

# ABL800

F L E X

## Specifications



SIMPLY DEDICATED

**RADIOMETER**  
**COPENHAGEN**



# Complete parameter flexibility

## ABL800 FLEX

Type	Parameters	Units	Measuring ranges	800*	805	810	815	820	825	830	835
pH	pH cH <sup>+</sup>	pH scale nmol/L	6.300-8.000 10.0-501	X	X	X	X	X	X	X	X
Blood gas	pCO <sub>2</sub>	mmHg kPa Torr	5.0-250 0.67-33.3 5.0-250	X	X	X	X	X	X	X	X
	pO <sub>2</sub>	mmHg kPa Torr	0.0-800 0.00-107 0.0-800	X	X	X	X	X	X	X	X
Electrolyte	cCl <sup>-</sup>	mmol/L meq/L	7-350 7-350		X		X		X		X
	cCa <sup>2+</sup>	mmol/L meq/L mg/dL	0.20-9.99 0.40-19.98 0.80-40.04		X		X		X		X
	cK <sup>+</sup>	mmol/L meq/L	0.5-25.0 0.5-25.0		X		X		X		X
	cNa <sup>+</sup>	mmol/L meq/L	7-350 7-350		X		X		X		X
Metabolite	cGlu	mmol/L mg/dL	0.0-60 0-1081		X		X		X		X
	cLac	mmol/L mg/dL meq/L	0.0-30 0-270 0.0-30		X		X		X		X
	ctBil	μmol/L mg/dL mg/L	0-1000 0.0-58.5 0-585							X	X
Oximetry	ctHb	g/dL mmol/L g/L	0.00-27.7 0.00-17.2 0.0-27.7			X	X	X	X	X	X
	sO <sub>2</sub>	% Fraction	0.0-100.0 0.000-1.000			X	X	X	X	X	X
	FO <sub>2</sub> Hb	% Fraction	0.0-100.0 0.000-1.000					X	X	X	X
	F <sub>CO</sub> Hb	% Fraction	0.0-100.0 0.000-1.000					X	X	X	X
	F <sub>Met</sub> Hb	% Fraction	0.0-100.0 0.000-1.000					X	X	X	X
	F <sub>HH</sub> Hb	% Fraction	0.0-100.0 0.000-1.000					X	X	X	X
	F <sub>HbF</sub>	% Fraction	0-100 0.00-1.00							X	X

\* Not available at the time of the release.

# Small sample volumes with high throughput

Analyzer	Mode	Sample volume (µL)	Measuring time (sec)	Cycle time (sec)	Samples/hr
ABL825	- FLEXMODE*	35-195	80-135	150-200	18-24
	- all parameters	195	80	150	24
	- all parameters, micro	95	135	200	18
	- pH + BG + Oxi, micro	85	80	145	25
	- pH + BG + Oxi, micro	55	100	170	21
	- Glu + Lac, micro	35	80	145	25
	- Oxi + micro	35	80	145	25

\* FLEXMODE provides prioritized parameter results from the sample volume detected during measurement.

Analyzer	Mode	Sample volume (ml)	Measuring time (sec)	Cycle time (sec)	Samples/hr
ABL825	Expired air	15	65	170	21

Other analyzer versions will have other measuring times/volumes.

# Extendability with unlimited input parameters

Type	Definition
Patient ID	Patient identification number
Patient height	The height of the patient
Patient department	Which department the patient is from
T	Patient temperature
Sample type	Arterial, venous, mixed venous, capillary, prof. test, cal. verification
Patient note	Notes about the patient or sample
Patient weight	The weight of the patient
Patient Accession No.	Specific sample number
Patient age	Date of birth
Patient sex	Male or female
Draw time	When the sample was taken
Date of birth	Patient date of birth
Sample site	Not specified, brachial left/right, femoral left/right, radial left/right, finger left/right, heel left/right, umbilical cord
Patient birth weight	The weight of the newborn
Patient gestational age	Period of intrauterine fetal development from conception to birth
Patient name	Name of the patient
Physician	Name of the physician
Operator	Name of the operator
Operator department	Department where the operator is from
p50(st)	Oxygen tension at 50 % saturation of blood at standard conditions for pH, pCO <sub>2</sub> , FCOHb, FMetHb, FHbF at 37 °C
RQ	Respiratory quotient
FO <sub>2</sub> (I)	Fraction of oxygen in dry inspired air
Q <sub>t</sub>	Cardiac output
VO <sub>2</sub>	Oxygen consumption
VCO	Volume of carbon monoxide, input value for measurement of V(B)
sO <sub>2</sub> (v)	Oxygen saturation of hemoglobin in mixed venous blood
pO <sub>2</sub> (v)	Oxygen tension of mixed venous blood
ctHb	Total hemoglobin concentration (if not measured)
FCOHb(1)	Used for determining blood volume
FCOHb(2)	Used for determining blood volume

Parameters can be set for mandatory input and are user-definable.



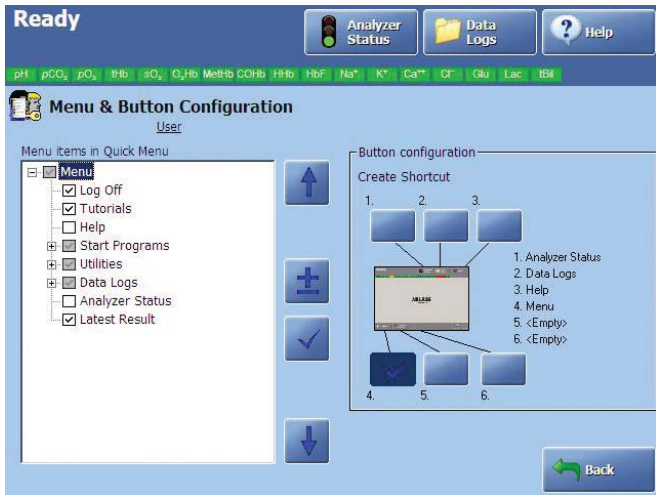
Flexible setup of sample modes to match the needs of any department.

# Derived parameters



Type	Definition
pH(T)	pH of blood at patient temperature
pCO <sub>2</sub> (T)	Carbon dioxide tension of blood at patient temperature
cHCO <sub>3</sub> <sup>-</sup> (P)	Concentration of hydrogen carbonate in plasma
cBase(B)	Concentration of titrable base of blood (actual base excess)
cBase(B,ox)	Actual base excess at 100 % oxygen saturation
cBase(Ecf)	Concentration of titrable base of extracellular fluid (standard base excess)
cBase(Ecf,ox)	Standard base excess at 100 % oxygen saturation
cHCO <sub>3</sub> <sup>-</sup> (P,st)	Concentration of hydrogen carbonate in plasma of standardized blood (standard bicarbonate)
cH <sup>+</sup>	Concentration of hydrogen ions in blood
cH <sup>+</sup> (T)	Concentration of hydrogen ions in blood at patient temperature
ctCO <sub>2</sub> (P)	Concentration of total carbon dioxide in plasma
ctCO <sub>2</sub> (B)	Concentration of total carbon dioxide of whole blood (CO <sub>2</sub> content)
pH(st)	pH of standardized blood (pCO <sub>2</sub> = 40 mmHg)
pO <sub>2</sub> (T)	Oxygen tension of blood at patient temperature
pO <sub>2</sub> (A)	Oxygen tension of alveolar air
pO <sub>2</sub> (A,T)	Oxygen tension of alveolar air at patient temperature
p50	Oxygen tension at 50 % saturation of blood
p50(T)	Oxygen tension at 50 % saturation of blood at patient temperature
p50(st)	Oxygen tension at 50 % saturation of blood at standard conditions for pH, pCO <sub>2</sub> , FCOHb, FMetHb, FHbF at 37 °C
pO <sub>2</sub> (A-a)	Difference of oxygen tension of alveolar air and arterial blood
pO <sub>2</sub> (A-a, T)	Difference of oxygen tension of alveolar air and arterial blood at patient temperature
pO <sub>2</sub> (a/A)	Ratio of oxygen tension of arterial blood and alveolar air
pO <sub>2</sub> (a/A, T)	Ratio of oxygen tension of arterial blood and alveolar air at patient temperature
pO <sub>2</sub> (a)/FO <sub>2</sub> (I)	Oxygen tension ratio of arterial blood to the fraction of oxygen in inspired air
pO <sub>2</sub> (a, T)/FO <sub>2</sub> (I)	Oxygen tension ratio of arterial blood at patient temperature to the fraction of oxygen in inspired air
cCa <sup>2+</sup> (pH=7.40)	Concentration of ionized calcium in plasma at pH 7.40
Anion Gap(K <sup>+</sup> )	Concentration difference of K <sup>+</sup> + Na <sup>+</sup> and Cl <sup>-</sup> + HCO <sub>3</sub> <sup>-</sup>
Anion Gap	Concentration difference of Na <sup>+</sup> and Cl <sup>-</sup> + HCO <sub>3</sub> <sup>-</sup>
DO <sub>2</sub>	Oxygen delivery
Hct	Fraction of the volume of erythrocytes in the volume of whole blood
pO <sub>2</sub> (x)	Oxygen extraction tension of arterial blood
pO <sub>2</sub> (x, T)	Oxygen extraction tension of arterial blood at patient temperature
ctO <sub>2</sub> (B)	Total oxygen concentration of blood (O <sub>2</sub> content)
ctO <sub>2</sub> (a-v)	Total oxygen concentration difference between arterial and mixed venous blood
BO <sub>2</sub>	Oxygen capacity of hemoglobin. The maximum concentration of oxygen bound to hemoglobin in blood, saturated so that all deoxyhemoglobin is converted to oxyhemoglobin
ctO <sub>2</sub> (x)	Extractable oxygen concentration of arterial blood
FShunt	Volume fraction of shunted venous blood in arterial blood
FShunt(T)	FShunt at patient temperature
RI	Respiratory Index
RI(T)	Respiratory Index at patient temperature
VO <sub>2</sub>	Oxygen consumption
mOsm	Plasma osmolarity
Qx	Oxygen compensation factor of arterial blood
Qt	Cardiac output
V(B)	Volume of blood
sO <sub>2</sub>	Saturation
FO <sub>2</sub> Hb	Fraction of oxyhemoglobin in total hemoglobin in blood

# Flexible setup ensures ease of use



Customized user-defined profiles including on-screen shortcut keys



Online assistance with audio-enhanced video tutorials, troubleshooting and help

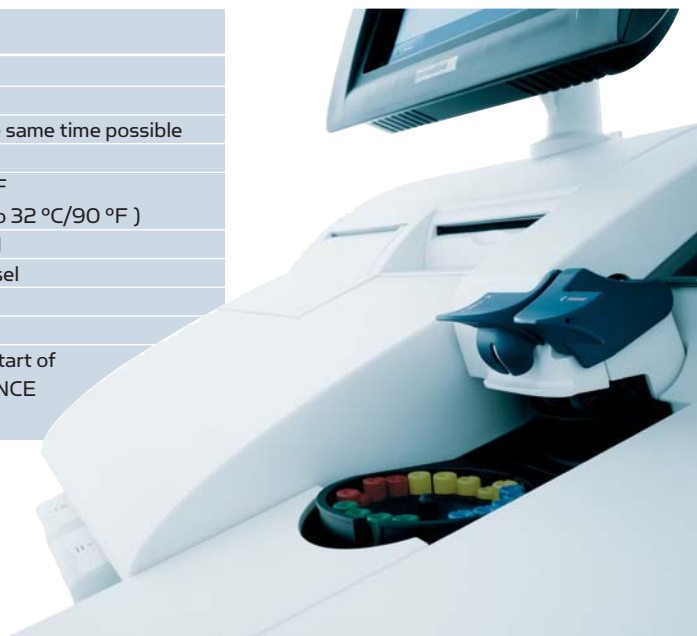
# Maximum uptime

Calibration data		
<b>Automatic:</b>	<b>Default interval:</b>	<b>Interval options:</b>
1-point cal.	4 hours	after measurement, 30 min, 1, 2, 4 hours
2-point cal.	8 hours	after measurement, 1, 2, 4, 8 hours
1-point gas cal.*	2 hours	30 min, 1, 2 hours
System alignment	24 hours	
Cleaning	24 hours	8, 24 hours
<b>Manual:</b>		
tHb calibration	3 months	never, 7 days, 1, 2, 3, 4, 6 months

\* US only

# Automatic quality control

AutoCheck technical specifications	
Number of ampoules in carousel:	0-20
Positioning of ampoules in carousel:	Random
Lot change:	2 lots of same level at the same time possible
Liquid volume in ampoule:	700 µL
Expiration of ampoules:	24 months at 25 °C/77 °F (including 15 days at up to 32 °C/90 °F )
Conditioning time (from room temperature):	15 min with filled carousel
Scanning time:	< 30 sec with filled carousel
Cycle time:	< 2 min 40 sec
Manual QC measurement possible:	Yes
Remote control:	Remote monitoring and start of measurement via RADIANCE



# Flexible IT solution

## Computer specifications

Intel Celeron Processor  
128 MB RAM  
Hard disk 40 GB  
CD/RW/DVD drive  
TFT 10.4" VGA color touch screen  
Dedicated 80386 CPU for wet section operations

## Software platform

Windows®XP Embedded  
Sybase®  
VxWorks®

## Interface

Integrated barcode reader  
Serial line RS232  
RJ45 Ethernet port  
Option ports for mouse and keyboard  
2 USB ports

## Data capacity

Patient results:	2000
Calibration results:	1000
QC results:	1500
System messages and service registrations:	5000

## Communication

Access to Local Area Network for backup, etc.:  
using PC network operating systems  
supporting Windows®XP

### Output protocols:

#### High-level protocols

- ABL700-compatible ASTM (E1394-91)
- ABL700-compatible HL7 (Version 2.2)
- ABL5xx-compatible ASTM (E1394-91)

#### Low-level protocols

- ASTM (E1381-95)
- Radiometer network protocol (TCP/IP only)
- Raw (serial only)

#### Transport layer

- TCP/IP
- RS232

RADIANCE interface via Ethernet adapter



Read/write CD and USB support for easy data backup. Data is automatically archived.



Easy and accurate data input with integrated barcode reader.



Bi-directional interface for LIS/HIS, MPI look-up and paperless reporting.



Monitor and control the ABL800 FLEX remotely with RADIANCE. Also interfaces to non-Radiometer analyzers.



## Dimensions

Width	70 cm	28 in		
Height	55 cm	22 in		
Depth	53 cm	21 in		
Weight	ABL835, ABL825, ABL815	33.9 kg	74.8 lbs	
	ABL830, ABL820, ABL810, ABL805	32.9 kg	72.6 lbs	
	ABL800	31.8 kg	70.2 lbs	
Warm-up time	Cold start: 25 min typical. Warm start: 5 min			
Ambient temperature	15-32 °C/59-90 °F			
Relative humidity	20-80 %			
Thermostatting	pH and blood gases, 37.0 °C ± 0.15 °C/98.6 °F ± 0.3 °F			
	Electrolytes and metabolites, 37.0 °C ± 0.25 °C/98.6 °F ± 0.5 °F			
Spectrometer	128-wavelength measurement			
Hemolyzer frequency	30 KHz intracuvette hemolysis			
Barometer	450-800 mmHg			
Power	100-240 VAC, 50-60 Hz, 250 VA			

## Additional information



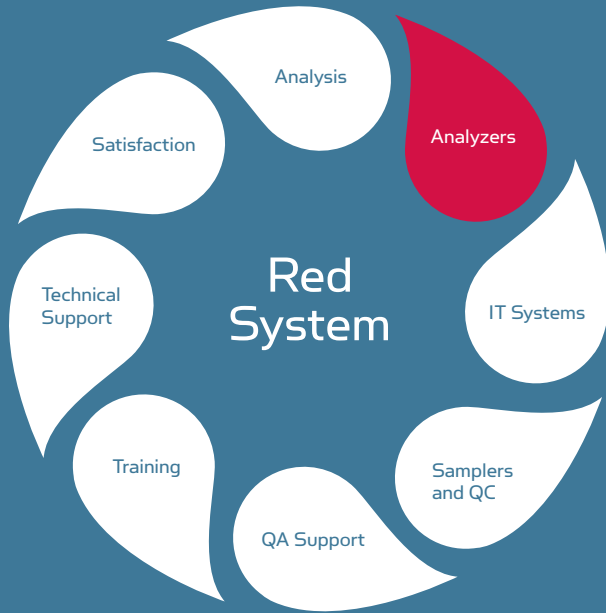
Indicates compliance with the IVD Directive 98/79/EC

EMC Emission	The equipment complies with the emission requirements for Class B equipment in EN 61326-1: Electrical equipment for measurement, control and laboratory use - EMC requirements part 1: General requirements
EMC Immunity	The equipment complies with the immunity requirements in EN 61326-1: Electrical equipment for measurement, control and laboratory use - EMC requirements part 1: General requirements
Patents	One or several of the following patents and patent applications may apply: US patents nos. US4780192; US4874501; US4997769; US6051389; US6099804; US6551480; US6689318 European patents nos. EP210417; EP212126; EP889951 Japanese patent nos. JP2070313; JP2972351; JP3285879; JP3369547 German patents nos. DE3673910; DE3686855 Austrian patent no. AT56271 Danish patents nos. DK151394; DK155764 European patent application nos. EP944731; EP1084398; EP1086366; EP1273920 US and other patents pending.
Approvals	CSA, UL. In compliance with IEC 61010-1 Installation Category II
Languages	English, German, Spanish, Italian, French, Japanese, Portuguese, Danish, Swedish, Norwegian, Dutch, Hungarian, Estonian, Russian, Polish and Lithuanian.



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