
Wavelength accuracy	$\pm$ 2nm
Absorbance range	0 to 3.3 Abs

## CALIBRATION & QC

Calibration principal	1 point, 2 point, multi-point, non-linearity method
Quality control	QC interval, monthly QC

## OPERATING SYSTEM

External output	Standard RS-232C interface
Software	Windows®

## POWER REQUIREMENTS

Power supply	240 VAC 50Hz/60Hz
Power output	650VA

## ORDERING INFORMATION

RX monaco analyser	RX5000
RX monaco analyser with stand	RX5001





Adiponectin	CK-NAC	Iron
Albumin	CO2	LDH (L->P)
Alkaline Phosphatase (AMP)	Complement Component C3	LDH (P->L)
Alkaline Phosphatase (DEA)	Complement Component C4	LDL Cholesterol (Direct)
ALT		Lipase
Amylase	Creatinine (Jaffe)	Lipoprotein(a)
Apolipoprotein A	Creatinine (Enzymatic)	Magnesium
Apolipoprotein A-II	CRP (high sensitivity)	Microalbumin
Apolipoprotein B	CRP Full Range	Phosphorus
Apolipoprotein E	Ferritin	Potassium
ASO	Gamma GT	Rheumatoid Factor
AST (GOT)	Glucose (GOD/PAP)	sLDL
Beta-II Microglobulin	Glucose (HK)	Sodium
Bilirubin (Direct & Total)	HbA1c	TIBC
Calcium	HDL Cholesterol (Direct)	Total Protein
Chloride	Homocysteine	Transferrin
Cholesterol	IgA	Triglycerides
Cholinesterase	IgG	Urea
CK-MB	IgM	Uric Acid

The RX series has been developed by Randox to meet the growing needs of clinical laboratory testing. Robust hardware combined with intuitive software ensures exceptionally low downtime with unrivalled precision and accuracy for results you can trust.



**RX altona**

**A semi-automated clinical chemistry analyser with increased auto functionality**

The RX altona has been developed with the user in mind by incorporating a responsive touch-screen display. The sleek ergonomic design boasts intuitive user-friendly software allowing for test menu personalisation for ease of use. The RX altona provides exciting opportunities for consolidation of routine & specialised testing and is perfectly suited to a variety of laboratory types as a primary or a backup analyser.



**RX monaco**

**A fully automated clinical chemistry analyser with unrivalled performance**

Capable of carrying out 170 tests per hour, the RX monaco guarantees unrivalled performance, providing cost-effective, high quality testing for small to mid-volume laboratories. This fully automated analyser can be easily integrated into any laboratory setting with the option of a floor standing unit if benchtop space is limited.



**RX daytona+**

**Rapid, comprehensive clinical chemistry testing on a superior fully automated analyser**

The RX daytona+ is a fully automated, random access, bench top clinical chemistry analyser capable of performing routine and specialised testing as well as emergency STAT sampling. With a throughput of 450 tests per hour including ISE, the RX daytona+ offers a high performance, fully automated solution to mid-volume clinical chemistry testing. With intuitive icon-based software, the RX daytona+ is the only analyser in its class with a sample clot detection sensor ensuring efficiency, precision and accuracy.



**RX imola**

**A compact fully automated solution for high quality clinical chemistry testing**

The RX imola combines superior quality, intuitive software and minimal maintenance for increased productivity and reduced downtime for rapid comprehensive testing. This compact, fully automated benchtop analyser is capable of handling the workload of a medium to high throughput laboratory, with a throughput of 560 tests per hour including ISE.



**RX modena**

**A high volume, floor standing, fully automated clinical chemistry analyser that promises to revolutionise your laboratory**

Capable of running up to 1,200 tests per hour, with unique HbA1c testing abilities, the RX modena consolidates all your assay requirements onto one intuitive platform. This high throughput analyser has a continuous loading hatch allowing emergency samples to be analysed quickly and easily during run. The RX modena boasts icon based, interactive touch-screen technology adding a modern flair to your laboratory.



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