pH
pCO_2
pO_2
sO_2
*c*tHb
FO_2Hb
*F*COHb
*F*MetHb
*F*HHb
Hct
cK^+
cNa^+
cCa^{2+}
cCl^-
*c*Glu

* in development

ABL80 FLEX
Specifications

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Measured parameters

Type	Parameter	Units	Measuring range	Cassettes without CO-OX			Cassettes with CO-OX		
				Full Panel		BG/Hct	Full Panel		BG/CO-OX
				w/Glu	w/o Glu		w/Glu	w/o Glu	
*p*H	pH		6.00-8.00	x	x	x	x	x	x
Blood Gas	pCO_2	mmHg	0-150	x	x	x	x	x	x
		kPa	0.0-20.0						
	pO_2	mmHg	0-760	x	x	x	x	x	x
		kPa	0.0-101.3						
Electrolytes	cCa^{2+}	mmol/L	0.00-5.00	x	x		x	x	
		mEq/L	0.00-10.00						
		mg/dL	0.00-20.00						
	cCl^-	mmol/L	0-250	x	x		x	x	
		mEq/L	0-250						
	cK^+	mmol/L	0.0-20.0	x	x		x	x	
		mEq/L	0.0-20.0						
	cNa^+	mmol/L	0-210	x	x		x	x	
		mEq/L	0-210						
Glucose	cGlu	mmol/L	0.0-75.0	x			x		
		mg/dL	0-1351						
Hematocrit	Hct	%	0-85	x	x	x			
Oximetry	ctHb	g/dL	0.0-27.7				x	x	x
		d/L	0-277						
		mmol/L	0.0-17.2						
	sO_2	%	0.0-100.0				x	x	x
		Fraction	0.000-1.000						
	*F*O2Hb	%	0.0-100.0				x	x	x
		Fraction	0.000-1.000						
	*F*COHb	%	0.0-100.0				x	x	x
		Fraction	0.000-1.000						
	*F*MetHb	%	0.0-100.0				x	x	x
		Fraction	0.000-1.000						
	*F*HHb	%	0.0-100.0				x	x	x
		Fraction	0.000-1.000						

Derived and input parameters

Derived parameters

Parameter	Description
$cHCO_3^-(P)$	Concentration of bicarbonate
cBase(B)	Concentration of titratable base in blood (actual base excess)
cBase(B,ox)	Concentration of titratable base in fully oxygenated blood
cBase(Ecf)	Concentration of titratable base in extracellular fluid (standard base excess)
cBase(Ecf,ox)	Concentration of titratable base in extracellular fluid from fully oxygenated blood
$cHCO_3^-(P,st)$	Concentration of bicarbonate in plasma of standardized blood (standard bicarbonate)
$ctCO_2(P)$	Concentration of total carbon dioxide in plasma
$ctCO_2(B)$	Concentration of total carbon dioxide in whole blood (CO_2 content)
$cCa^{2+}(7.40)$	Concentration of calcium ion in whole blood at a pH of 7.40
Anion Gap (K^+)	Molecular difference in concentration of sodium and potassium and concentration of bicarbonate plus chloride
Anion Gap	Molecular difference in concentration of sodium and the concentration of bicarbonate plus chloride
ctO_2	Concentration of total oxygen in whole blood (O_2 content)
sO_2	Oxygen saturation of hemoglobin
ctHb	Concentration of total hemoglobin in whole blood
$pO_2(A)$	Oxygen tension in alveolar air
$pO_2(a/A)$	Arterio-alveolar oxygen tension ratio
$pO_2(A–a)$	Alveolo-arterial oxygen tension difference
RI	Respiratory index
*m*Osm	Osmolality
*p*50	Oxygen tension at 50 % saturation of blood
p50(st)	Oxygen tension at 50 % saturation of blood at standard conditions for pH, pCO_2, *F*COHb, *F*MetHb, *F*HbF at 37 °C
$pO_2(a)/FO_2(I)$	Oxygen tension ratio of arterial blood to the fraction of oxygen in inspired air
$\dot{D}O_2$	Oxygen delivery
Hct	Fraction of the volume of erythrocytes in the volume of whole blood
$pO_2(x)$	Oxygen extraction tension of arterial blood
BO_2	Oxygen capacity of hemoglobin. The maximum concentration of oxygen bound to hemoglobin in blood, saturated so that all deoxyhemoglobin is converted to oxyhemoglobin
*F*Shunt	Volume fraction of shunted venous blood in arterial blood
$\dot{V}O_2$	Oxygen consumption
Qx	Oxygen compensation factor of arterial blood
$\dot{Q}_t$	Cardiac output
V(B)	Volume of blood
(T)	Denotes temperature-corrected value (pH(*T*), $pCO_2(T)$, $pO_2(T)$, $pO_2(A,T)$, $pO_2(a/A,T)$, pO_2,(A-a,*T*), RI(*T*), *F*Shunt(*T*) *p*50(*T*) $pO_2(a,T)/FO_2(I)$ $pO_2(x,T)$)

Input parameters

Type	Definition
User ID/Name	Operator identification
Patient ID	Patient identification number
Patient name	Patient name, first and last
Sample type	Arterial, Venous, Mixed Venous, Capillary, Other fluids, Proficiency test
Patient type	User-defined up to 6
Draw time	Time of day the sample was taken
Sample site	Other, brachial left/right, femoral left/right, radial left/right, finger left/right, heel left/right, scalp, umbilical cord, arterial line, PA catheter, bypass pump
Drawn by	ID of person drawing the sample
Pt. temp	Patient temperature
Room number	Patient room location
Accession number	Unique sample order number
Department (patient)	Patient department location
Department	Department responsible for sample analysis
Date of birth	Date patient was born
Weight	Units of lbs or kg
Birth weight	Units of oz, g, or kg
Gestational age	0-99 weeks
Height	Units of inches, cm, or meters
Measured O_2 sat	Measured oxygen saturation
Measured Hb	Measured hemoglobin concentration
$FO_2(I)$	Fraction of oxygen in dry inspired air
Baro	Barometric pressure
Default ctHb	Default ctHb value
Liter Flow	Liters-per-minute flow of oxygen to the patient
Order date	Date the sample was ordered
Physican	ID of person ordering the test
Gender	Male, female, unknown
Note	Free text, 100 characters
$pO_2(\bar{v})$	Oxygen saturation of hemoglobin in mixed venous blood
$sO_2(\bar{v})$	Oxygen saturation of hemoglobin in mixed venous blood
$\dot{V}O_2$	Oxygen consumption
$\dot{Q}_t$	Cardiac output
V(CO)	Volume of carbon monoxide, input value for measurement of *V*(B)
*F*COHb(1)	Used for determining blood volume
*F*COHb(2)	Used for determining blood volume

Consumables

Sensor cassette without CO-OX		Sensor cassette with CO-OX	
Sample volume	~ 70 µL	Sample volume	~ 105 µL
Cycle time	~ 100 sec	Cycle time	~ 140 sec
Shelf life	120 days	Shelf life	90 days
Storage temperature	5-25 °C/41-77 °F	Storage temperature	5-25 °C/41-77 °F

Model with and without CO-OX	SC80 25/30	SC80 50/30	SC80 100/30	SC80 200/30	SC80 300/30	SC80 300/15
Patient tests	25	50	100	200	300	300
In-use days	30	30	30	30	30	15
Automatic QC	QC^3 enabled	QC^3 enabled	QC^3 enabled	QC^3 enabled	QC^3 enabled	QC^3 enabled
	QC^3 not enabled	QC^3 not enabled	QC^3 not enabled	QC^3 not enabled	QC^3 not enabled	QC^3 not enabled

Solution Pack				
In-use life	Dependent on number of patient and QC samples and frequency of calibration. Up to 30 days maximum.			
Shelf life	120 days (without CO-OX), 90 days (with CO-OX)			
	Sol 1	Sol 2	Sol 3	Sol 4
Pouch volume	~ 440 mL	~ 220 mL	~ 220 mL	~ 220 mL
Fluidic cycles	230	110	110	110
Storage temperature	12-25 °C/54-77 °F			

Calibration data	Default interval	Interval options	Duration
Automatic: 1-point cal	With measurement	-	-
Automatic: 2-point cal as part of System Cycle	8 hours	Every 2, 4 or 8 hours or manual	4-min. System Cycle without CO-OX 7-min. System Cycle with CO-OX

General information

Hardware

Computer specifications

Microsoft Windows® XP Embedded operating system
System memory: 1 GB
400 mHz ETX form factor embedded CPU
EDO-RAM: 512 MB
CD R/RW drive

Display

Full visual graphic array (VGA)
Full active Thin Film Transistor (TFT)
800 x 600 resolution
Resistive touch screen

Printer

Optional custom header:
  25 characters max per line
Thermal sensitive
Paper width: 80mm ± 1.10

Interface

Barcode reader
Serial line RS232
RJ45 Ethernet port
2 USB 1.1
PS2 keyboard
PS2 mouse

Communication

HIS/LIS Communication
High-level protocols:
  ASTM (E1394-97)
  ASTM 6xx
  HL7 (Version 2.2/2.5)
  POCT1-A*
Low-level Serial protocols:
  ASTM (E1381-95)
Low-level Network protocols:
  TCP/IP

RADIANCE communication
  Interface via Ethernet adapter

Software

Correlation correction

Standard correlation mode:
  For whole blood; all parameters available
Other fluids mode:
  For all parameters except Hct
Hemodilution mode:
  For the Hct parameter only (not applicable on CO-OX)

Printer display options

Autoprint (on/off)
Select derived parameters
Five lines for custom header
Temperature corrected results
QC ranges with results
Select input variables
Measured/default ctHb
Reference ranges with results
Analyzer name (user-defined)

Data capacity

Patient results	500
System cycle results	500
Manual QC results	500
2-point cal. results	500
Event records	1500
Security records	1500
User IDs	Unlimited

Security and QA features

Automatic, on-board QC^3 quality control system
Seven programmable user-access levels
Unlimited User ID and access-level verification
Automatic lockout of parameter that fails QC or option to inactivate individual sensors for failed calibration
QC statistics and on-board Levey-Jennings plots
Air-in-sample detection
Mandatory input fields

Additional information

Dimensions

Width	22 cm	9 in
Height	40 cm	16 in
Depth	28 cm	11 in
Weight	8.5 kg	19 lbs

Other

Start-up time	After sensor cassette change: 8 min (20 min with CO-OX)
Operating environment	12-28 °C/54-82 °F
Altitude	2290 m/7513 feet above sea level
Power	100-240 VAC, 50/60 Hz, 130 VA
Thermostat control	37.0 °C ± 0.2 within 10 sec

Simpler, faster, better

Radiometer's products and services simplify and automate all phases of acute care testing, providing you with the speed and ease of use you want and the accuracy you need.

This is acute care testing truly made simpler, faster and better.

IVD

CE	Compliance with IVD Directive 98/79/EC when provided with the corresponding manuals.
EMI/EMC	As described in CISPR11/EN60601-1-2: 2001: Medical equipment Part 2: Collateral standard EMC Requirements and Tests, and EN55011 Class A.
EMC Emission	BS EN 61000-6-1:2001 Generic emission standard, Part 1: Residential, commercial and light industry, in compliance with FCC part 15, Subpart J
EMC Immunity	BS EN 61000-6-3:2001: Generic immunity standard, Part 1: Residential, commercial and light industry. BSI/EN 61000-6-3:2001
cETLus	UL/CSA IEC 60601-1-/EN60601-1: Medical Electrical equipment Part 1: General Requirements for Safety
Patents	One or more of the following patents and patent applications may apply: US Patent No.: US5246576, US5336388, US7338802, US7384523, US5338435, US 5342498, US5421981, US5611902, US5718816, US5777202, US5844200, US5858452, US5916425, US5980830, US6016683, US6022463, US6146510, US6193864 US Design Patent No.: USDE381749 European Patent No.: EP914609, EP1644725 German Patent No.: DE69733821 European Patent Application Nos.: EP961932, EP1558921, EP1644725 Japanese Patent No.: JP3873198 Japanese Patent Application Nos.: JP2000-512743, JP2007-513320, JP2006-504936 US and other patents pending. Approvals ETL, CSA. In compliance with IEC 61010-1
Languages	English, Japanese, German, Spanish, Italian, French, Danish, Dutch, Swedish, Portuguese, Czech, Russian, Chinese*, Hungarian, Estonian, Greek

* Not available at the time of release

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