

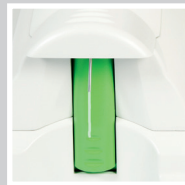


CE

RANDOX

# RX monza

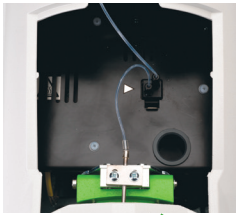
A HIGH PERFORMANCE SEMI-AUTOMATED CLINICAL CHEMISTRY ANALYSER



# SYSTEM OVERVIEW

The RX monza is a compact semi-automated analyser with astonishing functionality. The RX monza is capable of laboratory standard, high precision results at a competitive cost per test.

## CUVETTES & FLOW CELL



- Option to run in cuvette or flow cell mode
- Flow cell washing
- Multi-purpose temperature controlled reaction chamber encompassing 3 measurement modes; flow cell, cuvette and micro cuvette mode and coagulation tubes

## ON BOARD PRINTER



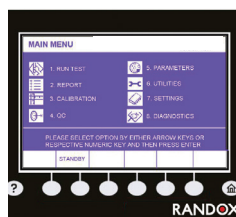
- Internal thermal printer
- Full graphics facility
- Capable of displaying 4 columns of information

Aspiration System ●



With 192 channels in total including 79 dedicated parameters the RX monza can open new and exciting opportunities for both routine and specialised testing including coagulation testing. The flexibility of pre-programmable channels and an extensive RX series test menu ensures complete patient profiling. Simple step by step onboard instructions and easy to follow reports ensure the RX monza provides a consistent user performance producing results you can trust.

### OPERATOR INTERFACE

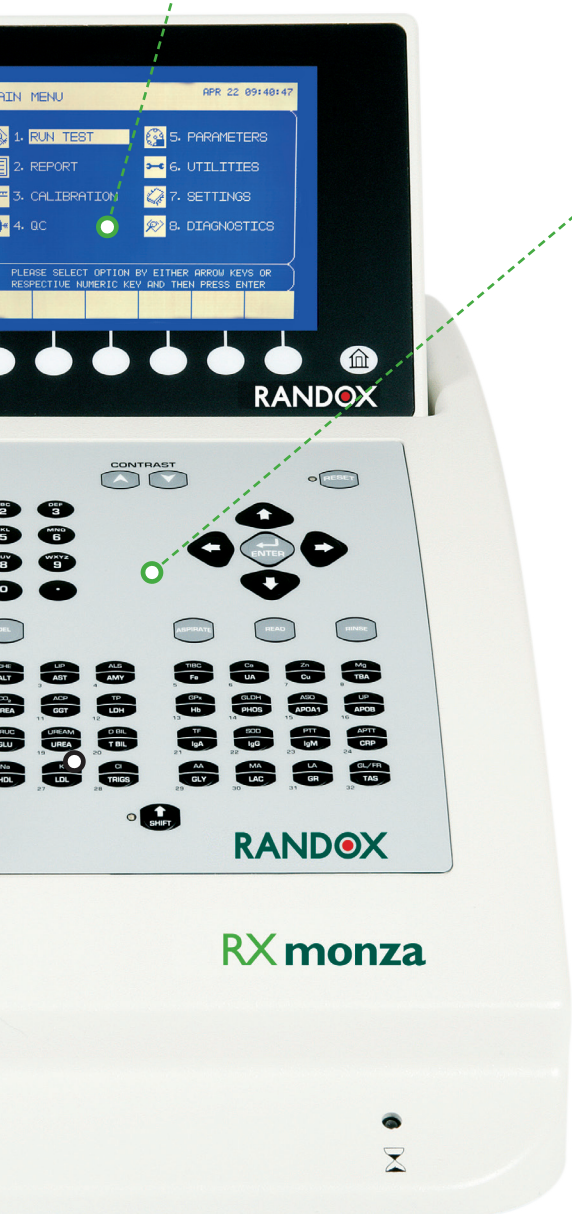


- Adjustable display screen
- 115mm x 86mm active area with backlit monochrome colour display
- Easy access to all user needs from one home screen

### DIRECT ACCESS KEYS



- 32 Direct Access keys for dedicated parameters
- Requires minimal training, saving time and cost
- Direct access keys to ensure an easy and efficient user experience







# RX monza

- Ability to run both clinical chemistry and coagulation testing on the same platform
- Automatic flagging ensures inaccurate results and testing errors are easily detected
- Minimum reaction volume of 500µl results in a low cost per test
- Analysis of a wide range of analytes from as little as 5µl of sample
- Ability to run flow cell mode or cuvette mode ensures optimal efficiency in testing
- Automatic storage of up to 1000 patient results
- Superior built in QC software automatically generates Levey-Jennings charts
- Eight wavelengths generated via optical filters (340nm -700nm)
- Onboard printer with optional dry block thermostat for incubating cuvettes
- 192 channels in total, including 79 dedicated parameters
- Minimal servicing and maintenance required
- Direct access keys and user friendly software



# Why RX monza ?



## ● ACCURATE TESTING

- No confirmatory testing required with high quality results first time, every time, saving unnecessary additional costs
- Automatic flagging ensures inaccurate results and testing errors are detected
- The 18 bit photometer increases the sensitivity of the analyser meaning there is reduced need for test re-runs that require a low sensitivity

## ● EASE OF USE

- Intuitive operations ensure straightforward testing for enhanced productivity
- Minimal user training required
- User prompts displayed at each step

## ● ADVANCED SECURITY

- Password protection function for QC result inclusion/exclusion, analyser setup and assay management ensures only those who should have access can gain access

## ● EXTENSIVE DEDICATED TEST MENU

- Availability of both routine and specialised assays facilitates complete patient profiling for a well informed and accurate diagnosis
- Test menu includes-routine chemistry-Lipids-Diabetes-Electrolytes-Cardiac-Renal Liverfunction,Coagulation,Veterinary and Food and Wine testing

## ● COST SAVINGS

- Low maintenance requirements and one annual service carried out by the user removes cost of expensive engineer call outs
- Standardised cuvette usage reduces consumable costs
- Minimum reaction volume of 500µl results in decreased cost per test
- Halogen tungsten lamp with stand-by mode and automatic monitoring of lamp life up to 1000 hours of light

## ● REDUCED SAMPLE VOLUME

- Analyse a wide range of analytes from as little as 5µl of sample
- Small sample volume allows multiple tests to be performed from a single sample, ideal for paediatric testing

## ● VERSATILITY

- Space saving compact bench top design
- Ability to run flow cell mode or cuvette mode ensures a maximum number of chemistries can be performed on one system
- Wide range of calibration types available including Linear, k-factor, point to point, spline and log-logit

## ● FLEXIBILITY

- RX monza is capable of running monochromatic, bi-chromatic, endpoint, kinetic, ISE, sample blanking and reagent blanking assays
- Up to eight wavelengths can be generated via optical filters e.g. 340, 415, 510, 548, 578, 600 660 and 700nm ensuring a multitude of chemistries are possible on one system
- 192 channels in total including 113 open channels for user definable, unrestricted testing
- On board printer with results printed automatically or on request

# TEST MENU

## CLINICAL

### Autoimmune:

CRP  
IgA  
IgG

### Anaemia:

Iron  
G6P-DH  
Transferrin

### Basic Metabolic Profile:

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

### Cardiac:

Cholesterol  
CK-MB  
CK-NAC  
CRP  
Direct HDL Cholesterol  
Direct LDL Cholesterol  
Triglycerides

### Comprehensive Metabolic Profile:

Acid Phosphatase  
Albumin  
Alkaline Phosphatase  
ALT  
AST (GOT)  
Bilirubin (Total/Direct)  
Calcium  
Chloride  
CO<sub>2</sub> Total  
Creatinine (Jaffe)  
Glucose  
Potassium  
Sodium  
Urea

### Diabetes:

Cholesterol  
Creatinine  
Cystatin C  
Direct HDL Cholesterol  
Direct LDL Cholesterol  
Glucose  
Glucose Hexokinase  
HbA1c/Hb  
Microalbumin  
NEFA  
Ranbut (Hydrobutyrate)  
Total Protein  
Triglycerides  
Urinary Protein

### Electrolytes:

Calcium  
Chloride  
CO<sub>2</sub> Total  
Magnesium  
Potassium  
Sodium

### Inflammation:

Aldolase  
ASO  
CRP

### Hepatic Function:

Aldolase  
Albumin  
ALT  
AST (GOT)  
Bile Acids  
Bilirubin (Total/Direct)  
Cholinesterase  
IgA  
IgG  
Total Protein  
Transferrin

### Lipids:

Apolipoprotein A-I  
Apolipoprotein B  
Cholesterol

Direct HDL Cholesterol  
Direct LDL Cholesterol  
Triglycerides

### Neonatal Screening:

CRP

### Nutritional Status:

Albumin  
Iron  
Magnesium  
Potassium  
Transferrin  
Zinc

### Renal Function:

Albumin  
Beta-2 Microglobulin  
Calcium  
Creatinine  
Cystatin C  
Glucose  
HbA1c/Hb  
IgG  
Microalbumin  
Potassium  
Sodium  
Phosphorus (Inorganic)  
Urinary Protein  
Urea  
Uric Acid



## VETERINARY

Albumin	Creatinine	Total Protein
Alkaline phosphatase	Gamma-GT	Urea
ALT (GPT)	GLDH	Uric Acid
Ammonia	Glucose	Urinary protein
Amylase	Ransel (Glutathione peroxidase)	
AST (GOT)	Ranbut (Hydroxybutyrate)	
Bile acids	Iron	
Bilirubin	Lactate	
Calcium	Lipase	
Chloride	Magnesium	
Cholesterol	NEFA (Non-esterified fatty acids)	
Cholinesterase (butyryl)	Phosphorus (Inorganic)	
CK-NAC	Potassium	
CO <sub>2</sub> Total	Sodium	
Copper	Ransod (Superoxide dismutase)	

## RESEARCH

### Antioxidants:

Glutathione Reductase  
Ransel (Glutathione Peroxidase)  
Ransod (Superoxide Dismutase)  
Total Antioxidant Status

### Food and Wine Testing:

Acetic acid  
Ammonia  
Copper  
Ethanol  
Glucose/fructose  
Lactic acid

Malic acid  
NOPA  
Potassium  
TAS  
Total SO<sub>2</sub>

## SPECIALITY TEST

Ethanol (DOA)  
Acid Phosphatase

## COAGULATION

Activated Partial Thrombin Time (APTT)  
Antithrombin (ATIII)  
Prothrombin Time (PT)  
Thrombin Time (TT)



REPORT- DAY TO DAY- PATIENT

DATE: NOV 01 2009 TO DEC 17 2009  
TOTAL RECORDS FOUND 46

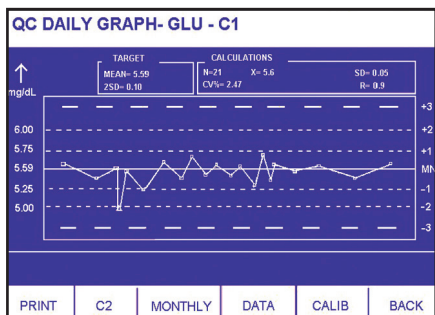
TIME	SAMPLE NO.	ASSAY	RESULT	UNIT	FLAG
NOV 01 2009					
10:12	GC01	GLU	166	mg/dl	H
10:15	A23416	GLU	101	mg/dl	
10:16	A23416	GLU	64	mg/dl	L
11:34	GC01	ALT	84	IU/L	H
11:39	A23416	ALT	33	IU/L	
14:22	GC01	CRE	1.8	mg/dl	
14:39	A23416	CRE	4.1	mg/dl	H

GENERATING REPORT... COMPLETED

PRINT PAGE UP PAGE DN BACK

Report Screen

- RUN MONITOR SCREEN
  - Run tests, calibrations and quality control
  - View status in real time including time to completion
- REPORT SCREEN
  - Search by date and filter by patient results, calibrations or QC
- CALIBRATION SCREEN
  - Wide range of calibration type
  - Ability to view calibration curves



Quality Control Screen

- QUALITY CONTROL SCREEN
  - View daily or monthly QC data including Levey-Jennings charts
- UTILITIES SCREEN
  - Less than five minutes daily maintenance required
  - Includes functions such as pump wash and flow cell wash
- SYSTEM SETTINGS SCREEN
  - Adjust system settings including date, time, numbering format etc

PARAMETERS: 18 - GLU

% LINEARITY	ASP VOLUME	SLOPE a
<input type="text"/>	<input type="text"/>	<input type="text"/>
MIN RX ABS	SAMP VOLUME	INTERCEPT b
<input type="text"/> Abs	<input type="text"/> $\mu$ L	<input type="text"/>
MAX RX ABS	R1 VOLUME	
<input type="text"/> Abs	<input type="text"/> $\mu$ L	
MIN RGT ABS	R2 VOLUME	
<input type="text"/> Abs	<input type="text"/> $\mu$ L	
MAX RGT ABS	R3 VOLUME	
<input type="text"/> Abs	<input type="text"/> $\mu$ L	

PLEASE SELECT FIELDS BY SCROLLING AND PRESS ENTER TO MODIFY

PRINT CALIB PAGE UP PAGE DN SAVE BACK

Parameter Screen

- PARAMETER SCREEN
  - Open channels for custom chemistry parameters required for non-routine or research applications
- EASY READ REPORTS
  - Real time results status, including built in timer providing a count down to completion
  - Advanced built in QC software automatically displays reaction curves, calibration curves and levey-jennings charts, enabling full traceability of results.



# SPECIFICATIONS

## PHYSICAL DIMENSIONS

Height	225-280 mm, 8.9-11 in (depending on screen angle)
Depth	445 mm, 17.5in
Width	405 mm, 15.9in
Weight	12kg, 26lbs

## PERFORMANCE CHARACTERISTICS

Absorbance range	0.0 to 3.0 Absorbance units (cuvette and flow cell modes)
Analyser accreditation	CE , ROHS, WEEE complaint and UL certification
Analyser type	Semi-automated, flow cell based, bench-top clinical chemistry analyser (Also compatible with conventional cuvettes)
Assay tests	1 point (Endpoint), 1 point with sample blank, 2 point (fixed time), kinetic, absorbance
Calibration principal	K-Factor; Linear; point to point, spline, log-logit. 3 calibrations can be stored for each assay
Chemistry Parameters	79 pre-programmed channels, 113 open channels are available
Cuvettes	Multi-purpose temperature controlled reaction chamber encompassing 3 measurement modes; flow cell, cuvette and micro cuvette mode and coagulation tubes
Data management	Storage of up to 1000 results, stores the last three calibrations
Detector	Silicon photo-diode
Detection principal	Direct monochromatic/bichromatic absorbance in flow cell or external cuvette. 8 wavelengths: 340, 415, 510, 546, 578, 600, 660, 700 nm
Flow cell washing	Semi-automatic wash system removes reaction waste
Light source	Halogen tungsten lamp with standby mode and lamp life measurement (Life expectancy $\geq$ 1000 hours)
Maintenance requirements	Daily: Flow cell wash Weekly: Calibration of peristaltic pump and photometer Annual PM service (Lamp and tubing)
Measurement interval	For kinetic assays single wavelength, every 1 second. Total measurement time is selectable from 1 second to 999 seconds
Operator interface	115 mm x 86 mm active area, backlit monochrome colour display with adjustable display angle
Printer	Internal thermal printer with full graphics facility
Quality Control	3 types of QC for each method, within day as well as day to day interactive Levy Jennings charts, mean, SD and % CV is calculated for each assay
Relative Humidity range	Indoor humidity: 80% up to 31°C, decreasing linearity to 50% at 40°C
Sample aspiration mode	Semi-automatic aspiration of reaction mixture into the flow cell using peristaltic pump. External cuvettes can also be used with manual dispensing of the reaction mixture
Sample Type	Serum, plasma, urine, wine, CSF
Temperature of flow cell /cuvette	20 to 40°C in steps of 1°C



## POWER & CONNECTIVITY

Input Voltage	100-120V AC/ 60Hz, 200-240V AC/50 Hz,
Power Consumption	75W max
UPS	UPS system recommended

## ORDERING INFORMATION

RX monza analyser	RX2901
RX monza cuvette Incubator	M701-484
Coagulation start up kit	RX2908

## DRY BLOCK THERMOSTAT

A dry block thermostat for incubating cuvettes.

Optimised for use with RX monza assays

## ADVANTAGES

Minimises consumable usage

Flexible temperature settings between 25-42°C

Improves throughput capabilities with the RX monza



## COAGULATION

Coagulation testing on the RX monza enables Clinical Chemistry and Coagulation testing to be performed on a single platform which is extremely unique for a semi-automated analyser. Ensuring the same high level of performance from our existing clinical chemistry applications, the option to perform coagulation testing on the RX monza allows for effective evaluation of clotting and bleeding as well as risk assessment in patients before and after surgery. A full set of Randox Coagulation Controls are available and cover all coagulation tests.

Coagulation testing on the Rx Monza is carried out using the coagulation adaptor and microcuvettes. The adaptor fits directly onto the analyser where the standard cuvette/flow cell is normally held. Our customised adaptor and tubes allow for accurate measurement of PT, aPTT, TT and ATIII in conjunction with the latest software. The Rx Monza guides the operator through the measurement process with on screen instructions and an audible alarm for reagent addition. Once a clot is detected by the Monza software the instrument will automatically print the result. The Rx Curve option on the Monza shows reaction progression in real time.



# A-Z TEST MENU

Acetic Acid  
Acid Phosphatase  
Activated Partial Thrombin Time (APTT)  
Albumin  
Aldolase  
Alkaline Phosphatase  
ALT  
ALT (GPT)  
Ammonia  
Amylase  
Antithrombin III (ATIII)  
Apolipoprotein A-I  
Apolipoprotein B  
ASO  
AST (GOT)  
Beta-2 Microglobulin  
Bile acids  
Bilirubin (Direct)  
Bilirubin (Total)  
Calcium  
Chloride  
Cholesterol  
Cholinesterase  
Cholinesterase (butyryl)  
CK-MB  
CK-NAC  
CO<sub>2</sub> Total  
Copper  
Creatinine  
Creatinine (Jaffe)  
CRP- (Canine)  
Cystatin C  
D-3-Hydroxybutyrate (Ranbut)  
Direct HDL Cholesterol  
Direct LDL Cholesterol  
G-6-PDH  
Gamma-GT  
GLDH  
Glucose  
Glucose Hexokinase  
Glutathione Peroxidase (Ransel)  
Glutathione Reductase  
Glycerol  
HbA1c/Hb  
Iron  
Lactate

Lactic Acid  
Lipase  
Magnesium  
Malic Acid  
Microalbumin  
NEFA (Non-esterified fatty acids)  
Phosphorus (Inorganic)  
Potassium  
Prothrombin Time (PT)  
Sodium  
Superoxide Dismutase (Ransod)  
Thrombin Time (TT)  
Total Antioxidant Status  
Total Protein  
Transferrin  
Triglycerides  
Urea  
Uric Acid  
Urinary protein  
Zinc

# RX series

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 monza

The RX monza is a compact semi-automated analyser with astonishing functionality, offering 192 channels, 79 of which have dedicated parameters. The RX monza will open exciting opportunities for both routine and specialised testing including coagulation testing.



## ● RX monaco

The RX monaco is a fully automated random access clinical analyser capable of carrying out 170 tests per hour. It provides unrivalled performance for low to mid volume testing.



## ● RX daytona+

Superior performance for mid volume laboratories. The RX daytona+ is capable of running 270 photometric tests per hour or 450 tests per hour including ISEs.



## ● RX imola

Efficiency for medium sized laboratories. The RX imola is a random access benchtop clinical analyser with a throughput of 560 tests per hour including ISEs.

# RX series

Precision. Reliability. Accuracy.



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