



CE

RANDOX

RX daytona⁺

A fully automated clinical chemistry analyser with unrivalled performance



RX series

Precision. Reliability. Accuracy.

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 performance.

Reagent Carousel

- Reagents cooling 8-15 °C
- 50 cooled positions for 20ml & 70ml bottles
- Automatic barcode for reagent identification



Cuvettes

- 72 reaction cuvettes (semi-permanent)
- Cuvettes life-span: 3 – 6 Months
- Minimum reaction volume of 100µl
- Maximum reaction volume of 350µl



System Overview

The RX daytona+ provides high quality testing on a compact, easy to use clinical chemistry analyser for accurate results you can trust.

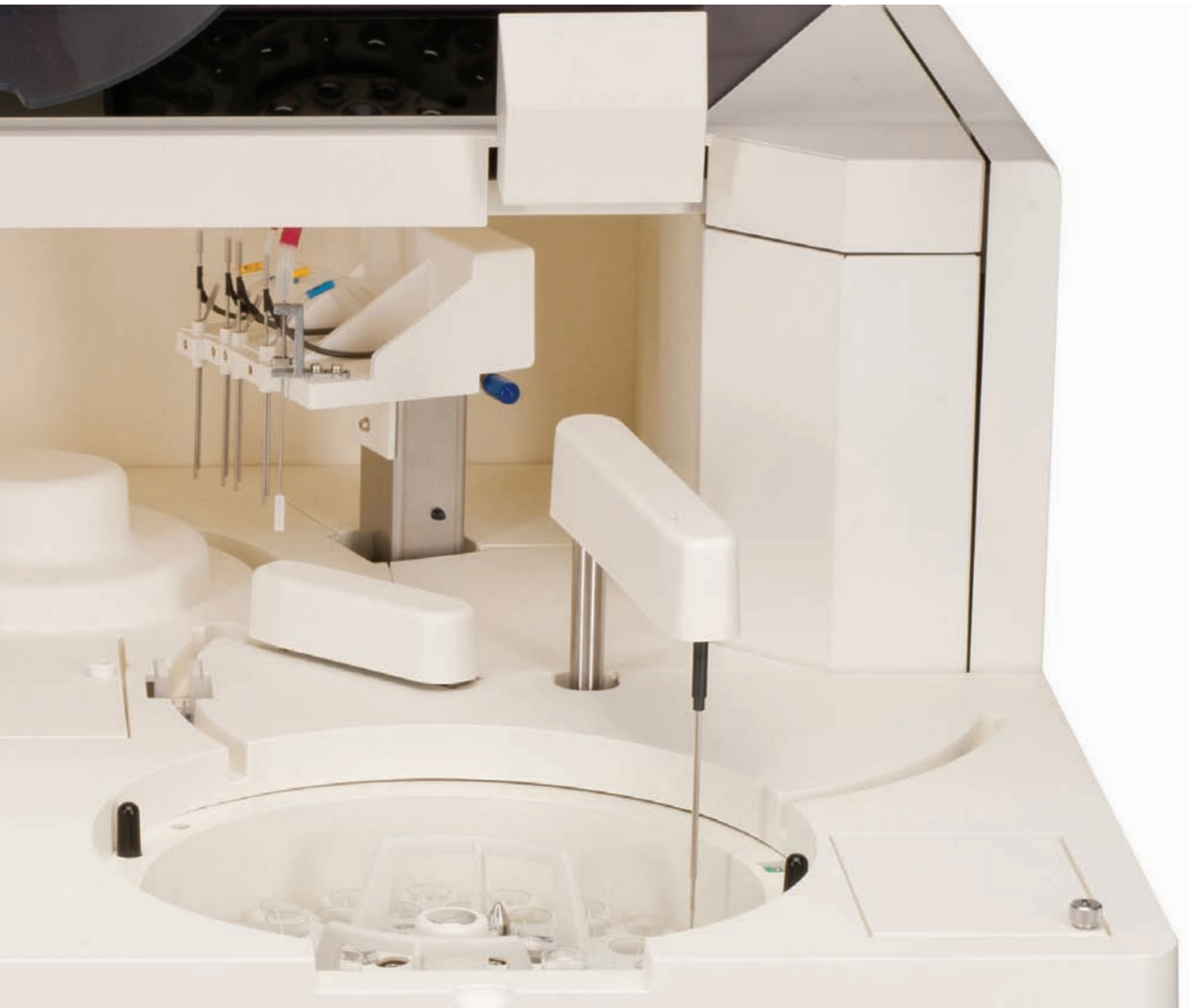
Wash Station

- 12 stage washing process
- Includes acid, alkali and pure water wash steps
- Stations 1-4 have liquid level sensors to prevent cuvette overflows



Sample Carousel

- Universal carousel with 40 cooled positions
- Sample interruption for addition of emergency samples
- Barcode sample identification
- Dead Volume 100µl in standard or primary tubes - 50µl in paediatric cups



RX series

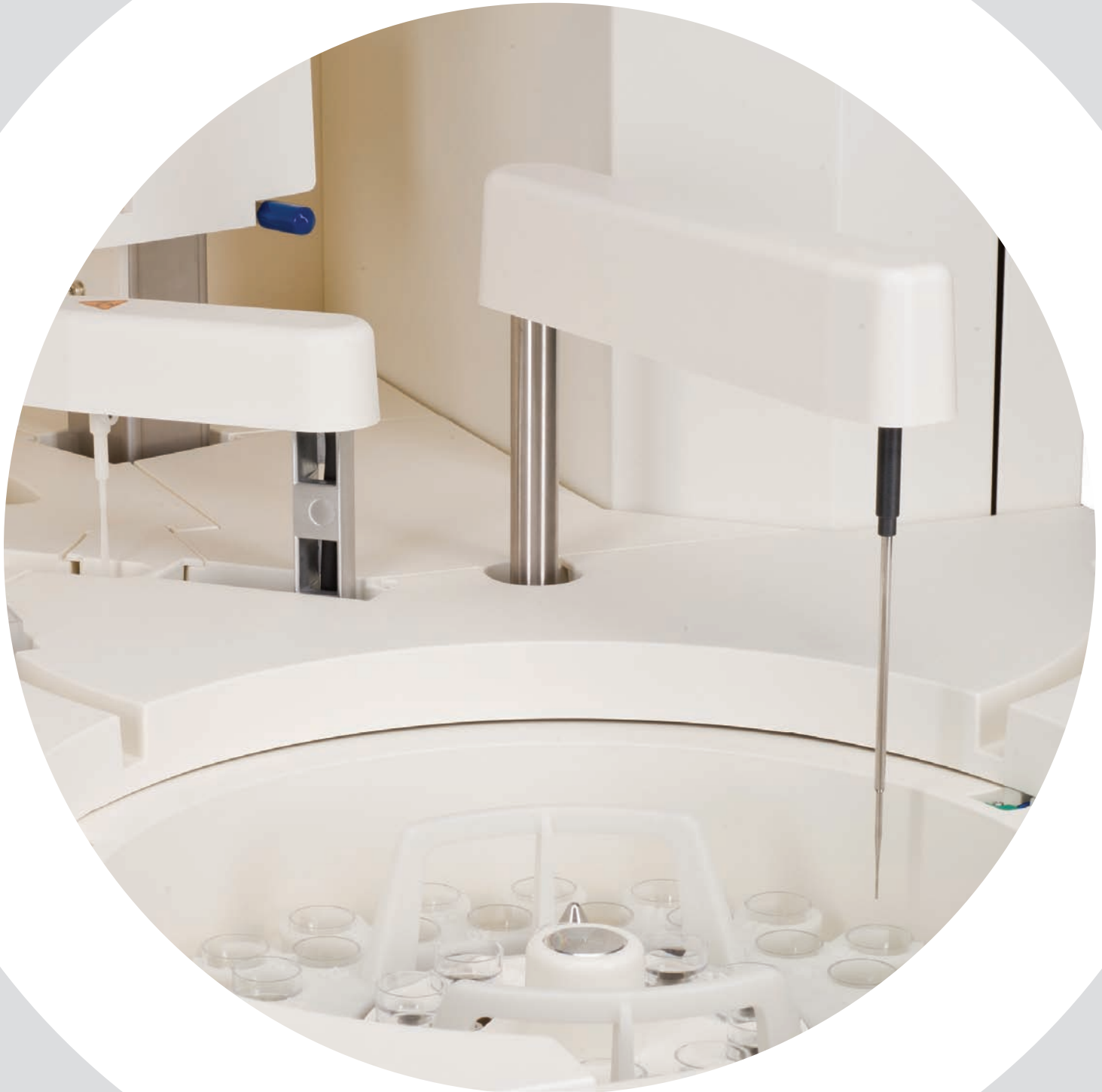
Precision. Reliability. Accuracy.



- Fully automated chemistry analyser
- 270 photometric tests per hour and up to 450 including ISE
- Reagent carousel with 50 cooled positions
- Universal sample carousel with 40 positions and 10 control/calibrator positions
- Low water consumption of just 5 litres per hour
- Intuitive icon based user friendly software (Windows®)
- Dual 5 speed stirrers optimised for each assay ensuring better performance
- Storage of up to 30,000 patient reports with search facility
- Liquid level, clot & crash detection
- Unique emergency loading port allows emergency samples to be analysed quickly and easily during run
- Low pipetting capabilities: reagent volume R1: 20 - 250µl (1µl increments) R2: 20 - 180µl (1µl increments) & sample volumes as low as 1.5µl (0.1µl increments)
- Barcode readers for both sample and reagent identification

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Benefits at a glance

Highly Accurate Testing

- Separate sample and reagent pipettes minimise carryover
- Dedicated micropipettes are equipped with liquid level sensors and crash detection
- Dual five speed stirrers optimise mixing for each assay
- Serum indices detect lipaemic, icteric and haemolytic samples, building confidence in results and reducing the need for expensive repeats

Ease of Use

- Easy to use Windows® based software
- Just one click opens the emergency sample ordering screen for rapid STAT testing
- Barcode readers for both sample and reagent identification
- Symbol based software for ease of use

Superior Performance

- Sensitive clot detection sensor detects clots such as fibrin at the sample pipette
- 72 cuvettes onboard with cuvette check function ensuring only clean and viable reaction vessels are reused
- Built in inventory management system automatically calculates remaining reagent volume and the number of tests available

Optimum Laboratory Efficiency

- Low minimum reaction volume of 100µl improves cost-effectiveness and reduces waste
- Automatic test re-run function saves time and reduces risk of human error
- Automatic sample dilution
- Automatic wake up and sleep functionality

Time and Cost Savings

- Minimal maintenance required
- Extensive menu allows consolidation of testing
- Economic platform with low water consumption of only 5 litres per hour

Unrivalled QC Capabilities

- Generation of Levey-Jennings charts, calibration curves and QC statistics for reliable results
- View QC history

Flexibility

- 12 wavelengths generated via diffraction grating: 340, 380, 415, 450, 510, 546, 570, 600, 660, 700, 750 and 800nm
- Capable of running monochromatic, bi-chromatic, endpoint, kinetic, ISE, and reagent blanking assays
- 7 different calibration options available including: Factor; Linear; Point to point, Log-logit, Exponential, Spline and Spline 2

Extensive Dedicated Test Menu

- Largest range of tests available from a sole supplier, including routine and unique assays optimised for superior performance.
- Ability to run specific proteins removes the need for a separate nephelometry system

Test Menu

CLINICAL

AUTOIMMUNE:

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

BASIC METABOLIC PROFILE:

Calcium
CO₂ 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
CRP Full Range (0.3-160mg/l)
CRP High Sensitivity
Digoxin
Direct HDL Cholesterol
Direct LDL Cholesterol
H-FABP
Homocysteine
Lipoprotein (a)
Myoglobin
sLDL
Triglycerides
TxB Cardio

COMPREHENSIVE METABOLIC PROFILE:

Albumin
Alkaline Phosphatase
ALT
AST (GOT)
Direct Bilirubin
Calcium

Chloride
CO₂ Total
Creatinine Enzymatic
Creatinine (Jaffe)
Glucose
Lactate
Potassium
Sodium
Total Bilirubin
Total Protein
Urea

DIABETES:

Adiponectin
Cholesterol
Creatinine Enzymatic
Creatinine (Jaffe)
Cystatin C
Direct HDL Cholesterol
Direct LDL Cholesterol
Fructosamine
Glucose
Glycerol
HbA1c/Hb
Microalbumin
NEFA (Non-Esterified Fatty Acids)
Ranbut (Hydroxybutyrate)
Total Protein
Triglycerides
Urinary Protein

ELECTROLYTES:

Calcium
Chloride (Nondirect)
CO₂ Total
Lithium
Magnesium
Potassium (Nondirect)
Sodium (Nondirect)

HAEMOLYTIC ANAEMIA:

G6P-DH
Haptoglobin
LDH

HEPATIC FUNCTION:

Albumin
Aldolase
Alkaline Phosphatase
Alpha-I Antitrypsin
ALT
Ammonia
AST (GOT)
Bile Acids

Cholinesterase
Complement Component 3
Complement Component 4
Direct Bilirubin
Gamma GT
GLDH
Glycerol
Haptoglobin
IgA
IgG
IgM
Iron (UIBC)
LAP
LDH

Total Bilirubin
Total Protein
Transferrin
Transthyretin (Prealbumin)

INFLAMMATION AND INFECTION:

Alpha-I Acid Glycoprotein
ASO
CRP
Lactate
Rheumatoid Factor

LIPIDS:

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

NEONATAL SCREENING:

Alpha-I Antitrypsin
CRP
CRP Full Range (0.3-160mg/l)
CRP High Sensitivity
IgE
Transthyretin (Prealbumin)

NEUROLOGICAL DISORDERS (CSF):

IgA
IgG
IgM

NUTRITIONAL STATUS:

Albumin
Copper
Ferritin
Iron
Iron (UIBC)
Lipase
Magnesium
Potassium
TIBC
Transferrin
Transthyretin (Prealbumin)
Zinc

PANCREATIC FUNCTION:

Amylase
Glucose
LDH
Lipase
Pancreatic Amylase

RENAL FUNCTION:

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

VETERINARY

Albumin	CK-NAC	Lactate	Sodium
Alkaline phosphatase	CO ₂ Total	Lactate dehydrogenase	Total Protein
ALT (GPT)	Copper	LDL	Triglycerides
Aldolase	Creatinine	Lipase	Urea
Ammonia	Canine CRP	Magnesium	Uric Acid
Amylase	CRP	NEFA (Non-esterified fatty acids)	Urinary protein
AST (GOT)	Fructosamine	Phosphorus (Inorganic)	Zinc
Bile acids	Gamma-GT	Potassium	
Bilirubin	GLDH	Ranbut (Hydroxybutyrate)	
Calcium	Glucose	Ransel (Glutathione peroxidase)	
Chloride	Glycerol	Ransod (Superoxide dismutase)	
Cholesterol	HDL		
Cholinesterase (Butyryl)	Iron (UIBC)		

TOXICOLOGY

THERAPEUTIC DRUGS:

Acetaminophen	Phenobarbitol
Carbamazepine	Phenytoin
Digoxin	Salicylate
Gentamicin	Theophylline
Lithium	Valproic Acid

DRUGS OF ABUSE:

Amphetamines	Ecstasy
Barbiturates	EDDP
Benzodiazepines	Ethanol
Cannabinoids	Methadone
Cocaine metabolite	Opiates

PROTEIN

SPECIFIC PROTEINS:

Alpha-1 Antitrypsin	ASO	Cystatin C	IgM
Alpha-1 Acid Glycoprotein	Beta-2 Microglobulin	Ferritin	Lipoprotein (a)
Apolipoprotein A-I	Ceruloplasmin	Fructosamine	Microalbumin
Apolipoprotein AII	Complement Component 3	Haptoglobin	Myoglobin
Apolipoprotein B	Complement Component 4	HbA1c/Hb	Rheumatoid Factor
Apolipoprotein CII	CRP	IgA	Transthyretin (Prealbumin)
Apolipoprotein CIII	CRP Full Range (0.3-160mg/l)	IgE	Transferrin
Apolipoprotein E	CRP High Sensitivity	IgG	

RESEARCH

ANTIOXIDANTS:

Albumin
Bilirubin
Ferritin
Glutathione Reductase
Ransel (Glutathione Peroxidase)
Ransod (Superoxide Dismutase)
TIBC
Total Antioxidant Status
Transferrin
Uric Acid

FOOD AND WINE TESTING:

Acetic acid
Ammonia
Copper
Ethanol
Glucose/fructose
Lactic acid
Malic acid
NOPA
Potassium
TAS
Total SO ₂

BIOTECHNOLOGY:

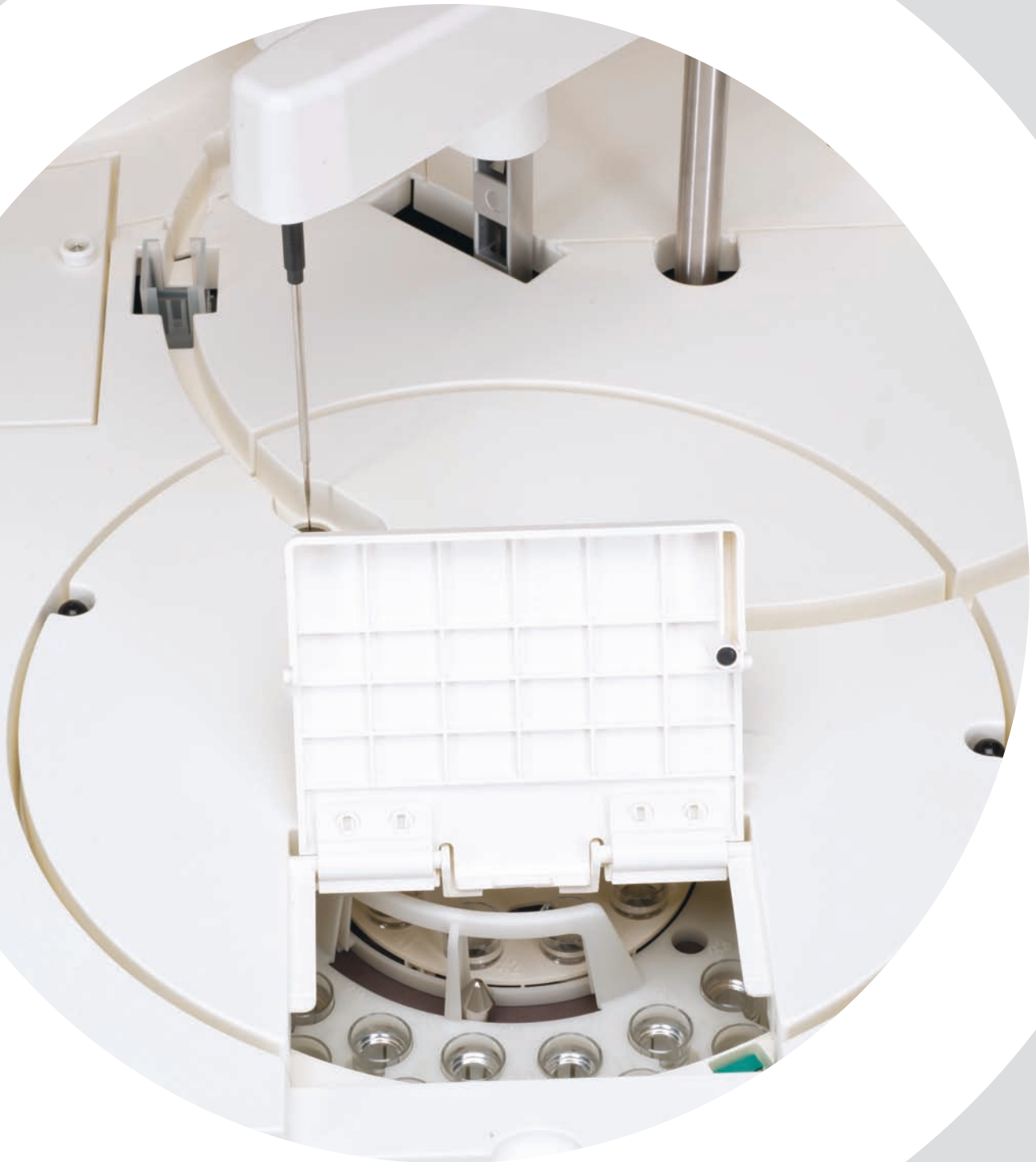
Glutamate
Glutamine

SPECIALITY:

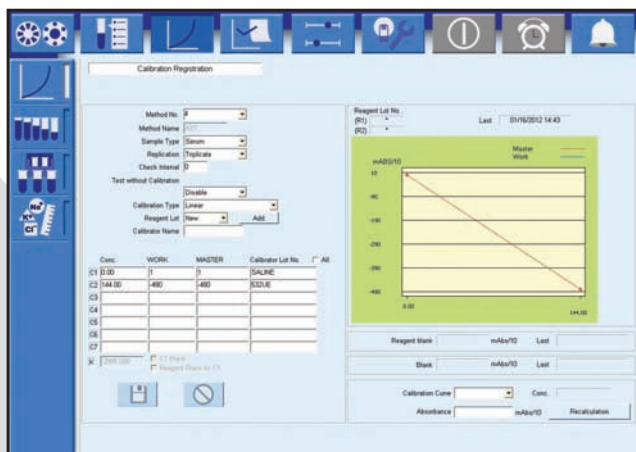
Acid phosphatase

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The symbol based intuitive software allows easy access to information and control of operations from the main screen with informative tabs



Calibration Screen

Calibration Screen

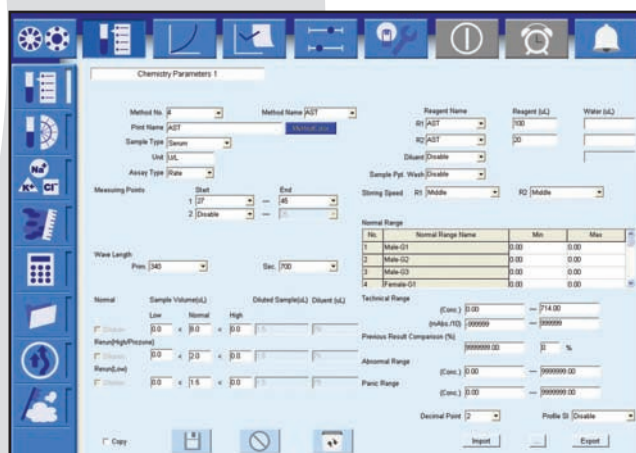
- Sets calibrator serial dilution and displays multipoint calibration curves

Quality Control

- Generation of Levey-Jennings charts, calibration curves

Run Monitor

- Displays full patient demographics
- View status in real time including time to completion
- Indicates number of tests remaining



Parameter Screen

Chemistry Parameters

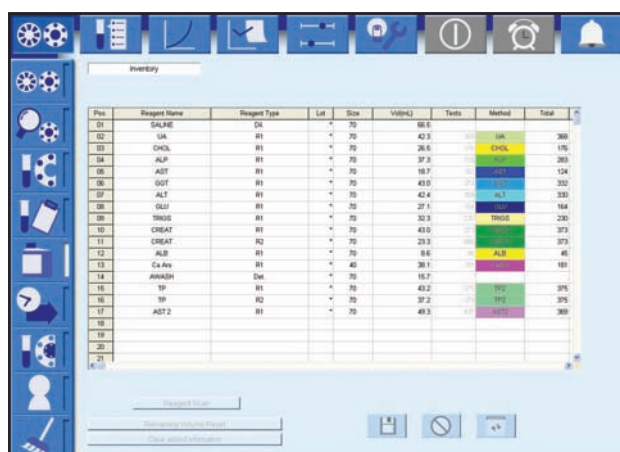
- Enables sample dilution and test re-runs
Set up to 20 test profiles and define order of analysis

Connectivity

- Software capable of connecting to LIMS system via ASTM standard

Easy to Follow Reports

- View real time results status, including time to completion



Inventory Screen

Inventory

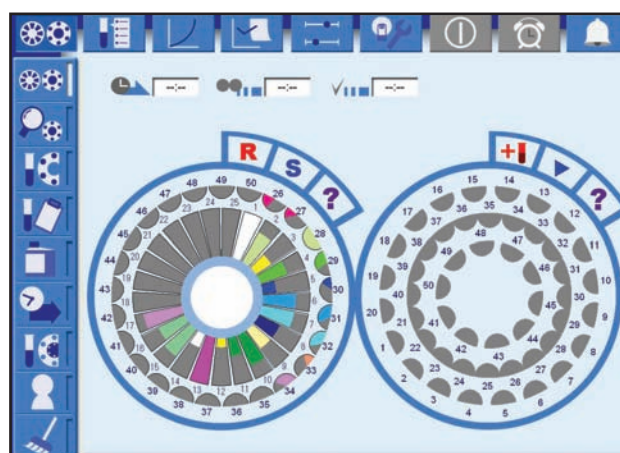
- Automatically calculates remaining reagent volume and the number of tests available and stability

Maintenance

- 5 minutes minimal daily maintenance required

Results

- Download and print results
- Send to host automatically



Run Monitor Screen

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	625mm
Depth	670mm
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 tests	Monochromatic, bi-chromatic, endpoint, kinetic, sample and reagent blanking and ISE
Maintenance	Daily maintenance-less than 5 minutes. No rear access required. Simple twice yearly preventative 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 volume	R1: 20 to 250µl (1 µl increments) R2: 20 to 180µl (1 µl increments)
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, expired
Sample addition	Sampling interruption for addition of samples
Sample capacity	Removable turntable with 40 positions for samples, calibrators and controls
Sample dead volume	100µl in standard or primary tubes. 50µl 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 & supernatants
Sample volume	1.5 to 35µl (0.1 µl 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 5 litres 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

Power requirement	AC100V to 120V, 6.5A (Max.) AC200 to 230V, 3.3A (Max.) 50/60Hz
Power consumption	650VA
Permissible voltage variation	± 10% (Max.)
LIMS connectivity	Bi-directional ASTM Standard (RS232 connection)

OPERATING SYSTEM

Operator interface	Windows® based software
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ORDERING INFORMATION

RX daytona plus analyser without ISE	RX4041
RX daytona plus analyser with ISE	RX4040

Acetaminophen	Cocaine metabolite	Lactate
Acetic Acid	Complement Component 3	LAP
Acid phosphatase	Complement Component 4	LDH
Adiponectin	Copper	LDL Cholesterol (Direct)
Albumin	Creatinine (Jaffe)	Lipase
Aldolase	Creatinine Enzymatic	Lipoprotein (a)
Alkaline Phosphatase	CRP	Lithium
Alpha-1 Acid Glycoprotein	CRP Full Range (0.3-160mg/l)	L-Lactic Acid
Alpha-1 Antitrypsin	CRP High Sensitivity	Magnesium
ALT	Cystatin C	Malic Acid
ALT (GPT)	Digoxin	Methadone
Ammonia	Ecstasy	Microalbumin
Amphetamines	EDDP	Myoglobin
Amylase	Ethanol	NEFA (Non-Esterified Fatty Acids)
Apolipoprotein A-1	Ferritin	Opiates
Apolipoprotein AII	Fructosamine	Pancreatic Amylase
Apolipoprotein B	G-6-PDH	Phenobarbital
Apolipoprotein CII	Gamma GT	Phenytoin
Apolipoprotein CIII	Gentamicin	Phosphorus
Apolipoprotein E	GLDH	Potassium (Non-Direct)
ASO	Glucose	Rheumatoid Factor
AST (GOT)	Glucose/Fructose	Salicylate
Barbiturates	Glutamate	sLDL
Benzodiazepines	Glutamine	Sodium (Non-Direct)
Beta-2 Microglobulin	Glutathione Peroxidase (Ransel)	Superoxide Dismutase (Ransod)
Bile Acids	Glutathione Reductase	Theophylline
Bilirubin (Direct & Total)	Glycerol	TIBC
Calcium	Haptoglobin	Total Antioxidant Status
Canine CRP	HbA1c/Hb	Total Protein
Cannabinoids	HDL Cholesterol (Direct)	Transferrin
Carbamazepine	Heart-Type Fatty Acid Binding Protein (H-FABP)	Transthyretin (Prealbumin)
Ceruloplasmin	Homocysteine	Triglycerides
Chloride (Non-Direct)	Hydroxybutyrate (Ranbut)	TxB Cardio
Cholesterol	IgA	Urea
Cholinesterase	IgE	Uric Acid
Cholinesterase (Butyryl)	IgG	Urinary Protein
CK-MB	IgM	Valproic Acid
CK-NAC	Iron	Zinc
CO ₂ Total		

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 400 photometric tests per hour or 560 tests per hour including ISEs.



Australia

Randox (Australia) Pty Ltd.
Tel: +61 (0) 2 9615 4640



Brazil

Randox Brasil Ltda.
Tel: +55 11 5181-2024



China

Randox Laboratories Ltd.
Tel: +86 021 6288 6240



Czech Republic

Randox Laboratories S.R.O.
Tel: +420 2 1115 1661



France

Laboratoires Randox
Tel: +33 (0) 130 18 96 80



Germany

Randox Laboratories GmbH
Tel: +49 (0) 2151/93 706-11



Hong Kong

Randox Laboratories Hong Kong Limited
Tel: +852 3595 0515



Italy

Randox Laboratories Ltd.
Tel: +39 06 9896 8954



India

Randox Laboratories India Pvt Ltd.
Tel: +91 80 2802 5000



Poland

Randox Laboratories Polska Sp. z o.o.
Tel: +48 22 862 1080



Portugal

Irlandox Laboratorios Quimica Analitica Ltda
Tel: +351 22 589 8320



Puerto Rico

Clinical Diagnostics of Puerto Rico, LLC
Tel: +1 787 701 7000



Republic of Ireland

Laboratorios Randox S.L.
Tel: +353 7495 22600



Slovakia

Randox S.R.O.
Tel: +421 2 6381 3324



South Africa

Randox Laboratories SA (Pty) Ltd.
Tel: +27 (0) 11 312 3590



South Korea

Randox Korea
Tel: +82 (0) 31 478 3121



Spain

Laboratorios Randox S.L.
Tel: +34 93 475 09 64



Switzerland

Randox Laboratories Ltd. (Switzerland)
Tel: +41 41 810 48 89



USA

Randox Laboratories-US, Ltd.
Tel: +1 304 728 2890



Vietnam

Randox Laboratories Ltd.Vietnam
Tel: +84-8-39 11 09 04

