

# RX DAYTONA+ Clinical Chemistry Analyser



HIGH QUALITY TESTING ON A COMPACT EASY TO USE CLINICAL CHEMISTRY ANALYSER FOR ACCURATE RESULTS YOU CAN TRUST



01	BENEFITS
03	SYSTEM OVERVIEW
05	TEST MENU
09	SOFTWARE
11	FEATURES AT A GLANCE
12	ORDERING INFORMATION
13	SPECIFICATIONS
15	THE RX SERIES
17	RANDOX - A GLOBAL DIAGNOSTIC SOLUTIONS PROVIDER
18	CONTACT US

# **BENEFITS**

The RX daytona+ is a bench-top, fully automated, random access clinical chemistry analyser capable of performing routine & specialised testing and emergency STAT sampling. The most versatile analyser in its class, the RX daytona+ combines robust hardware and intuitive software with the world leading RX series test menu for unrivalled precision, accuracy and reliability. The RX daytona+ is capable of 270 photometric tests per hour and a total of 450 tests including ISE.

# **TEST MENU & CONSOLIDATION**



Our extensive dedicated test menu comprises routine chemistries, lipids, antioxidants, cardiac markers and diabetes testing allowing laboratories to expand their testing capabilities while reducing additional costs associated with outsourcing samples for external testing. Direct, on-board, HbA1c testing capabilities provide many time saving benefits in the laboratory.

#### **ACCURATE RESULTS**



Dedicated sample and reagent pipettes on-board to minimise carryover with liquid level sensors and crash detection. Serum indicies check the integrity of patient samples, flagging if samples are deemed icteric, haemolytic or lipaemic. Dual 5 speed stirrers are optimised for each assay to ensure highly accurate results, delivering unrivalled precision with excellent CVs.

# QUALITY CONTROL



The RX daytona+ provides simple, operational and testing efficiency. 7 different calibration options increase confidence, with optimum algorithms being used to achieve the most accurate results. Users can view QC history with automatically generated Levey-Jennings Charts, Calibration Curves and QC statistics putting patient safety at the centre of your laboratory.

# FLEXIBILITY & VERSATILITY



12 wavelengths generated via diffraction grating (340 - 800nm) ensure a multitude of chemistries are possible on one system. The RX daytona+ allows for rapid and efficient STAT testing for emergency samples. Managing workflow, and processes the on-board barcode readers for both reagent and samples demonstrate flexibility and ease of use .

# **UNRIVALLED PERFORMANCE**



Providing superior performance with maximum uptime and swift reporting of results, there is no interruption to workflow. Sensitive clot detection sensors and on-board cuvette checking ensures only clean and viable reaction vessels are used. With a built-in inventory management system, the RX daytona+ automatically calculates remaining reagent volume and the number of tests available.

# **COST SAVINGS**



Minimal maintenance required with just 2 preventative maintenance services per year for reduced downtime. Our extensive test menu allows consolidation of testing, the ability to run specific proteins removes the need for a separate nephelometry system, with a low sample volume required. The RX daytona+ delivers on economic efficiencies with a low water consumption of only 5L per hour.

# SYSTEM OVERVIEW

# REAGENT CAROUSEL

1

50 reagent positions for 70ml & 20ml bottles, all cooled between 8 to 15°C. Automatic barcode identification ensures smooth recognition of reagents. Dedicated reagents optimised for use on the RX series, are available from Randox.

# **MIXING SYSTEMS**

2

Equipped with dual five speed stirrers, optimised mixer speeds are pre-set based on assay parameters to ensure best performance. Thorough mixing of reaction solutions removes any bubbling or frothing which could affect precision.

# **WASH STATION**

3

A thorough 12 stage washing process with acid, alkali and pure water wash steps is employed. Liquid level sensors at stations 1-5 prevent cuvette overflows.



# SAMPLE CAROUSEL

4

50 positions are contained within the universal sample carousel, including 10 bespoke positions for calibrators and controls. The emergency loading port allows for the processing of STAT samples. Barcode sample identification ensures accurate matching of patient identification to sample. Low sample volumes  $(1.5-35\mu l)$  enable easy testing of paediatric and veterinary patients.

# **SEMI-PERMANENT CUVETTES**

5

72 semi-permanent reaction cuvettes lasting for 3 - 6 months help to reduce consumable costs. On-board cuvette checking function ensures only clean and viable reaction vessels are used.

# **OPTIONAL ISE UNIT**

6

Providing cost savings, the RX daytona+ has a built in ISE unit for direct measurements of sodium, potassium and chloride. The direct ISE approach requires no dilution steps to be carried out limiting possible sources of inprecision and reducing consumable costs.



# THE RX SERIES TEST MENU



# CLINICAL

#### AUTOIMMUNE:

Complement Component 3 Complement Component 4 CRP

CRP Full Range (0.3-160mg/l)

CRP High Sensitivity

lgΑ ΙgΕ lgG

lgΜ

Rheumatoid Factor

#### **BASIC METABOLIC PROFILE:**

Calcium Chloride Creatinine Glucose Potassium Sodium

#### **BONE PROFILE:**

Alkaline Phosphatase

Calcium Phosphorus Total Protein

#### CARDIAC:

Adiponectin Cholesterol CK-MB CK-NAC CRP

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

Digoxin

Direct HDL Cholesterol

Direct LDL Cholesterol

H-FARP Lipoprotein (a) Myoglobin sdLDL sPLA<sub>2</sub>-IIA Triglycerides

# COMPREHENSIVE METABOLIC

PROFILE:

Albumin

Alkaline Phosphatase

AST (GOT)

Calcium

Chloride CO<sub>2</sub> Total Creatinine Glucose Lactate Sodium Total Bilirubin Total Protein

# **DIABETES:**

Adiponectin Cholesterol Creatinine Cystatin C

Direct HDL Cholesterol

Direct LDL Cholesterol

Fructosamine Glucose Glycerol

HbA1c/Hb (Direct) HbA1c/Hb (Indirect)

Microalbumin NEFA (Non-Esterified Fatty Acids)

Ranbut (Hydroxybutyrate) Total Protein

Triglycerides Urinary Protein

#### **ELECTROLYTES:** Calcium

Chloride (Nondirect) CO, Total

Magnesium

Potassium (Nondirect) Sodium (Nondirect)

#### HAEMOLYTIC ANAEMIA:

G-6-PDH Haptoglobin LDH

#### **HEPATIC FUNCTION:**

Albumin Aldolase

Alkaline Phosphatase

Ammonia AST (GOT) Bile Acids

# Cholinesterase

Complement Component 3
Complement Component 4 Direct Bilirubin

Gamma GT GLDH Glycerol Haptoglobin lgΑ ΙgΜ Iron (UIBC) LDH

Total Bilirubin Total Protein

Transferrin Transthyretin (Prealbumin)

# INFLAMMATION AND

INFECTION: ASO CRP

Lactate Rheumatoid Factor

# LIPIDS:

Apolipoprotein A-I Apolipoprotein All Apolipoprotein B Apolipoprotein CII Apolipoprotein CIII Apolipoprotein E Cholesterol Direct HDL Cholesterol Direct LDL Cholesterol Lipoprotein (a) Triglycerides

#### **NEONATAL SCREENING:**

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

lgΕ

Transthyretin (Prealbumin)

## **NEUROLOGICAL DISORDERS** (CSF):

lgΑ lgG

#### **NUTRITIONAL STATUS:**

Albumin Iron Iron (UIBC) Magnesium Potassium TIRC Transferrin

Transthyretin (Prealbumin)

# PANCREATIC FUNCTION:

Amylase Glucose IDH

Pancreatic Amylase

#### **RENAL FUNCTION:** Albumin

Ammonia Beta-2 Microglobulin

Calcium

Chloride Creatinine Cystatin C Glucose

HbA1c/Hb (Direct) HbA1c/Hb (Indirect)

lgG LDH Magnesium Microalbumin Potassium Sodium

Phosphorus (Inorganic) Urinary Protein

Uric Acid



# **VETERINARY**

Alkaline Phosphatase ALT (GPT) Aldolase Ammonia AST (GOT) Bile Acids Bilirubin

Cholesterol Cholinesterase (Butyryl) CK-NAC CO<sub>2</sub> Total Copper Canine CRP CRP Gamma - GT GLDH

Iron (UIBC) Lactate Lactate Dehydrogenase Magnesium NEFA (Non-Esterified Fatty Acids) Phosphorus (Inorganic) Potassium

Ranbut (Hydroxybutyrate) Ransel (Glutathione Peroxidase) Ransod (Superoxide Dismutase) Sodium Triglycerides Uric Acid

Urinary Protein



Calcium Chloride

# TOXICOLOGY

#### THERAPEUTIC DRUGS:

Carbamazepine Gentamicin Phenobarbitol

Phenytoin Valproic Acid

#### DRUGS OF ABUSE:

Ethanol



## **PROTEINS**

# SPECIFIC PROTEINS:

Apolipoprotein A-I Apolipoprotein All Apolipoprotein B Apolipoprotein CII Apolipoprotein CIII Apolipoprotein E

Beta-2 Microglobulin

Complement Component 3 Complement Component 4 CRP CRP Full Range (0.3-160mg/l)

CRP High Sensitivity Cystatin C Ferritin

Haptoglobin HbA1c/Hb (Direct)

 $\mathsf{Ig}\mathsf{A}$ ΙgΕ lgG lgΜ

Lipoprotein (a)

Microalbumin Myoglobin Rheumatoid Factor

Transferrin

Transthyretin (Prealbumin)



# **RESEARCH**

#### **ANTIOXIDANTS:** Albumin

Uric Acid

Bilirubin Glutathione Reductase Ransel (Glutathione Peroxidase) Ransod (Superoxide Dismutase) TIBC Transferrin

# **FOOD AND** WINE TESTING: Acetic Acid

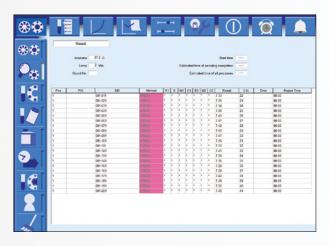
Copper Ethanol Glucose/Fructose Lactic Acid Malic Acid NOPA Potassium Total SO,

#### **BIOTECHNOLOGY:**

Glutamate Glutamine

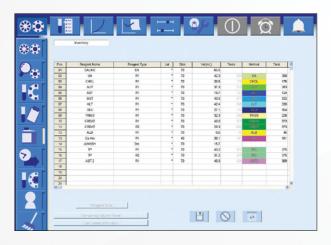
# SOFTWARE

The RX daytona+ utilises familiar Windows10® based software and easily recognisable icons making it appealing and easy-to-use for all staff involved in its operation. Straightforward operation of the software results in minimal training requirements and enhanced productivity. The superior functionality of the quality control software generates Levey-Jennings charts, calibration curves and QC statistics for reliable patient reporting. LIMS (Laboratory Information Management System) connectivity is easily set up ensuring rapid transfer of information between host and analyser systems.



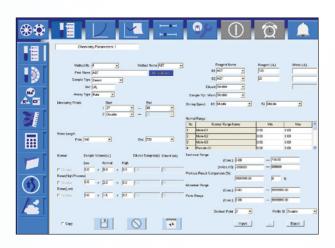
# **REPORTS**

The operator can easily search for previous reports and view real time results status, including time left until completion. The RX daytona+ has a high capacity storage of up to 30,000 patient reports.



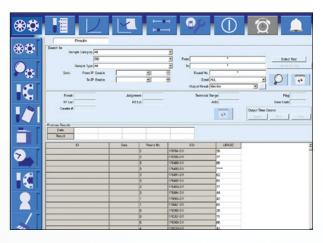
# **REAGENT INVENTORY**

Remaining reagent volume is automatically calculated onboard alongside the number of tests available and stability of the reagents. Should insufficient volume remain for any reagent, an alarm will sound, allowing the operator to resolve the situation.



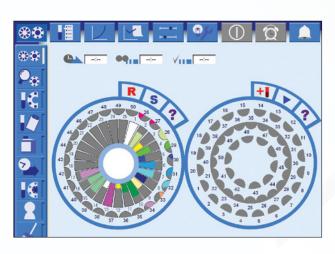
# **CHEMISTRY PARAMETERS**

The chemistry parameters screen enables pre-sample dilution to be set up and re-running of assays as required. The user may set up to 20 different test profiles and define the order of analysis.



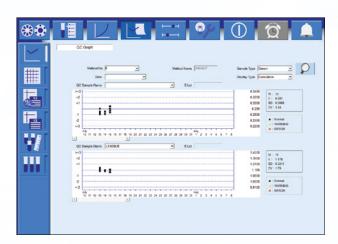
# **RESULTS**

Results are easily searchable via options such as sample type or date. Laboratory staff can download and print results or transmit results to the LIMS system for all relevant clinicians to view.



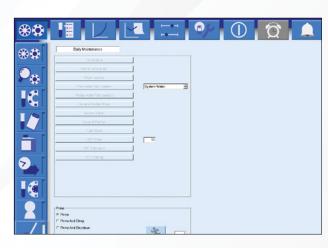
# **RUN MONITOR**

The run monitor displays full patient demographics. This screen indicates the number of tests and time left until completion. Operators can add emergency STAT samples from this screen.



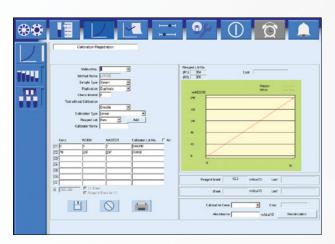
# **QUALITY CONTROL**

The QC screen generates Levey-Jennings charts and calibration curves for a visual performance assessment, plus easy identification of QC errors and emerging trends. QC multi rules can be applied to ensure high error detection and minimal false rejection.



# **MAINTENANCE**

Less than 5 minute daily maintenance is required. Autostart function allows for cleaning of cuvettes and probes at the start of each day saving the user time and effort.



# **CALIBRATION**

The software displays the current valid calibration for each assay installed, the reagent blank absorbance (if appropriate) and the calibration check interval. There are 7 calibration models available: Factor, Linear, Point to point, Log-logit, Exponential, Spline & Spline 2.

# FEATURES AT A GLANCE

Providing excellence in clinical chemistry, the RX daytona+ fully automated system combines robust hardware and intuitive software with a wide range of unique and innovative features. Renowned for quality and reliability, the RX daytona+ testing capabilities suit all laboratory sizes and types. The RX daytona+ leads the way with the RX series extensive dedicated clinical chemistry test menu.

As the most versatile analyser in its class, the RX daytona+ not only provides laboratories with increased functionality, flexibility and efficiencies, but excels in performance delivering unrivalled precision with low CVs. The RX daytona+ provides laboratories with the upmost in reliability, analyser uptime and accuracy of patient results.

#### **TESTING FUNCTIONALITY**



- Dual 5 speed stirrers enabling mixing to be optimised for each assays requirement
- Reagent micropipette with liquid level sensor and crash detection to alert users to errors
- Unique loading hatch allows emergency samples to be analysed quickly and easily at any time

# SYSTEM COMPONETS



- Versatile reagent carousel with 50 cooled positions
- Universal sample carousel with 40 positions and 10 cooled control and calibrator positions
- 72 semi-permanent cuvettes with a 3 6 month lifespan and on-board cuvette checking system

#### LOW MAINTENANCE



- Maximum of 5 minutes daily maintenance required
- Automatic wake and sleep mode and pre-programmable instrument preparation
- Low water consumption of just 5L per hour

# **CUSTOMER SUPPORT**



# ORDERING INFORMATION

RX daytona+ with ISE RX4040
RX daytona+ without ISE RX4041

For more information contact your local representative, or email us at: info@bgiamericas.com.

# **SPECIFICATIONS**

# PHYSICAL DIMENSIONS

Height	625mm
Depth	670 mm
Width	870mm
Weight	120kg

# PERFORMANCE CHARACTERISTICS

Throughput	270 tests per hour, 450 tests per hour with ISE
Analyser type	Compact fully automated random access bench top clinical analyser
Assay type	Endpoint, kinetic and ISE
Maintenance	Daily maintenance - less than 5 minutes. Simple twice yearly preventative
rancenance	maintenance service

# **REAGENT & SAMPLE SYSTEM**

Data management	Storage of up to 30,000 patient reports, search facility
Test channels	50 photometric channels, 3 direct ISE
Sleep mode	User defined sleep mode capabilities with automatic wash and instrument prep
Reagent pipette	Dedicated reagent micropipette with liquid level sensor and crash detection
Reagent capacity	Removable turntable with 50 cooled positions for 20ml and 70ml bottles
Reagent cooling	8 to 15°C
Reagent identification	Barcode reagent identification
Reagent inventory	Calculation of remaining reagent volume and tests available Alert for shortage or expired reagents
Sample addition	Sampling interruption for addition of samples
Sample capacity	50 positions are contained within the universal carousel, including 10 bespoke positions for calibrators and controls
Sample dead volume	150µl in standard or primary tubes, 100µl in paediatric cups
Sample dilution	Pre-dilution and automatic re-assay with diluted, reduced or increased sample volume
Sample identification	Barcode sample identification
Sample pipette	Dedicated sample micropipette with liquid level sensor, crash protection and clot detection
Sample tube size	Multiple primary tube sizes (diameter 12 to 16mm, height 55 to 100mm), Paediatric cups
Sample type	Serum, Plasma, Urine, CSF & Whole Blood
Sample volume	1.5 to 35μl (0.1μl increments)
STAT sampling	STAT samples can be added immediately via emergency loading port

# **REACTION SYSTEM**

Reaction time	10 minutes (R1: 5 min. + R2: 5 min.)
Reaction volume	100 to 350μl
Stirring speed	5 speed levels available
Stirring system	Dual 5 speed stick type rotating stirrers
Temperature control	Dry bath
Water consumption	Maximum 5L per hour
Water requirements	NCCLS type 1 or 2 purified water supply
Wash unit	12 stage washing process
Cuvettes	72 semi-permanent cuvettes
Incubator temperature	37°C ± 0.1°C
Cycle time	13 seconds

# OPTICAL SYSTEM

Detector method	Direct absorbance in cuvette (bi-chromatic and monochromatic)
Detection principal	12 wavelengths generated via diffraction grating: 340, 380, 415, 450, 510, 546, 570, 600, 660, 700, 750 and 800nm
ISE unit	Optional ISE unit available
Light source	Halogen tungsten lamp air cooled by fan

# CALIBRATION & QC

Quality control	Interactive Levey-Jennings charts, daily, monthly and batch QC with data archiving
Calibration principal	Factor, Linear, Point to point, Log-logit, Exponential, Spline and Spline 2

# POWER & CONNECTIVITY

	AC100V to 120V, 6.5A (Max.)
Power requirement	AC 200 to 230 V, 3.3 A (Max.)
	50/60Hz
Power consumption	650VA
Permissable voltage variation	± 10% (Max.)
LIMS connectivity	Bi-directional ASTM Standard (RS232 connection)

# **OPERATING SYSTEM**

Operator interface Windows10® based software	
--	--

# THE RX SERIES





# **RX MISANO**

A semi-automated clinical chemistry analyser with the ability to run flow cell or cuvette mode. The RX misano offers 9 wavelengths spanning 340 - 700nm. A large 7" touch screen monitor responsive even when wearing lab gloves allows the user to easily navigate through the testing screens of the analyser. USB port allows users to import Randox-defined test menus and export patient, QC and calibration results.

# **RX MONACO**

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





# **RX IMOLA**

The RX imola is a cost effective system that delivers consistent high quality results. With a throughput of 400 photometric tests and up to 560 tests per hour including ISE, the RX imola provides rapid, comprehensive testing on a small footprint analyser. The RX imola is a fully automated system with random access and STAT sampling functionality, boosting productivity and saving time when it matters most.

# **RX MODENA**

A fully automated, random access, floor standing clinical chemistry analyser with a photometric throughput of 800 tests per hour, increasing to 1200 including ISE. There are 13 wavelengths spanning 340 - 800nm and a fully automated onboard, haemolysis function for running direct HbA1c. Accurate results are supported by liquid level, clot, and crash detection. The operating system utilises a modern touchscreen interface and Windows10® icon based software.

# RANDOX - A GLOBAL DIAGNOSTIC SOLUTIONS PROVIDER

Randox has been supplying laboratories worldwide with revolutionary diagnostic solutions for over 35 years. Our experience and expertise allow us to create a leading product portfolio of high quality diagnostic tools which offer reliable and rapid diagnosis. We believe that by providing laboratories with the right tools, we can improve healthcare worldwide.

#### **REAGENTS**



Randox offers an extensive range of third-party diagnostic reagents which are internationally recognised as being of the highest quality; producing accurate and precise results. At Randox, we re-invest significantly in R&D to ensure we meet the ever-changing needs of the laboratory. Consequently, Randox offer a range of novel and superior performance assays, including: sdLDL-C, Lipoprotein (a), H-FABP, Adiponectin, Copper and Zinc. Applications are available detailing instrument-specific settings for the convenient use of Randox Reagents on numerous clinical chemistry analysers.

# INTERNAL QUALITY CONTROL



Acusera third party quality controls are made using the highest quality material of human origin, ensuring they react like a real patient sample. With more than 390 analytes available across the Acusera range we can uniquely reduce the number of controls required while reducing costs and time. Our product range includes clinical chemistry, immunoassay, urine, immunology and more. Qnostics molecular controls for infectious disease testing are designed to meet the demand of today's molecular diagnostics laboratory while effectively monitoring the entire testing process. Our whole pathogen molecular controls comprise hundreds of characterised viral, bacterial and fungal targets.

# **EXTERNAL QUALITY ASSESSMENT**



RIQAS is the world's largest international EQA scheme with more than 45,000 participants worldwide. 33 comprehensive, yet flexible programmes cover a wide range of clinical diagnostic testing including chemistry, immunoassay, cardiac, urine, serology and more. Our programmes benefit from a wide range of concentrations, frequent reporting, rapid feedback and user-friendly reports. QCMD, our range of EQA programmes for molecular infectious disease testing, features a whole pathogen matrix making them a true test of patient sample analysis. With access to over 90 programmes including blood borne viruses, respiratory diseases, multi-pathogen infections and more, there is something for every laboratory.

# **EVIDENCE SERIES**



In 2002, Randox invented the world's first, Biochip Array Technology, offering highly specific tests, coupled to the highly sensitive chemiluminescent detection, providing quantitative results instantly changing the landscape of diagnostic testing forever. The Randox Evidence Series of multi-analyte immunoanalyser's provide an unrivalled increase in patient information per sample offering diagnostic, prognostic and predictive solutions across a variety of disease areas with a highly advanced clinical and toxicology immunoassay test menu including cardiac, diabetes, drugs of abuse, metabolic, renal and stroke markers.









 $C \in$