cobas b 221 POC system

Confidence through performance in blood gas testing

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Life needs answers

cobas b 221 POC system

- *Reliability*
- *Efficiency*
- *Speed*
- *Flexibility*
- *Convenience*

cobas b 221 POC system	Versions		
Parameter Combinations	**2**	**4**	**6**
pH / blood gas (PO_2, PCO_2,pH) / CO-Oximetry	●	●	●
Electrolytes (Na^+, K^+, Ca^{2+}, Cl^-), hematocrit		●	●
Metabolites Glu / Lac			●
Metabolites Glu / Lac / Urea (BUN)			●
Bilirubin	●	●	●

Reliability

- Automated QC measurements independet from calibration solutions ensure system validity
- Self-monitoring of all calibration steps
- Fluid pack information is automatically transmitted to the analyzer eliminating the need for scanning barcodes
- Includes patient trend data and automated acid-base mapping
- The only blood gas analyzer in the world measuring pH pleural fluid
- Flexible connectivity options help to ensure accuracy for LIS/HIS data collection, documentation and reporting
- All covers and flaps are monitored for controlled user interaction

Efficiency

- Long-life and maintenance free sensors help to save money
- The room temperature multi-reagent containers save valuable refrigerator space
- Centralized reimbursement is reality with the **cobas b** 221 POC system by remote data management as billing is captured electronically

Speed

- The **cobas b** 221 POC system will support you with fast actionable health information
- Blood gas results shown in less than one minute
- Fast data transfer and retrieval

Flexibility

- Fill port enhances operator safety by automatic aspiration or manual injection of patient samples into the system
- Flexible, individually adjustable parameter configurations
- User definable display
- Intuitive user interface
- Micro mode allows you to measure samples with limited volume

Convenience

- Zero-maintenance electrodes perform 6 – 15 months (depending on parameter) and eliminate the need to refill, soak, polish or replace caps
- Load-and-go smart reagents are stable for up to 42 days
- System automatically tracks reagent use for minimum operator intervention
- Simple, single handed operation
- AQC can be loaded with up to 120 ampoules

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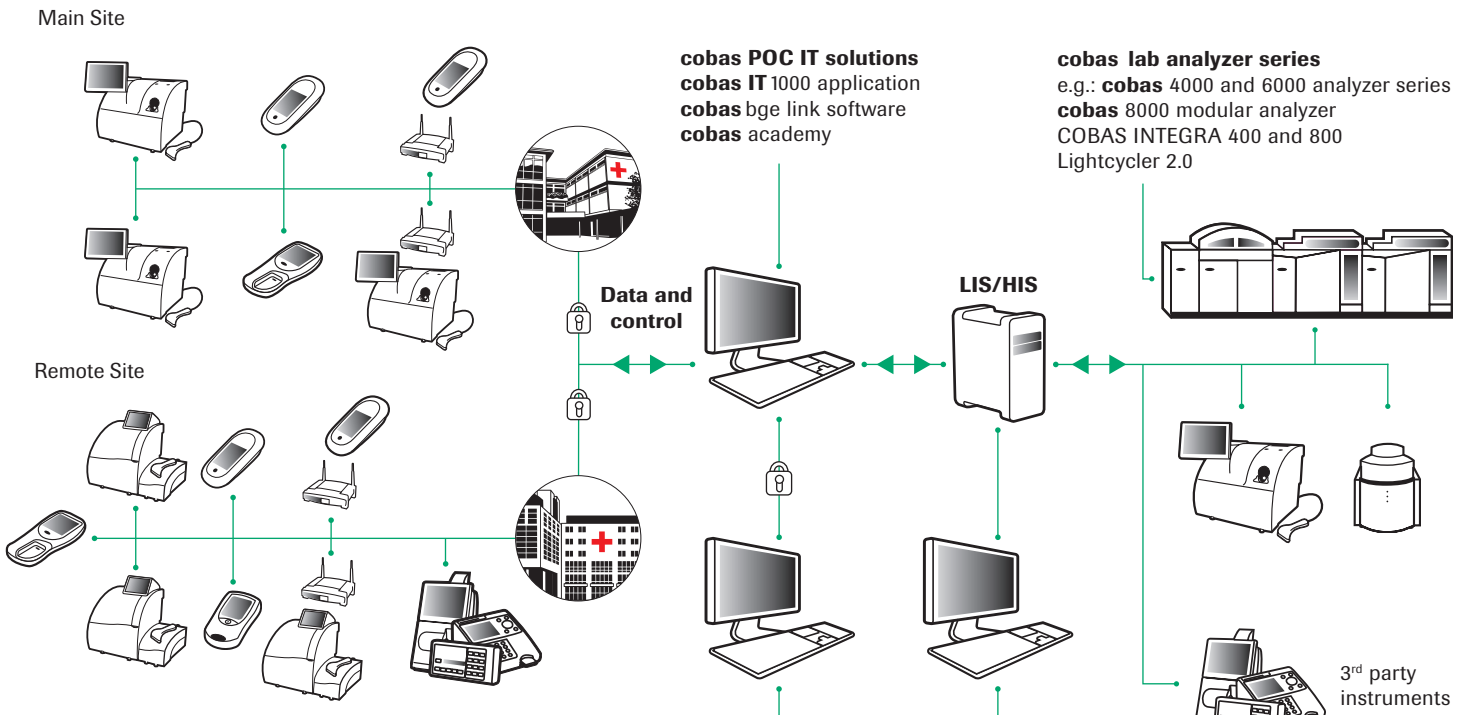
Connectivity that works

Fulfilling your testing needs no matter where

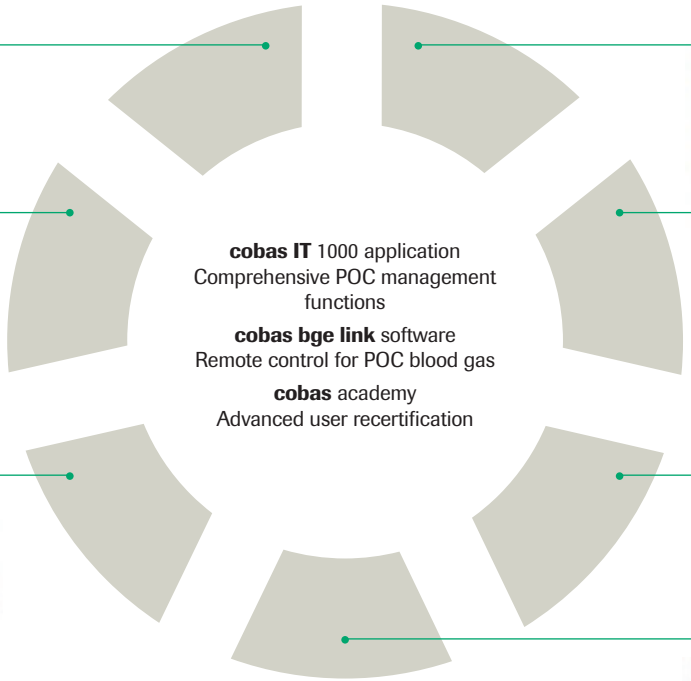


cobas hospital POC solution

Accu-Chek® Inform II system
Connected blood glucose meter with wireless RF functionality

cobas b 221 POC system
Multiparameter blood gas, electrolyte, COOX and metabolite analyzer

Reflotron® Plus system
17 clinical chemistry parameters



cobas IT 1000 application
Comprehensive POC management functions

cobas bge link software
Remote control for POC blood gas

cobas academy
Advanced user recertification

CoaguChek® XS Pro system
Effícient, convenient and rapid PT/INR testing

cobas h 232 POC system
Rapid determination of troponin T, NT-proBNP, D-dimer, CK-MB and myoglobin

Urisys® 1100 analyzer
Rapid, efficient and convenient urine testing

3rd party instruments
More than 20 drivers for the most common non-Roche analyzers

Improve your critical care testing.

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cobas b 221 POC system
Product specifications

Measured parameters

Blood gas module	**Total specified range**
pH	6.0 – 8.0
PCO_2	4.0 – 200 mmHg
PO_2	0 – 800 mmHg
Electrolyte module	
Na^+	20.0 – 250 mmol/L
K^+	0.2 – 20 mmol/L
Ca^{2+}	0.1 – 4.0 mmol/L
Cl^-	20.0 – 250 mmol/L
Hct	10 – 80 %
Hemoglobin module	
tHb	3 – 25 g/dL
SO_2	50 – 100 %
Metabolite module	
Glu	0.5 – 40 mmol/L
Lac	0.2 – 20 mmol/L
Urea (BUN)	0.5 – 30 mmol/L
CO-oximetry module	
tHb-COOX	3 – 25 g/dL
O_2Hb	0 – 100 %
HHb	0 – 100 %
COHb	0 – 100 %
MetHb	0 – 100 %
SO_2 COOX	0 – 100 %
Bilirubin (neonatal)	3 – 50 mg/dL
Barometric pressure (Baro)	450 – 800 mmHg

Calculated parameters	H^+, $cHCO_3^-$, $ctCO_2(P)$, FO_2Hb, BE, BE_{ecf}, BB, SO_2, P_{50}, ctO_2, $ctCO_2(B)$, pH_{st}, $cHCO_{3\text{-}st}$, PAO_2, $AaDO_2$, a/AO_2, $avDO_2$, RI, Shunt, nCa^{2+}, AG, pH^t, H^{+t}, PCO_2^t, PO_2^t, PAO_2^t, $AaDO_2^t$, a/AO_2^t, RI^t, Hct(c), MCHC, BO_2, BE_{act}, Osmolality, OER, Heart minute volume (Q_t), P/F Index

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Sample types	Whole blood, Serum, Plasma, Dialysate, QC material

Calibration	**Intervals, Duration**
System calibration	Every 24 hours (programmable 8, 12 or 24 hours)
1 point-calibration	Every 60 minutes (programmable 30 to 60 minutes)
2 point-calibration	Every 12 hours (programmable 4, 8 or 12 hours)
Warm-up	Power on with calibration < 43 min
Warm-up	Power fail < 1 min < 2.5 min

Data processing	
Industrial standard PC	
Monitor	Built-in flat color TFT-LCD 10.4 inch screen (touchscreen)
Thermal printer	Built-in 111 mm, graphical capability
Barcode scanner	Standard accessory

Electrical requirements	
Power rating	100 – 240 V (+6 %/ – 10 % permission to tolerance), 200 W, 50/60 Hz autoselecting
Ambient temperature	+15 to +31 °C (59 to 89.6 °F)
Relative humidity, not condensed	15 < T < 31 °C: 20 – 85 %

Options	
Built-in AQC	Automatic quality control system, with room for up to 120 QC ampoules

Test certificate	
FDA	510 (k)
UL	UL3101-1
CE-Conformity	IVD-Directive 98/79/EC (IEC 1010-1 / EN 61010-1 / EN 61010-2-101)

Dimension / Weight	**Instrument**
Width	< 51 cm
Height	< 59 cm (in operating situation)
Depth	< 60 cm (with power supply)
Weight (without solutions, without AutoQC)	45 kg

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Neonatal bilirubin on the cobas b 221 POC system

Because timely monitoring can reduce the risk of life-threatening diseases

*The **cobas b** 221 POC system delivers bilirubin results in 1 minute or less.*

Timely monitoring of critical newborns can reduce the risk of potentially life-threatening diseases and enhance neonatal care for hyperbilirubinemia.

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Neonatal bilirubin testing with the cobas b 221 POC system

Critical, actionable information in 60 seconds or less

Kernicterus caused by severe neonatal hyperbilirubinemia: a serious condition that can lead to brain damage or death

- Estimates based on the US National Vital Statistics Report (2002) project an annual caseload of more than 80,000 newborns with bilirubin levels > 20 mg/dL[1]
- A preponderance of kernicterus cases have occurred in infants with elevated bilirubin levels (> 20 mg/dL)[1]
- Continuing reports of new cases of kernicterus raise opportunities for enhancing treatment standards for hyperbilirubinemia care[2]

With one touch, the cobas b 221 POC system delivers actionable information and enhanced care throughout the hospital:

For patients:

- Requires only 47 µL of whole blood so there's less trauma to the newborn

For healthcare providers:

- Enables rapid TAT by providing total bilirubin results in < 60 seconds
- Demonstrates very good correlation with Clinical Chemistry Analysers
- Helps ensure closer monitoring of newborns in a critical condition

For administration:

- Requires no additional reagents, labor or cost
- Delivers accurate results and regulatory control supporting confident and efficient delivery of care in the NICU

The American Academy of Pediatrics (AAP) recently released updated clinical guidelines for the managment of hyperbilirubinemia in newborns: [3]

- Establish nursery protocols for identification/evaluation of hyperbilirubinemia
- Measure total serum bilirubin (TSB) or transcutaneous bilirubin (TcB) level of infants jaundiced in the first 24 hours
- Interpret all bilirubin levels according to infant's age in hours
- Recognize that infants born at < 38 weeks are at higher of hyperbilirubinemia risk and require closer monitoring
- Recognize that visual estimation of bilirubin levels from the degree of jaundice can lead to errors, particularly in darkly pigmented infants
- Perform a systematic assessment for the risk of severe hyperbilirubinemia on all infants prior to discharge

References

1 Ip S, Glicken S, Kulig J, et al. Management of neonatal hyperbilirubinemia. AHRQ Publication 03-E011. U.S. Department of Health and Human Services, Agency for Healthcare Research and Quality; 2003. Available at www.ncbi.nlm.nih.gov/books as of 7/15/05.

2 Johnson L, Bhutani V, Brown A. System-based approach to management of neonatal jaundice and prevention of kernicterus. J Pediatr. 2002;140:396–403.

3 American Academy of Pediatrics Subcommittee on Hyperbilirubinemia. Clinical Practice Guideline: Management of hyperbilirubinemia in the newborn infant 35 or more weeks of gestation. Pediatrics. 2004;114(1):297–316.

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Acid-base mapping and graphical trending on the cobas b 221 POC system

Actionable information instead of diagnostic data

*The **cobas b** 221 POC system delivers bilirubin results in 1 minute or less.*

Accurate, graphical acid-base and parameter trending on the **cobas b** 221 blood gas system can help to:

- Differentiate between acute and chronic patient conditions in complex environments such as the ER or ICU
- Rapidly identify metabolic and respiratory acid-base disturbances without the need for a calculator
- Easily distinguish between compensatory responses and mixed acid-base disturbances
- Efficiently monitor the effectiveness of therapy (e.g glycemic control)

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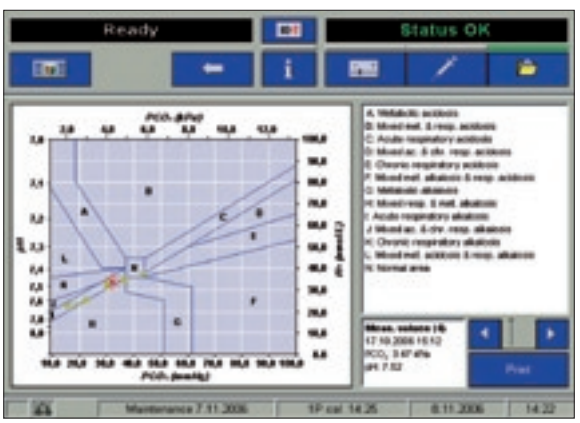
Fast actionable information for directed patient care

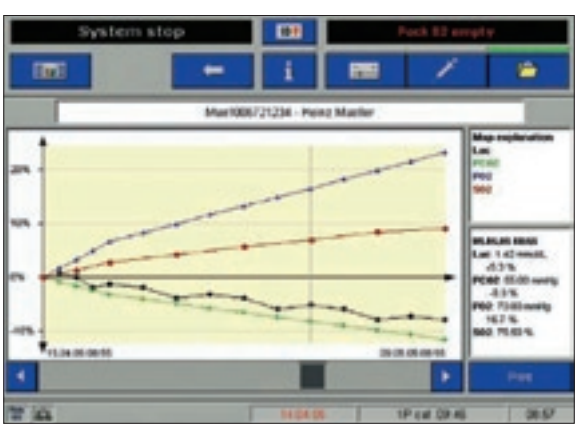
Acid-base map trending

- Automatically provides a real-time, graphical representation of a patient's results (pH, PCO_2 and standard base excess parameters)
- On screen and printable – from current result or database
- Delivers vital information in less than 60 seconds to help ensure timely diagnosis and intervention for metabolic or respiratory conditions
- Decision support as to success of therapy



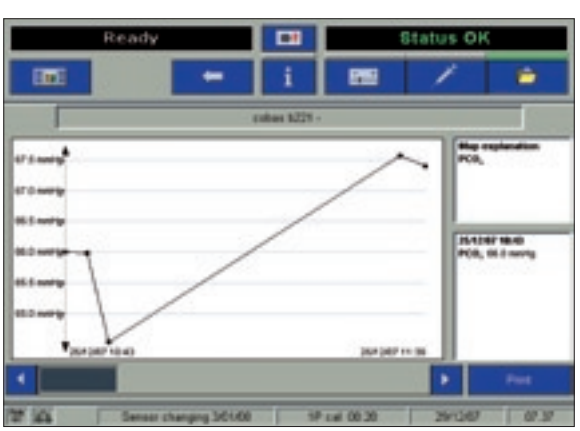
Multiparameter graphical patient trending

- Decision support as to success of therapy in complex situations
- The **cobas b** 221 POC system can plot up to four selectable parameters
- Graphically presented as % baseline of the first result selected
- On screen or printable – from current result or database



Single parameter graphical patient trending

- Values graphically plotted can be used to monitor disease progression or monitor trends e.g. TGC
- Upper and lower limits critical can be defined
- Graphically presents the parameter trend over a selected period with absolute values
- On screen or printable – from current result or database



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