

BA 400

BioSystems

Efficiency and Autonomy

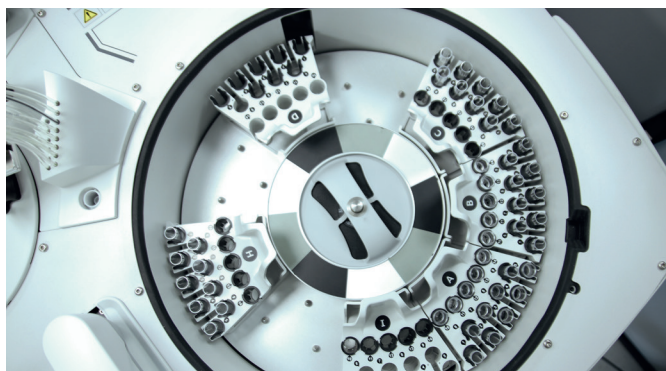
Clinical Chemistry Analyser

Clinical analysis

human - centred biotech



Technological innovation



Minimum working time

The new segmented samples rotor improves the analyser workflow, streamlining the samples loading. New enhanced manoeuvres reduce samples loading time and minimise the attention required by the user.



Reliable validated system

Dedicated and validated reagents ensure a robust and reliable analytical system. The reagent barcoding and volume detection system allow to manage the amount of reagent in the system at any time.



Make your work easier

Automation saves time and avoids manual procedures. The new automatic haemolysis function guarantees more accurate results.



Highest performance, minimal maintenance

BA400 improves your laboratory resources and minimise the required system maintenance. The optics, based on our LED technology, will lead users to have full confidence in the reported results.

Systemic solutions

In combination with the original dedicated BA reagents (complete panel of clinical chemistry including special test), the BA400 forms a complete system that perfectly adapts to the demands of the laboratories in its segment.

The BA System and our worldwide customer care team offer together a complete solution, integrating reagents and analyzers jointly designed and validated under the same european brand.

Our main focus is to satisfy our users requirements and strive to exceed their technical, economical and human expectations. We are committed to provide the best possible user experience.



Scientific
and Technical
Support



Remote
Assistance



Personalised
Support



Technical Specifications

Highlights

- Throughput of 400 t/h (Clinical Chemistry and Turbidimetry).
- Maximum throughput of 560 t/h with ISE Module: Na⁺, K⁺, Cl⁻, Li⁺ (optional).
- Segmented samples rotor for faster samples loading.
- Automatic haemolysis on whole blood samples.
- 88 cooled reagents on board (6 - 11 °C) for 20 and 60 mL dedicated reagent bottles with barcode.
- Reaction rotor washing station and continuous evaluation of cuvettes status.
- Dynamic baseline with SMART LED technology.
- Photometric range up to 3.5 Abs and optical resolution of 0.0001 Abs.
- Full-capacity to integrate into LIS (ASTM, HL7).
- Minimum user maintenance.

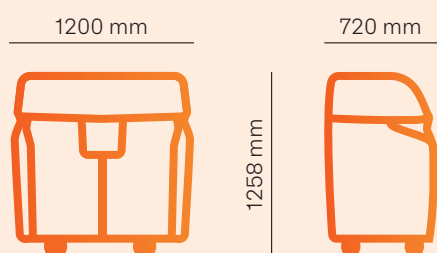
Ordering Information

Item	Code	Quantity
BA400 analyser*/ BA400 analyser with ISE module	83400/83400ISE	-
Segmented samples rotor for faster samples loading. (pediatric adapters included)	AC17457	3 units
Reaction rotors	AC11485	10 units
Concentrated washing solution	AC16434	500 mL
Acid washing solution (WS1)	AC17201	4 x 20 mL
Alkaline washing solution (WS2)	AC17205	4 x 15 mL
High alkaline washing solution (WS3)**	AC17800	2 x 60 mL
Sample wells (pediatric cups)	AC10770	1000 units
Reagent bottles 60 mL + caps	AC16362	10 units
Reagent bottles 20 mL + caps	AC16363	10 units
Ambar reagent bottles 60 mL + caps	AC16364	10 units
Ambar reagent bottles 20 mL + caps	AC16365	10 units

If you want information about the ISE module consumables, contact us at customersupport@biosystems.es.

* FDA approved.

** Check the need of use.



Throughputs

Throughput without ISE module	400 t/h
Throughput of ISE module	320 t/h
Maximum (photometric + ISE)	560 t/h

ISE Module (optional)

Sample type	Serum, plasma or urine
Electrode type	Na ⁺ , K ⁺ , Cl ⁻ , Li ⁺ (optional)
Sample volume	Serum: 100 µL / Urine: 200 µL

Sample handling

Sample rotor capacity	Up to 18 segments available (14 positions/segment)
Barcode reader	Yes
Number of samples with barcode	9/segment
Size of primary tubes	Diameter 12 mm to 16 mm (max. height 100 mm)
Sample well	Diameter 13.5 mm
Sample types	Serum, plasma, urine, whole blood, cerebrospinal liquid, semen and biological fluid
Dispensing mode	Ceramic pump without maintenance
Pipetting volume	From 2 µL to 40 µL
Pipetting resolution	0.1 µL
Predilution ratio	From 1:2 to 1:200
Clot detector	Yes
Tip wash	Inside and outside

Reagent handling

Volume of reagent bottles	20 mL, 60 mL
Reagent rotor capacity	88 (44 bottles of 20 mL or 60 mL + 44 bottles of 20 mL)
Cooled reagent	Yes
Temperature range of refrigerator	From 6 to 11 °C (measured at 21 °C)
Barcode reader	Yes
Reagent volume R1	120 µL to 450 µL
Reagent volume R2	10 µL to 300 µL
Dispensing mode	Ceramic pump without maintenance
Pipetting resolution	1 µL
Tip wash	Inside and outside

Reactions rotor

Reaction volume range	From 180 µL to 600 µL
Number of wells	120
Well material	UV methacrylate
Type of incubation	Dry without maintenance
Temperature	37.0 °C
Temperature accuracy	± 0.2 °C
Number of mixers	2
Cuvette washing system	7 tips (2 for washing, 3 for rinsing and 2 for drying)

Optical System

Light Source	LED
Wavelengths	340 - 405 - 505 - 535 - 560 - 600 - 635 - 670 nm
Photometric range	-0.2 to 3.5 A
Internal resolution	0.0001 A
Measurement accuracy	CV <1% at 0.1 A
(for 340 nm, 405 nm and 505 nm)	CV <0.1% at 2 A

Size and weight

Size (w., d., h.)	1200x720x1258 mm
Weight	210 Kg

Electrical and Environmental Requirements

Mains voltage	115 to 230 V
Mains frequency	50 or 60 Hz
Electric power	500 VA
Ambient temperature	From 10 to 35 °C From 10 to 30 °C (With ISE module)
Relative humidity	<85% without condensation
Altitude	<2500 m

Fluidic Requirements

Water inlet	External tank or mains water supply
Water type	Purified water type II
Water consumption	<14 L/h
Bottle of high concentration waste	5 L
Bottle of washing solution	5 L

Minimum Computer Requirements

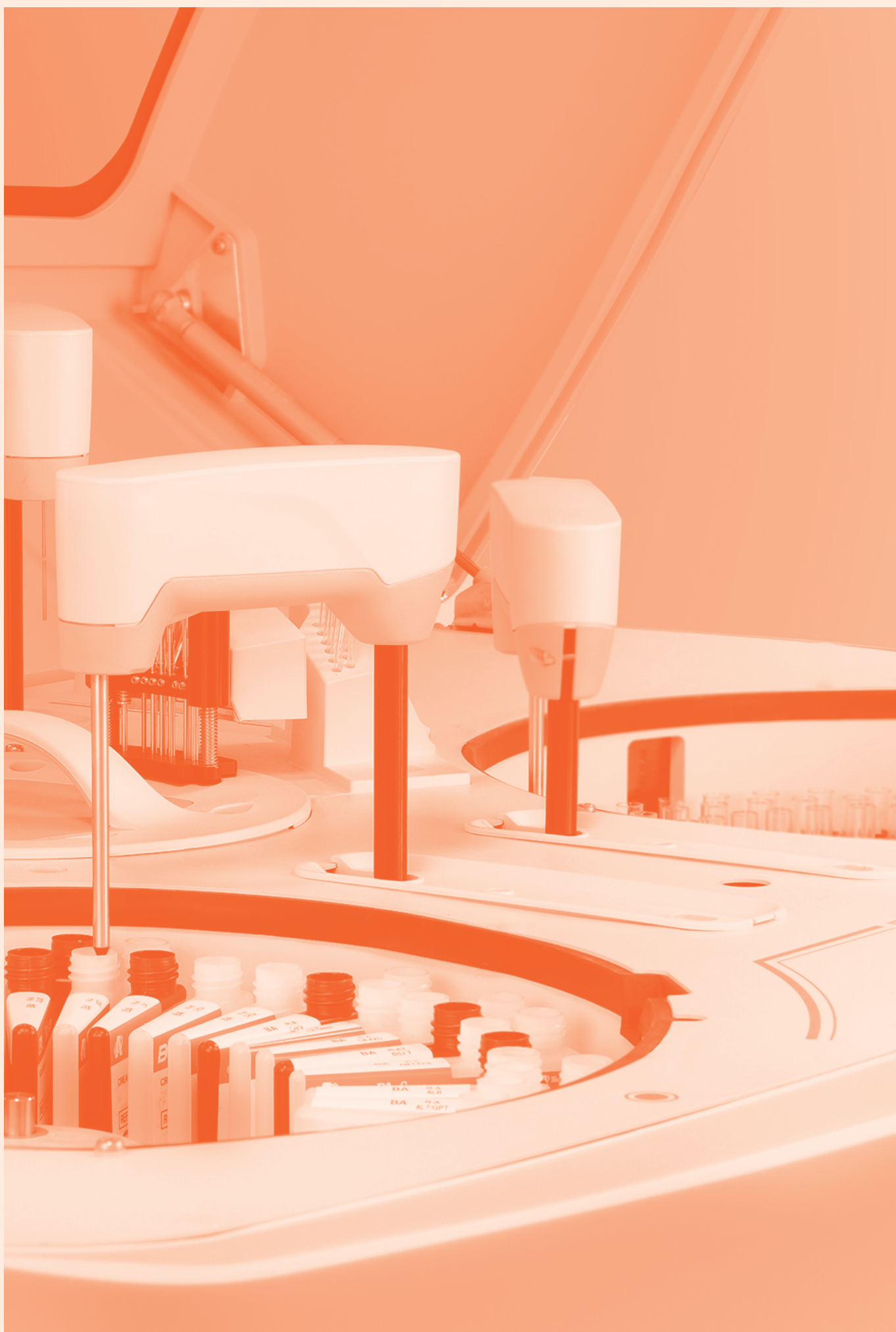
Operating system	Windows® 10 64 bit (x64)
CPU	Equivalent to Intel Core i3 @3.10 GHz or higher
RAM	4 GB
Hard Disk	40 GB or higher
Monitor minimum resolution	1024x768
Connector of serial channel	USB

Laboratory Information Systems (LIS)

Connectivity to LIS	HL7 and ASTM protocols
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Directives and Standards Compliance

EC Directive-IVD	98/79/CE
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BA400

Reagents

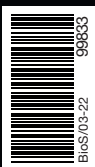
Test	Code	RA	RB	mL/Kit	Comments
α-AMYLASE DIRECT					
<i>Direct substrate</i>	21550	8 x 20 mL	-	160	
	23550	4 x 20 mL	-	80	
α-AMYLASE PANCREATIC					
<i>IFCC</i>	21799	2 x 60 mL	2 x 15 mL	150	
α-AMYLASE-EPS					
<i>IFCC</i>	21534	2 x 60 mL	2 x 15 mL	150	
α-GLUCOSIDASE NEW					
<i>Glucose oxidase/Peroxidase</i>	21522	2 x 20 mL	2 x 5 mL	50	Std Inc
α1-ACID GLYCOPROTEIN					
<i>Immunoturbidimetric assay</i>	23107	1 x 60 mL	1 x 15 mL	75	
ADENOSINE DEAMINASE (ADA)					
<i>Adenosine-glutamate dehydrogenase</i>	23754	2 x 16 mL	1 x 10 mL	40	WR
ALANINE AMINOTRANSFERASE (ALT/GPT)					
<i>IFCC</i>	21533	8 x 60 mL	8 x 15 mL	600	
	23533	4 x 60 mL	4 x 15 mL	300	
ALBUMIN					
<i>Bromocresol green</i>	21547	10 x 60 mL	-	600	
	23547	4 x 60 mL	-	240	
ALBUMIN (MICROALBUMINURIA)					
<i>Immunoturbidimetric latex assay</i>	22324	4 x 60 mL	4 x 15 mL	300	
	23324	1 x 60 mL	1 x 15 mL	75	
ALKALINE PHOSPHATASE (ALP)-AMP					
<i>AMP buffer (IFCC)</i>	21592	4 x 60 mL	4 x 15 mL	300	
	23592	1 x 60 mL	1 x 15 mL	75	
ALKALINE PHOSPHATASE (ALP)-DEA					
<i>DEA buffer</i>	21590	4 x 60 mL	4 x 15 mL	300	
	23590	1 x 60 mL	1 x 15 mL	75	
AMMONIA					
<i>Glutamate dehydrogenase</i>	23532	1 x 20 mL	1 x 7 mL	27	RA
ANGIOTENSIN CONVERTING ENZYME (ACE)					
<i>FAPGG</i>	21796	2 x 60 mL	-	120	
ANTI-STREPTOLYSIN O (ASO)					
<i>Immunoturbidimetric latex assay</i>	22923	2 x 60 mL	2 x 15 mL	150	
	23923	1 x 60 mL	1 x 15 mL	75	

Test	Code	RA	RB	mL/Kit	Comments
APOLIPOPROTEIN A-1 (APO A-1) <i>Immunoturbidimetric assay</i>	23095	1 x 60 mL	1 x 15 mL	75	
APOLIPOPROTEIN B (APO B) <i>Immunoturbidimetric assay</i>	23098	1 x 60 mL	1 x 15 mL	75	
ASPARTATE AMINOTRANSFERASE (AST/GOT) <i>IFCC</i>	21531 23531	8 x 60 mL 4 x 60 mL	8 x 15 mL 4 x 15 mL	600 300	
β-HYDROXYBUTYRATE <i>Hydroxybutyrate dehydrogenase/Diaphorase</i>	21525	1 x 60 mL	1 x 15 mL	75	
β2-MICROGLOBULIN <i>Immunoturbidimetric latex assay</i>	22925 23925	2 x 60 mL 1 x 60 mL	2 x 15 mL 1 x 15 mL	150 75	
BILIRUBIN (DIRECT) DPD <i>Dichlorophenyl diazonium</i>	21504 23504	4 x 60 mL 1 x 60 mL	4 x 15 mL 1 x 15 mL	300 75	
BILIRUBIN (TOTAL) DPD <i>Dichlorophenyl diazonium</i>	21506 23506	8 x 60 mL 4 x 60 mL	8 x 15 mL 4 x 15 mL	600 300	
CALCIUM-ARSENAZO <i>Arsenazo III</i>	21570 23570	10 x 60 mL 4 x 60 mL	- -	600 240	
CALCIUM-CRESOLPHTHALEIN <i>O-Cresolphthalein complexone</i>	21511 23511	8 x 60 mL 2 x 60 mL	8 x 15 mL 2 x 15 mL	600 150	
CARBON DIOXIDE (CO₂) <i>Phosphoenolpyruvate carboxylase / Malate dehydrogenase</i>	21558	2 x 60 mL	-	120	
CHOLESTEROL <i>Cholesterol oxidase / Peroxidase</i>	21505 23505	10 x 60 mL 4 x 60 mL	- -	600 240	
CHOLESTEROL HDL DIRECT <i>Detergent</i>	21557 23557	2 x 60 mL 1 x 60 mL	2 x 20 mL 1 x 20 mL	160 80	
CHOLESTEROL LDL DIRECT <i>Detergent</i>	21585 23585	2 x 60 mL 1 x 60 mL	2 x 20 mL 1 x 20 mL	160 80	
CHOLINESTERASE (CHE) <i>Butyrylthiocholine</i>	21588	2 x 60 mL	2 x 15 mL	150	
CITRATE <i>Citrate lyase/ Malate dehydrogenase</i>	23795	2 x 20 mL	2 x 5 mL	50	RB + Std Inc
COMPLEMENT COMPONENT C3 <i>Immunoturbidimetric assay</i>	23103	1 x 60 mL	1 x 15 mL	75	

Test	Code	RA	RB	mL/Kit	Comments
COMPLEMENT COMPONENT C4					
<i>Immunoturbidimetric assay</i>	23104	1 x 60 mL	1 x 15 mL	75	
C-REACTIVE PROTEIN (CRP)					
<i>Immunoturbidimetric latex assay</i>	22921	4 x 60 mL	4 x 15 mL	300	
	23921	1 x 60 mL	1 x 15 mL	75	
C-REACTIVE PROTEIN-er (CRP-er)					
<i>Immunoturbidimetric latex assay, extended range</i>	22942	2 x 60 mL	2 x 15 mL	150	
	23942	1 x 60 mL	1 x 15 mL	75	
C-REACTIVE PROTEIN hs (CRP-hs)					
<i>Immunoturbidimetric latex assay, high sensitivity</i>	22927	2 x 60 mL	2 x 15 mL	150	
	23927	1 x 60 mL	1 x 15 mL	75	
CREATINE KINASE (CK)					
<i>IFCC</i>	21790	2 x 60 mL	2 x 15 mL	150	
	23790	1 x 60 mL	1 x 15 mL	75	
CREATINE KINASE-MB (CK-MB)					
<i>Immunoinhibition</i>	21792	2 x 60 mL	2 x 15 mL	150	
	23792	1 x 60 mL	1 x 15 mL	75	
CREATININE					
<i>Jaffé-compensated</i>	21502	5 x 60 mL	5 x 60 mL	600	
	23502	5 x 20 mL	5 x 20 mL	200	
CREATININE ENZYMATIC					
<i>Enzymatic</i>	21734	2 x 60 mL	2 x 20 mL	160	
D-DIMER (DD) NEW					
<i>Immunoturbidimetric latex assay</i>	21519	1 x 20 mL	1 x 10 mL	30	
ETHANOL					
<i>Alcohol dehydrogenase</i>	21789	2 x 20 mL	2 x 7 mL	54	
FERRITIN					
<i>Immunoturbidimetric latex assay</i>	22934	2 x 40 mL	2 x 20 mL	120	
	23934	1 x 40 mL	1 x 20 mL	60	
FIBRINOGEN					
<i>Immunoturbidimetric assay</i>	23804	1 x 60 mL	1 x 15 mL	75	
FRUCTOSE					
<i>Hexokinase/ Phosphoglucose isomerase</i>	23794	1 x 60 mL	1 x 15 mL	75	Std Inc
γ-GLUTAMYL TRANSFERASE (γ-GT)					
<i>IFCC</i>	21520	4 x 60 mL	4 x 15 mL	300	
	23520	2 x 60 mL	2 x 15 mL	150	
GLUCOSE					
<i>Glucose oxidase/ Peroxidase</i>	21503	10 x 60 mL	-	600	
	23503	4 x 60 mL	-	240	
GLUCOSE-6-PHOSPHATE DEHYDROGENASE NEW					
<i>Glucose-6-phosphate</i>	21603	1 x 60 mL	1 x 15 mL	75	Std Inc

Test	Code	RA	RB	mL/Kit	Comments
GLUCOSE-HEXOKINASE					
<i>Hexokinase</i>	21656	4 x 60 mL	4 x 15 mL	300	
	23656	1 x 60 mL	1 x 15 mL	75	
HAPTOGLOBIN NEW					
<i>Immunoturbidimetric assay</i>	23218	1 x 40 mL	1 x 10 mL	50	
HEMOGLOBIN A1C-DIRECT (HbA1C-DIR)					
<i>Immunoturbidimetric latex assay</i>	22047	2 x 60 mL	2 x 12 mL	144	
	22147	1 x 60 mL	1 x 12 mL	72	
HOMOCYSTEINE					
<i>Enzymatic cycling</i>	23737	1 x 20 mL	1 x 5.4 mL	25.4	
IMMUNOGLOBULIN A (IgA)					
<i>Immunoturbidimetric assay</i>	23101	1 x 60 mL	1 x 15 mL	75	
IMMUNOGLOBULIN G (IgG)					
<i>Immunoturbidimetric assay</i>	23100	1 x 60 mL	1 x 15 mL	75	
IMMUNOGLOBULIN M (IgM)					
<i>Immunoturbidimetric assay</i>	23102	1 x 60 mL	1 x 15 mL	75	
IRON-FERROZINE					
<i>Ferrozine</i>	21509	4 x 60 mL	4 x 15 mL	300	
	23509	2 x 60 mL	2 x 15 mL	150	
LACTATE					
<i>Lactate oxidase/ Peroxidase</i>	21736	4 x 60 mL	4 x 15 mL	300	
	23736	1 x 60 mL	1 x 15 mL	75	
LACTATE DEHYDROGENASE (LDH)					
<i>Pyruvate</i>	21580	8 x 60 mL	8 x 15 mL	600	
	23580	4 x 60 mL	4 x 15 mL	300	
LACTATE DEHYDROGENASE (LDH)-IFCC					
<i>IFCC</i>	21586	8 x 60 mL	8 x 15 mL	600	
	23586	2 x 60 mL	2 x 15 mL	150	
LIPASE					
<i>Color</i>	23793	1 x 50 mL	1 x 10 mL	60	
LIPASE NEW					
<i>DGGR</i>	21760	1 x 20 mL	1 x 10 mL	30	
MAGNESIUM					
<i>Xylidyl blue</i>	21797	2 x 60 mL	2 x 15 mL	150	
	23797	1 x 60 mL	1 x 15 mL	75	

Test	Code	RA	RB	mL/Kit	Comments
OXALATE <i>Oxalate oxidase/ Peroxidase</i>	23539	1 x 20 mL	1 x 5 mL	25	Std Inc, RB, w/o tubes and pretreatment reagent
PHOSPHORUS <i>Phosphomolybdate/ UV</i>	21518 23518	4 x 50 mL 1 x 50 mL	4 x 20 mL 1 x 20 mL	280 70	
PREALBUMIN <i>Immunoturbidimetric assay</i>	23106	1 x 60 mL	1 x 15 mL	75	
PROTEIN (URINE+CSF) <i>Pyrogallol red</i>	21512 23512	8 x 20 mL 4 x 20 mL	- -	160 80	
PROTEIN (TOTAL) <i>Biuret</i>	21513 23513	2 x 60 mL 1 x 60 mL	2 x 20 mL 1 x 20 mL	160 80	
RHEUMATOID FACTORS (RF) <i>Immunoturbidimetric latex assay</i>	22922 23922	4 x 60 mL 1 x 60 mL	4 x 15 mL 1 x 15 mL	300 75	
TOTAL BILE ACIDS <i>Enzymatic cycling</i>	21551 23551	2 x 60 mL 1 x 60 mL	2 x 20 mL 1 x 20 mL	160 80	
TRANSFERRIN <i>Immunoturbidimetric assay</i>	22105 23105	2 x 60 mL 1 x 60 mL	2 x 15 mL 1 x 15 mL	150 75	
TRIGLYCERIDES <i>Glycerol phosphate oxidase/ Peroxidase</i>	21528 23528	10 x 60 mL 4 x 60 mL	- -	600 240	
UNSATURATED IRON BINDING CAPACITY (UIBC) <i>Ferrozine</i>	21835	2 x 60 mL	2 x 15 mL	150	
UREA/ BUN-UV <i>Urease/ Glutamate dehydrogenase</i>	21516 23516	8 x 60 mL 4 x 60 mL	8 x 15 mL 4 x 15 mL	600 300	
URIC ACID <i>Uricase/Peroxidase</i>	21521 23521	10 x 60 mL 4 x 60 mL	- -	600 240	



BioSystems S.A.
Costa Brava 30, 08030 Barcelona (Spain)
t. +34 933 110 000
www.biosystems.global



Management
System
ISO 9001:2015
ISO 13485:2016
www.tuv.com
ID 0091006696