

BA200

BioSystems

Automation and Flexibility

Clinical Chemistry Analyser

Clinical analysis

human - centred biotech



A person wearing a white lab coat and a black watch is operating a large, white, modern analytical system. The person's hands are on a horizontal bar that is part of the machine's interface. The machine has a sleek, curved design with a large, dark, reflective surface. The background is a blurred laboratory setting with glass panels and structural elements.

We understand your needs
ensuring maximum flexibility
and performance.

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BA200 analytical
system: designed
to enhance the
laboratory workflow.



BA200

Technological innovation

The highest flexibility and compactness

A single rotor for samples and reagents allows maximum compactness without losing flexibility. The rotor layout is completely free to better fit the users' needs.

Highest performance, minimal maintenance

The optical bench is based on our patented LED technology, which requires the minimum maintenance and allows the longest lifespan. The LEDs performance also enables the throughput of 200 t/h.





Make your work easier

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



Reliable validated system

Reagents are specifically designed and validated to ensure robust and reliable results. The reagent barcodes and the volume detection system allow a completely control of the reagent used at any time.



Systemic solutions

In combination with the original validated BA reagents (complete panel of clinical chemistry including special tests), the BA200 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 analysers 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
& Technical
Support



Remote
Assistance



Customized
Support

Technical specifications

Highlights

- Throughput of 200 t/h (clinical chemistry and turbidimetry reagents).
- Maximum throughput of 300 t/h with ISE Module: Na⁺, K⁺, Cl⁻ and Li⁺ (optional).
- High reagent and sample capacity (88 positons) with barcode reader, the highest grade in flexibility.
- Automatic hemolysis on whole blood samples.
- Reaction rotor washing station and continuous evaluation of cuvette 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).

Ordering Information

Item	Code	Quantity
BA200 analyser/BA200 analyser with ISE module	83200/83200ISE	-
Wheeled table + computer support	AC17346	1 unit
Wheeled table	AC17345	1 unit
Reaction rotor	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
Sample wells (pediatric cups)	AC10770	1000 units
Reagent bottles 60 mL + caps	AC16362	10 units
Reagent bottles 20 mL + caps	AC16363	10 units
Amber reagent bottles 60 mL + caps	AC16364	10 units
Amber reagent bottles 20 mL + caps	AC16365	10 units
ISE Module*		
Sodium Electrode (Na ⁺)	5201	1 unit
Potassium Electrode (K ⁺)	5202	1 unit
Chloride Electrode (Cl ⁻)	5207	1 unit
Reference Electrode	5204	1 unit
Lithium Electrode (Li ⁺)	5205	1 unit
Spacer Electrode	5206	1 unit
Reagent pack Na ⁺ /K ⁺ /Cl ⁻ /Li ⁺	5420	1 unit
Urine diluent 125 mL	5412	125 mL
Urine diluent 500 mL	5408	500 mL
ISE Cleaning solution Kit	5421	1 unit
Bi-level quality control kit (Na ⁺ /K ⁺ /Cl ⁻ /Li ⁺)	2814	1 unit
Tri-level quality control kit (Na ⁺ /K ⁺ /Cl ⁻ /Li ⁺)	2815	1 unit

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

Throughputs

Throughput without ISE module	200 t/h
Throughput with ISE module	300 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 88 flexible positions
Barcode reader	Yes
Size of primary tubes	Diameter 12 mm to 16 mm (max. height 100 mm)
Sample well	13.5 mm diameter
Sample types	Serum, plasma, urine, whole blood, cerebrospinal liquid, semen and biological fluids
Dispensing mode	Ceramic piston pump with low maintenance
Pipetting volume	From 2 µL to 40 µL
Pipetting resolution	0.1 µL
Predilution ratio	From 1:1 to 1:200
Clot detector	Yes
Tip wash	Inside and outside

Reagent handling

Volume of reagent bottles	20 mL, 60 mL
Cooled reagent	Yes
Temperature range of refrigerator	From 6 to 11 °C (measured at 21 °C)
Barcode reader	Yes
Reagent volume R1	90 µL to 300 µL
Reagent volume R2	10 µL to 100 µL
Dispensing mode	Ceramic piston pump with low maintenance
Pipetting resolution	0.1 µL
Tip wash	Inside and outside

Reactions rotor

Reaction volume range	From 180 µL to 440 µL
Number of wells	120
Well material	UV methacrylate
Type of incubation	5 min. (fixed)
Temperature	37.0 °C
Temperature accuracy	± 0.2 °C
Number of mixers	1
Cuvette washing system	8 steps washing station

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

Dimensions

Size (w., d., h.)	1070 x 690 x 680 mm
Weight	166 Kg

**Electrical and
environmental requirements**

Main voltage	115 to 230 V
Main frequency	50 or 60 Hz
Electric power	500 VA max.
Room 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 type II
Water consumption	<9 L/h
Bottle of high concentration waste	2.4 L
Bottle of washing solution	2.4 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

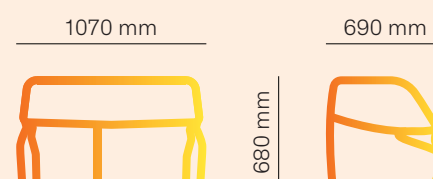
**Laboratory Information
Systems (LIS)**

Connectivity to LIS	HL7 and ASTM protocols
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**Regulations and Standards
Compliance**

IVD Regulation (EU)	2017/746
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Intended use: automated analyser for the measurement of analyte concentrations in human clinical specimens using *in vitro* diagnostics reagents. For *in vitro* professional use in the clinical laboratory only.





BA200

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	

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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	
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	
CERULOPLASMIN NEW <i>Turbidimetry</i>	22340	1 x 40mL	1 x 10mL	50	
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 HDL DIRECT NEW <i>TOOS</i>	21594 23594	4x60mL 1x60mL	4x20mL 1x20mL	320 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	
CHOLESTEROL LDL DIRECT NEW <i>TOOS</i>	21585 23585	1x60mL 25x60mL	1x20mL 25x20mL	80 2000	
CHOLINESTERASE (CHE) <i>Butyrylthiocholine</i>	21588	2 x 60 mL	2 x 15 mL	150	

WR: Working Reagent / RA: Reagent A Preparation / RB: Reagent B Preparation / Std Inc: Standard Included

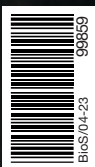
Test	Code	RA	RB	mL/Kit	Comments
CITRATE					
<i>Citrate lyase/ Malate dehydrogenase</i>	23795	2 x 20 mL	2 x 5 mL	50	RB + Std Inc
COMPLEMENT COMPONENT C3					
<i>Immunoturbidimetric assay</i>	23103	1 x 60 mL	1 x 15 mL	75	
COMPLEMENT COMPONENT C4					
<i>Immunoturbidimetric assay</i>	23104	1 x 60 mL	1 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-HEXOKINASE					
<i>Hexokinase</i>	21656	4 x 60 mL	4 x 15 mL	300	
	23656	1 x 60 mL	1 x 15 mL	75	

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Test	Code	RA	RB	mL/Kit	Comments
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 22147	2 x 60 mL 1 x 60 mL	2 x 12 mL 1 x 12 mL	144 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 23509	4 x 60 mL 2 x 60 mL	4 x 15 mL 2 x 15 mL	300 150	
LACTATE <i>Lactate oxidase/ Peroxidase</i>	21736 23736	4 x 60 mL 1 x 60 mL	4 x 15 mL 1 x 15 mL	300 75	
LACTATE DEHYDROGENASE (LDH) <i>Pyruvate</i>	21580 23580	8 x 60 mL 4 x 60 mL	8 x 15 mL 4 x 15 mL	600 300	
LACTATE DEHYDROGENASE (LDH)-IFCC <i>IFCC</i>	21586 23586	8 x 60 mL 2 x 60 mL	8 x 15 mL 2 x 15 mL	600 150	
LIPASE NEW <i>DGGR</i>	21760	1 x 20 mL	1 x 10 mL	30	
MAGNESIUM <i>Xylidyl blue</i>	21797 23797	2 x 60 mL 1 x 60 mL	2 x 15 mL 1 x 15 mL	150 75	
NON-ESTERIFIED FATTY ACIDS (NEFA) NEW <i>Acyl-CoA Oxidase/Peroxidase</i>	21840	2 x 20 mL	2 x 7 mL	54	RA, RB

Clinical analysis

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>	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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Management
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