

BA 400

BioSystems

Efficiency and Autonomy

Clinical Chemistry Analyser

Clinical analysis

human - centred biotech



Our main goal is to optimise the laboratory workflow and improve the user experience.





 BioSystems

—
BA400 system:
updated to suit
our users needs.

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.



—
Growing together
is our main goal.

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.

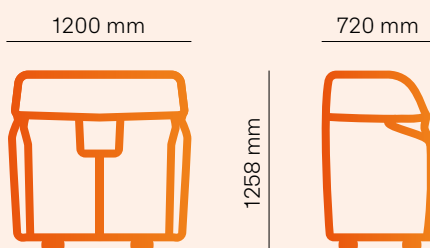
Ordering Information

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

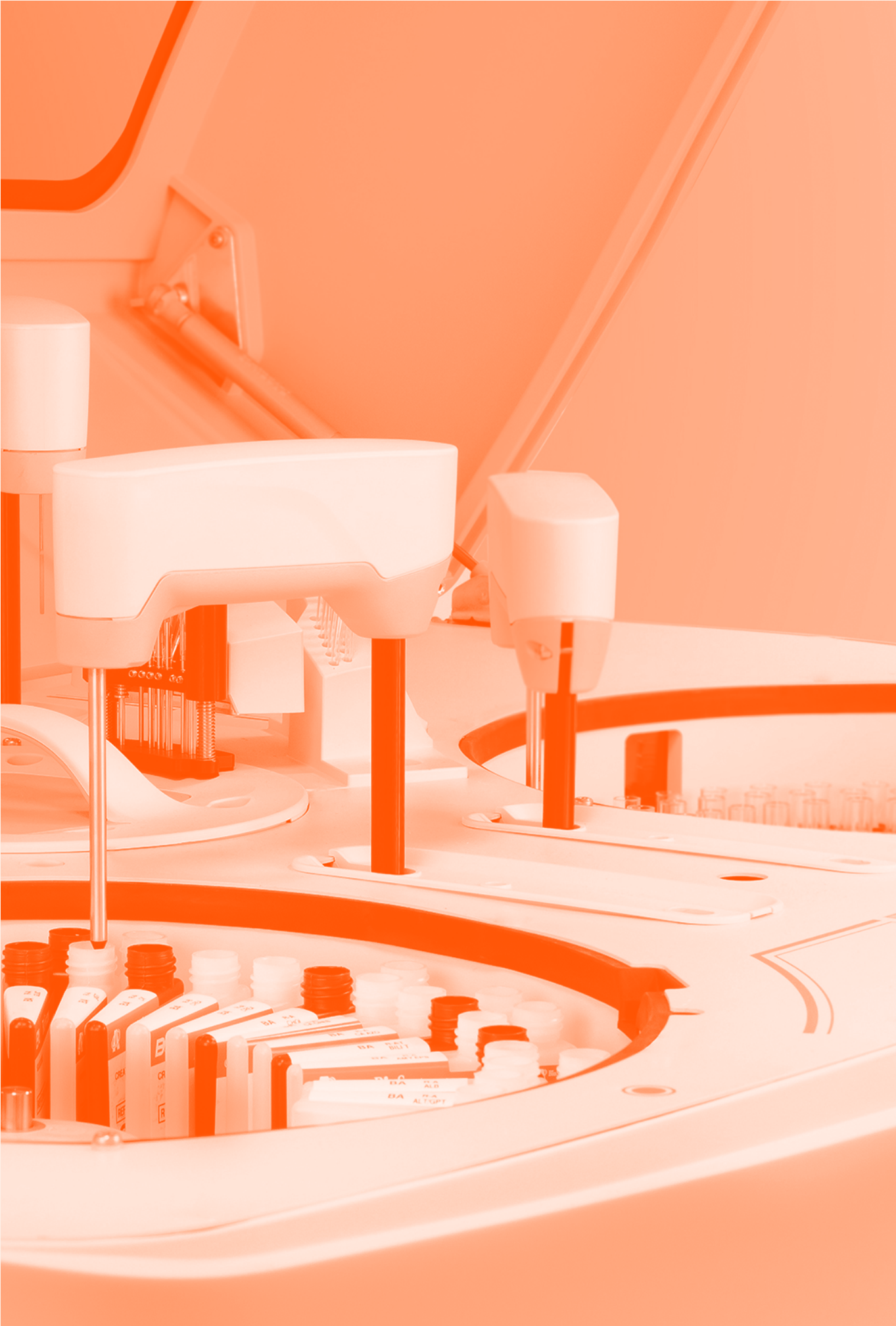
If you want information about the ISE module consumables, contact us at customersupport@biosystems.es.

* FDA approved.

** Check the need of use.



Throughputs		Optical System	
Throughput without ISE module	400 t/h	Light Source	LED
Throughput of ISE module	320 t/h	Wavelengths	340 - 405 - 505 - 535 - 560 - 600 - 635 - 670 nm
Maximum (photometric + ISE)	560 t/h	Photometric range	-0.2 to 3.5 A
ISE Module (optional)		Internal resolution	0.0001 A
Sample type	Serum, plasma or urine	Measurement accuracy	CV <1% at 0.1 A
Electrode type	Na ⁺ , K ⁺ , Cl ⁻ , Li ⁺ (optional)	(for 340 nm, 405 nm and 505 nm)	CV <0.1% at 2 A
Sample volume	Serum: 100 µL / Urine: 200 µL	Size and weight	
Sample handling		Size (w., d., h.)	1200x720x1258 mm
Sample rotor capacity	Up to 18 segments available (14 positions/segment)	Weight	210 Kg
Barcode reader	Yes	Electrical and Environmental Requirements	
Number of samples with barcode	9/segment	Mains voltage	115 to 230 V
Size of primary tubes	Diameter 12 mm to 16 mm (max. height 100 mm)	Mains frequency	50 or 60 Hz
Sample well	Diameter 13.5 mm	Electric power	500 VA
Sample types	Serum, plasma, urine, whole blood, cerebrospinal liquid, semen and biological fluid	Ambient temperature	From 10 to 35 °C From 10 to 30 °C (With ISE module)
Dispensing mode	Ceramic pump without maintenance	Relative humidity	<85% without condensation
Pipetting volume	From 2 µL to 40 µL	Altitude	<2500 m
Pipetting resolution	0.1 µL	Fluidic Requirements	
Predilution ratio	From 1:2 to 1:200	Water inlet	External tank or mains water supply
Clot detector	Yes	Water type	Purified water type II
Tip wash	Inside and outside	Water consumption	<14 L/h
Reagent handling		Bottle of high concentration waste	5 L
Volume of reagent bottles	20 mL, 60 mL	Bottle of washing solution	5 L
Reagent rotor capacity	88 (44 bottles of 20 mL or 60 mL + 44 bottles of 20 mL)	Minimum Computer Requirements	
Cooled reagent	Yes	Operating system	Windows® 10 64 bit (x64)
Temperature range of refrigerator	From 6 to 11 °C (measured at 21 °C)	CPU	Equivalent to Intel Core i3 @3.10 GHz or higher
Barcode reader	Yes	RAM	4 GB
Reagent volume R1	120 µL to 450 µL	Hard Disk	40 GB or higher
Reagent volume R2	10 µL to 300 µL	Monitor minimum resolution	1024x768
Dispensing mode	Ceramic pump without maintenance	Connector of serial channel	USB
Pipetting resolution	1 µL	Laboratory Information Systems (LIS)	
Tip wash	Inside and outside	Connectivity to LIS	HL7 and ASTM protocols
Reactions rotor		Directives and Standards Compliance	
Reaction volume range	From 180 µL to 600 µL	EC Directive-IVD	98/79/CE
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)		



BA400 Reagents

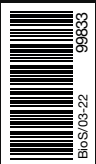
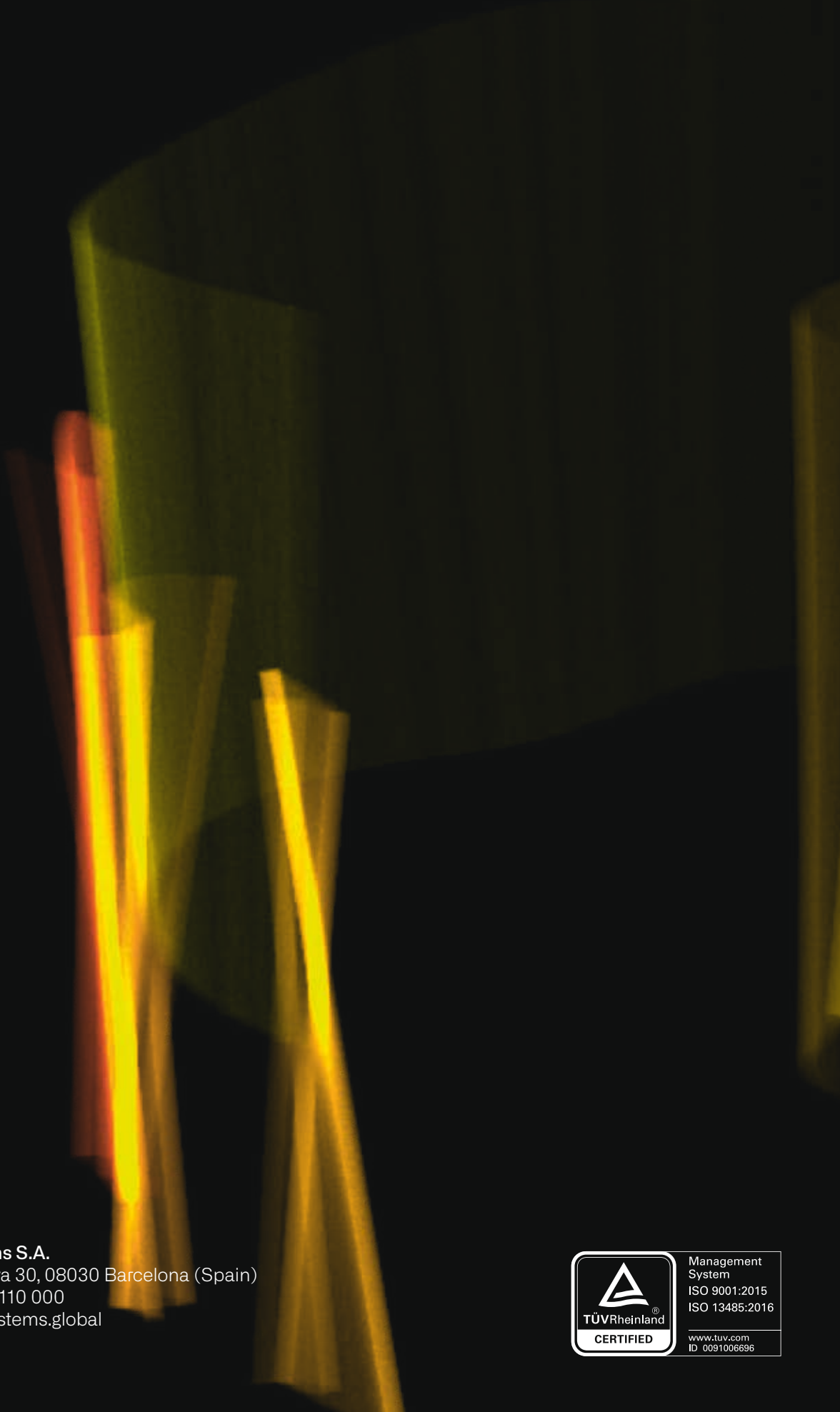
Test	Code	RA	RB	mL/Kit	Comments
α-AMYLASE DIRECT <i>Direct substrate</i>	21550 23550	8 x 20 mL 4 x 20 mL	- -	160 80	
α-AMYLASE PANCREATIC <i>IFCC</i>	21799	2 x 60 mL	2 x 15 mL	150	
α-AMYLASE-EPS <i>IFCC</i>	21534	2 x 60 mL	2 x 15 mL	150	
α-GLUCOSIDASE NEW <i>Glucose oxidase/Peroxidase</i>	21522	2 x 20 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 23533	8 x 60 mL 4 x 60 mL	8 x 15 mL 4 x 15 mL	600 300	
ALBUMIN <i>Bromocresol green</i>	21547 23547	10 x 60 mL 4 x 60 mL	- -	600 240	
ALBUMIN (MICROALBUMINURIA) <i>Immunoturbidimetric latex assay</i>	22324 23324	4 x 60 mL 1 x 60 mL	4 x 15 mL 1 x 15 mL	300 75	
ALKALINE PHOSPHATASE (ALP)-AMP <i>AMP buffer (IFCC)</i>	21592 23592	4 x 60 mL 1 x 60 mL	4 x 15 mL 1 x 15 mL	300 75	
ALKALINE PHOSPHATASE (ALP)-DEA <i>DEA buffer</i>	21590 23590	4 x 60 mL 1 x 60 mL	4 x 15 mL 1 x 15 mL	300 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 23923	2 x 60 mL 1 x 60 mL	2 x 15 mL 1 x 15 mL	150 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 23921	4 x 60 mL 1 x 60 mL	4 x 15 mL 1 x 15 mL	300 75	
C-REACTIVE PROTEIN-er (CRP-er) <i>Immunoturbidimetric latex assay, extended range</i>	22942 23942	2 x 60 mL 1 x 60 mL	2 x 15 mL 1 x 15 mL	150 75	
C-REACTIVE PROTEIN hs (CRP-hs) <i>Immunoturbidimetric latex assay, high sensitivity</i>	22927 23927	2 x 60 mL 1 x 60 mL	2 x 15 mL 1 x 15 mL	150 75	
CREATINE KINASE (CK) <i>IFCC</i>	21790 23790	2 x 60 mL 1 x 60 mL	2 x 15 mL 1 x 15 mL	150 75	
CREATINE KINASE-MB (CK-MB) <i>Immuno-inhibition</i>	21792 23792	2 x 60 mL 1 x 60 mL	2 x 15 mL 1 x 15 mL	150 75	
CREATININE <i>Jaffé-compensated</i>	21502 23502	5 x 60 mL 5 x 20 mL	5 x 60 mL 5 x 20 mL	600 200	
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 23934	2 x 40 mL 1 x 40 mL	2 x 20 mL 1 x 20 mL	120 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 23520	4 x 60 mL 2 x 60 mL	4 x 15 mL 2 x 15 mL	300 150	
GLUCOSE <i>Glucose oxidase/ Peroxidase</i>	21503 23503	10 x 60 mL 4 x 60 mL	- -	600 240	
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	4 x 50 mL	4 x 20 mL	280	
	23518	1 x 50 mL	1 x 20 mL	70	
PREALBUMIN					
<i>Immunoturbidimetric assay</i>	23106	1 x 60 mL	1 x 15 mL	75	
PROTEIN (URINE+CSF)					
<i>Pyrogallol red</i>	21512	8 x 20 mL	-	160	
	23512	4 x 20 mL	-	80	
PROTEIN (TOTAL)					
<i>Biuret</i>	21513	2 x 60 mL	2 x 20 mL	160	
	23513	1 x 60 mL	1 x 20 mL	80	
RHEUMATOID FACTORS (RF)					
<i>Immunoturbidimetric latex assay</i>	22922	4 x 60 mL	4 x 15 mL	300	
	23922	1 x 60 mL	1 x 15 mL	75	
TOTAL BILE ACIDS					
<i>Enzymatic cycling</i>	21551	2 x 60 mL	2 x 20 mL	160	
	23551	1 x 60 mL	1 x 20 mL	80	
TRANSFERRIN					
<i>Immunoturbidimetric assay</i>	22105	2 x 60 mL	2 x 15 mL	150	
	23105	1 x 60 mL	1 x 15 mL	75	
TRIGLYCERIDES					
<i>Glycerol phosphate oxidase/ Peroxidase</i>	21528	10 x 60 mL	-	600	
	23528	4 x 60 mL	-	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	8 x 60 mL	8 x 15 mL	600	
	23516	4 x 60 mL	4 x 15 mL	300	
URIC ACID					
<i>Uricase/Peroxidase</i>	21521	10 x 60 mL	-	600	
	23521	4 x 60 mL	-	240	



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