

ABL800 FLEX analyzer

Specifications



Measured parameters

Type	Parameter	Units	Measuring range
pH	pH**	pH scale	6.300–8.000
	cH ⁺	nmol/L	10.0–501
Blood gas	pCO ₂	mmHg	5.0–250
		kPa	0.67–33.3
		Torr	5.0–250
	pO ₂	mmHg	0.0–800
		kPa	0.00–107
		Torr	0.0–800
Electrolyte	cCl [−]	mmol/L	7–350
		meq/L	7–350
	cCa ²⁺	mmol/L	0.20–9.99
		meq/L	0.40–19.98
		mg/dL	0.80–40.04
	cK ⁺	mmol/L	0.5–25.0
		meq/L	0.5–25.0
	cNa ⁺	mmol/L	7–350
		meq/L	7–350
Metabolite	cGlu	mmol/L	0.0–60
		mg/dL	0–1081
	cLac	mmol/L	0.0–30
		mg/dL	0–270
		meq/L	0.0–30
	cCrea	μmol/L	10–1800
		mg/dL	0.11–20.4
	ctBil	μmol/L	0–1000
		mg/dL	0.0–58.5
		mg/L	0–585
Oximetry	ctHb	g/dL	0.00–27.7
		mmol/L	0.00–17.2
		g/L	0.0–277
	sO ₂	%	0.0–100.0
		Fraction	0.000–1.000
	FO ₂ Hb	%	0.0–100.0
		Fraction	0.000–1.000
	FCOHb	%	0.0–100.0
		Fraction	0.000–1.000
	FMetHb	%	0.0–100.0
		Fraction	0.000–1.000
	FHHb	%	0.0–100.0
		Fraction	0.000–1.000
	FHbF	%	0–100
		Fraction	0.00–1.00

** Also available as pH in pleural fluid.
The Measuring range for a parameter is the range within which the analyzer is physically capable of measuring.
The measuring range corresponds to the 'range of indication' as defined in the 'International vocabulary of basic and general terms in metrology' (VIM).

Derived parameters

pH(T)	cCa ²⁺ (pH=7.40)
cH ⁺ (T)	Anion Gap(K ⁺)
pCO ₂ (T)	Anion Gap
cHCO ₃ (P)	ΔO ₂
cBase(B)	Hct
cBase(B,ox)	pO ₂ (x)
cBase(Ecf)	pO ₂ (x,T)
cBase(Ecf,ox)	ctO ₂ (B)
cHCO ₃ (P,st)	ctO ₂ (a-v)
ctCO ₂ (P)	BO ₂
ctCO ₂ (B)	ctO ₂ (x)
pH(st)	FShunt
pO ₂ (T)	FShunt(T)
pO ₂ (A)	RI
pO ₂ (A,T)	RI(T)
p50	VO ₂
p50(T)	mOsm
p50(st)	Qx
pO ₂ (A-a)	Q _t
pO ₂ (A-a,T)	V(B)
pO ₂ (a/A)	sO ₂
pO ₂ (a/A,T)	FO ₂ Hb
pO ₂ (a)/FO ₂ (I)	FHHb
pO ₂ (a,T)/FO ₂ (I)	GFR, if AA
VCO ₂ /V(dry air)	GFR, if non AA

Parameters overview

	Blood gases	Electrolytes	Metabolites	Oximetry				Metabolite
	pO ₂ pCO ₂ pH	Na K Ca Cl	Lac Glu	tHb sO ₂ O ₂ Hb COHb MetHb HHb	HbF*	Bil*	sO ₂ tHb*	Crea
ABL800 Basic	X	X	X				X	
ABL805	X	X	X					
ABL810	X						X	
ABL810 BG only	X							
ABL815	X	X	X				X	
ABL817	X	X	X				X	X
ABL820	X			X				
ABL825	X	X	X	X				
ABL827	X	X	X	X				X
ABL830	X			X	X	X		
ABL835	X	X	X	X	X	X		
ABL837	X	X	X	X	X	X		X

* Measured by the spectrometer

Sources: DC-058427 - ABL800 software requirement specification (LLRS), (Rev. 14)
994-909 ABL800 FLEX OM SW 3.18 Chapter 4, 2-6 version 201806K

Measuring system

Analyzer ABL825 ABL837		Mode	Sample volume	Measuring time (sec)	Cycle time (sec)	Throughput per hour
x		FLEXMODE (C)	35 – 195 µL	80 – 135	150 – 200	18 – 24
x		all parameters (S)	195 µL	80	150	24
x		all parameters, micro (S/C)	95 µL	135	200	18
	x	all parameters (S)	250 µL	100	170	21
	x	all parameters, micro (C)	125 µL	150	225	16
x	x	pH + BG + Oxi (S)	85 µL	80	170	21
x	x	pH + BG, micro (C)	55 µL	100	170	21
x	x	Glu + Lac, micro (C)	35 µL	80	145	25
x	x	Oxi, micro (C)	35 µL	80	145	25
x	x	pH in pleural fluid (S)	85 µL	80	170	21
x	x	Expired air (S)	15 mL	80	170	21

Other analyzer versions will have other measuring times/volumes. S = Syringe C = Capillary

Hardware

Computer specifications

Intel® Athom™ Baytrail E3815
2 GB RAM
SSD
10.4" VGA captive color touch screen with USB

Interface

Integrated barcode reader
Serial line RS232
RJ45 Ethernet port
3 USB ports

FLEXQ

Module that allows queuing of samplers on the ABL800 FLEX.
Slots for samplers 3
Sampler type *safe*PICO with *safe*TIPCAP
Sampler identification Integrated barcode scanner
Sample mixing time 7 seconds

Software

Software platform

Sybase software
VxWorks software

Data capacity

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

Additional information

Dimensions

Width	71 cm	28 in
Height	57 cm	22 in
Depth	53 cm	21 in
Weight	37 kg	81 lbs

Calibration data

Automatic	Default interval	Interval options
1-point cal. hours	4 hours	after measurement, 30 min, 1, 2, 4
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	8 hours	8, 24 hours
Manual		
tHb calibration	3 months	never, 7 days, 1, 2, 3, 4, 6 months

* US only

Communication

Access to Local Area Network
Output protocols:
High-level protocols
POCT 1A
ASTM
HL7 (Version 2.2)
Low-level protocols
ASTM
Raw (serial only)
Transport layer
TCP/IP
RS232
Radiometer IT solution via Ethernet port

Other

Warm-up time	Cold start: 25 min typical. Warm start: 5 min
Ambient temperature	15 – 32 °C / 59 – 90 °F
Relative humidity	20 – 80 %
Thermostating	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
Spectrophotometer	for measuring ctHb, sO ₂ , FHHb, FO ₂ Hb, FCOHb, FMetHb, FHbF, ctBil on 128 wavelengths
Hemolyzer frequency	30 kHz intracuvette hemolysis
Barometer	450 – 800 mmHg
Power	100 – 240 V, 50/60 Hz, 270 VA

Data subject to change without notice.

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