

CVC 123

5 Levels

CVC 123 Calibration Verification Controls

LOT

Set: 212319
Level 1: 14116
Level 2: 11522
Level 3: 11621
Level 4: 11722
Level 5: 14217



Exp.: Set: 2014-11
Level 1: 2014-11
Level 2: 2014-11
Level 3: 2014-11
Level 4: 2014-11
Level 5: 2014-11

REF

CVC 123

IVDFor *In Vitro*
Diagnostic
Use

INTENDED USE

RNA Medical® Brand **CVC 123 Calibration Verification Controls** are assayed materials used for confirming the calibration and linearity of blood gas, electrolyte, and metabolite instrumentation for the analytes and analyzers listed on the Expected Values Chart.

PRODUCT DESCRIPTION

CVC 123 is provided in five (5) distinct levels of pH, $p\text{CO}_2$, $p\text{O}_2$, Na⁺, K⁺, Cl⁻, Ca⁺⁺, Mg⁺⁺, glucose, and lactate covering the significant range of instrument performance. It is packaged in sealed glass ampuls, each containing 2.5 mL of solution. Ampuls are packaged in kits containing four (4) ampuls of each level.

Active Ingredients:

CVC 123 is a buffered solution containing electrolytes, glucose, and lactate. It has been equilibrated with specific levels of CO₂, O₂, and N₂. This product contains no preservatives and no human or biological materials.

STORAGE

The expiration date stated on the CVC 123 packaging is for product stored at 2-8 °C. The product may also be stored at room temperature (up to 25 °C) for nine (9) months, provided the labeled expiration date is not exceeded. Avoid exposure to freezing and temperatures greater than 30 °C.

DIRECTIONS FOR USE

CVC 123 should be brought to a temperature of 20-25 °C before use (see instructions regarding Expected Values). Allow at least four (4) hours for the ampuls to equilibrate to this temperature prior to testing.

It is best to run calibration verification materials in the same manner as patient samples, however, please refer to the Expected Values Chart enclosed and/or any specific instructions for your analyzer regarding the use of aqueous control materials.

For Roche OMNI 1-9, Omni-S and Cobas b 221 Analyzers: Always test CVC 123 as an aqueous material in the Sample or QC Mode.

Follow the procedures listed below:

1. Perform a two-point calibration on your instrument before beginning the calibration verification procedure.
2. Beginning with Level 1, hold the ampul at the top and bottom (with forefinger and thumb) and shake 15 to 20 times (about 10 seconds) to mix the solution. Tap the ampul to restore the liquid to the bottom of the ampul.
3. Open the ampul by snapping off the tip at the score. Use the Snapper® provided to protect fingers from cuts.
4. Immediately introduce the liquid from the ampul to the analyzer. Use direct aspiration, syringe transfer, or capillary mode techniques.
5. Record the results on the Data Collection and Linearity Worksheet provided for each analyte.
6. Repeat steps 2 through 5 for the remaining ampuls of Level 1 until three (3) replicates are completed (a fourth ampul of each level is provided in case of accidental breakage or obvious sampling error). Test Levels 2, 3, 4, and 5 the same way. Record all values on the worksheets.
7. Calculate the mean value for each test analyte and compare your mean to the range on the Expected Values Chart. If your mean is within the range, circle **Y** at the question **OK?**. If your mean is outside the range, circle **N** and take corrective action.
8. To graph the linearity of your results:
 - a) Using the graph area provided, plot the Test Value (mean) against the Expected Value.
 - b) Connect the plotted points to visualize linearity.

Note: Steps 7 and 8 may be performed on-line as a feature of PeerQC described below.

EXPECTED VALUES

The values for each analyte on the enclosed Expected Values Chart are based on multiple determinations performed on randomly selected samples from each lot. The listing for each instrument represents the expected range and mean value for this range for ampuls that are at 25 °C when tested. (Note: $p\text{O}_2$ values will vary inversely by about one percent (1%) per degree Celsius that the temperature of the ampul varies from 25 °C.)

The Expected Values are provided as a guide in evaluating analyzer performance. Since instrument design and operating conditions may vary, each laboratory should establish its own acceptance criteria.

STATISTICAL SUPPORT

RNA Medical PeerQC®, available at www.RNAMedical.com, features web-based graphing and reporting for its Calibration Verification Controls and is available at no charge to RNA Medical customers. The graphing steps outlined above may be performed on-line as a feature of this service. Please contact RNA Medical or visit our website for information about utilizing PeerQC for this product.

LIMITATIONS

1. CVC 123 is sensitive to many instrument related factors that would affect analytical results. Because it is not a blood-based material, it may not detect certain malfunctions that would affect the testing of blood.
2. This product is intended for use in evaluating the performance of laboratory instruments. It is not for use as a calibration standard and its use should not replace other aspects of a complete quality control program.

RNA Medical is a registered trademark and PeerQC is a registered service mark of Bionostics, Inc.

CVC 123 Calibration Verification Controls

Level 1

LOT 14116

Exp.: 2014-11

Expected Values Chart

Analyzers	pH		pCO ₂ mmHg		pO ₂ mmHg		Na ⁺ mmol/L		K ⁺ mmol/L		Cl ⁻ mmol/L		Ca ⁺⁺ mmol/L		Mg ⁺⁺ mmol/L		Glucose mg/dL		Lactate mmol/L		
	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	
EPOCAL																					
EPOC <i>Contact Epocal Technical Support or the Epocal website (www.epocal.com) for assigned values.</i>																					
IL																					
1600 Series 6.85 6.82 - 6.88 94 82 - 106 26 11 - 41 87 82 - 92 12.2 9.7 - 14.7 2.87 2.37 - 3.37																					
Synthesis Series 6.86 6.83 - 6.89 90 78 - 102 19 4 - 34 85 80 - 90 11.8 9.3 - 14.3 67 62 - 72 2.77 2.27 - 3.27 398 348 - 448																					
GEM Premier 3000 Series ORL ² 92 80 - 104 39 24 - 54 ORL ² 11.7 9.2 - 14.2 2.82 2.32 - 3.32 DNA ³ DNA ³																					
GEM Premier 4000 6.84 6.81 - 6.87 86 74 - 98 48 33 - 63 ORL ² 11.9 9.4 - 14.4 65 60 - 70 3.27 2.77 - 3.77 456 406 - 506 15.2 11.7 - 18.7																					
ITC																					
IRMA and IRMA TRUpoint <i>Contact ITC Technical Support or the ITC website (www.ITCMED.com) for assigned values.</i>																					
Medica																					
EasyBloodGas ORL ² ORL ² - ORL ² 93 81 - 105 22 10 - 34																					
EasyStat 6.83 6.80 - 6.86 95 83 - 107 28 16 - 40 85 80 - 90 11.6 9.6 - 13.6 68 63 - 73 3.01 2.61 - 3.41																					
Nova																					
CCX 6.90 6.87 - 6.93 83 71 - 95 27 12 - 42 88 83 - 93 12.0 9.5 - 14.5 73 68 - 78 DNA ³ DNA ³ 458 408 - 508 16.6 13.1 - 20.1																					
pHOx 6.89 6.86 - 6.92 83 71 - 95 30 15 - 45																					
pHOx Plus 6.90 6.87 - 6.93 82 70 - 94 24 9 - 39 91 86 - 96 12.0 9.5 - 14.5 69 64 - 74 DNA ³ DNA ³ - DNA ³ 438 388 - 488 DNA ³ DNA ³ - DNA ³																					
Stat Profile 1-10 6.90 6.87 - 6.93 89 77 - 101 24 9 - 39 88 83 - 93 11.7 9.2 - 14.2 70 65 - 75 2.81 2.31 - 3.31 448 398 - 498 15.7 12.2 - 19.2																					
Stat Profile Ultra 6.91 6.88 - 6.94 86 74 - 98 22 7 - 37 88 83 - 93 11.9 9.4 - 14.4 70 65 - 75 2.81 2.31 - 3.31 DNA ³ 458 408 - 508 15.7 12.2 - 19.2																					
OPTI Medical																					
OPTI CCA 6.92 6.87 - 6.97 90 78 - 102 57 42 - 72 ORL ² ORL ² 78 73 - 83 ORL ² ORL ²																					
OPTI R 6.91 6.86 - 6.96 90 78 - 102 72 57 - 87 ORL ² ORL ² - ORL ² ORL ² ORL ² - ORL ² ORL ² ORL ²																					
OPTI LION DNA ³ DNA ³ - DNA ³ DNA ³ DNA ³ - DNA ³ DNA ³ DNA ³ - DNA ³ DNA ³ DNA ³ - DNA ³ DNA ³ DNA ³ - DNA ³																					
Radiometer																					
ABL 5 6.85 6.82 - 6.88 91 79 - 103 22 7 - 37																					
ABL 50, 500 Series 6.85 6.82 - 6.88 90 78 - 102 37 22 - 52 87 82 - 92 11.3 8.8 - 13.8 65 60 - 70 2.98 2.48 - 3.48																					
ABL 600 Series 6.85 6.82 - 6.88 90 78 - 102 37 22 - 52 87 82 - 92 11.3 8.8 - 13.8 65 60 - 70 2.98 2.48 - 3.48 418 368 - 468 15.0 11.5 - 18.5																					
ABL 700 Series 6.85 6.82 - 6.88 90 78 - 102 40 25 - 55 86 81 - 91 11.3 8.8 - 13.8 65 60 - 70 3.02 2.52 - 3.52 428 378 - 478 15.0 11.5 - 18.5																					
ABL 77, 80 Series DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³																					
ABL 800 Series 6.85 6.82 - 6.88 88 76 - 100 44 29 - 59 85 80 - 90 11.3 8.8 - 13.8 64 59 - 69 2.97 2.47 - 3.47 428 378 - 478 15.5 12.0 - 19.0																					
NPT 7 DNA ³ DNA ³ DNA ³																					
Roche																					
AVL Compact Series 6.84 6.81 - 6.87 90 78 - 102 37 22 - 52																					
Cobas b 221 6.90 6.87 - 6.93 91 79 - 103 6 0 - 21 DNA ³ DNA ³ DNA ³ DNA ³																					
OMNI 1-9 ¹ 6.89 6.86 - 6.92 89 77 - 101 22 7 - 37 87 82 - 92 11.5 9.0 - 14.0 73 68 - 78 2.81 2.31 - 3.31 428 378 - 478 16.3 12.8 - 19.8																					
Siemens (Bayer)																					
238 6.85 6.82 - 6.88 101 89 - 113 36 21 - 51																					
248 6.86 6.83 - 6.89 101 89 - 113 22 7 - 37																					
400 Series 6.79 6.75 - 6.83 103 89 - 117 44 28 - 60 ORL ² 11.0 8.5 - 13.5 ORL ² 2.82 2.32 - 3.32 463 413 - 513																					
800 Series 6.86 6.83 - 6.89 94 82 - 106 26 11 - 41 83 78 - 88 11.5 9.0 - 14.0 66 61 - 71 2.84 2.34 - 3.34 438 388 - 488 14.4 10.9 - 17.9																					
600 Series 6.85 6.82 - 6.88 85 80 - 90 ORL ² 70 65 - 75 3.12 2.62 - 3.62																					
1200 Series 6.86 6.83 - 6.89 95 83 - 107 33 18 - 48 85 80 - 90 11.7 9.2 - 14.2 71 66 - 76 2.82 2.32 - 3.32 418 368 - 468 15.5 12.0 - 19.0																					
YSI																					
2300 Stat Plus 438 388 - 488 16.5 13.0 - 20.0																					

FOOTNOTES: 1. Always Test as an Aqueous Material in the Sample or QC Mode
 2. ORL - Outside (Analyzer's) Reportable Limits
 3. DNA - Data Not Available at Time of Printing

CVC 123 Calibration Verification Controls

Level 2

LOT 11522

Exp.: 2014-11

Expected Values Chart

Analyzers	pH		pCO ₂ mmHg		pO ₂ mmHg		Na ⁺ mmol/L		K ⁺ mmol/L		Cl ⁻ mmol/L		Ca ⁺⁺ mmol/L		Mg ⁺⁺ mmol/L		Glucose mg/dL		Lactate mmol/L		
	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	
EPOCAL																					
EPOC		Contact Epocal Technical Support or the Epocal website (www.epocal.com) for assigned values.																			
IL																					
1600 Series		7.14	7.11 - 7.17	70	63 - 77	60	51 - 69	112	107 - 117	1.9	1.4 - 2.4			1.38	1.23 - 1.53						
Synthesis Series		7.15	7.12 - 7.18	69	62 - 76	62	52 - 72	113	108 - 118	2.0	1.5 - 2.5	80	75 - 85	1.36	1.21 - 1.51			76	66 - 86		
GEM Premier 3000 Series		7.13	7.09 - 7.17	72	63 - 81	72	60 - 84	113	108 - 118	1.7	1.2 - 2.2			1.41	1.26 - 1.56			DNA ³		DNA ³	
GEM Premier 4000		7.12	7.08 - 7.16	69	60 - 78	76	64 - 88	111	106 - 116	1.9	1.4 - 2.4	79	74 - 84	1.43	1.28 - 1.58			71	61 - 81	0.5	0.2 - 0.8
ITC																					
IRMA and IRMA TRUpoint		Contact ITC Technical Support or the ITC website (www.ITCMED.com) for assigned values.																			
Medica																					
EasyBloodGas		7.13	7.10 - 7.16	73	65 - 81	65	55 - 75														
EasyStat		7.13	7.10 - 7.16	73	65 - 81	65	55 - 75	112	107 - 117	1.7	1.2 - 2.2	76	71 - 81	1.41	1.26 - 1.56						
Nova																					
CCX		7.17	7.14 - 7.20	64	57 - 71	66	57 - 75	112	107 - 117	1.9	1.4 - 2.4	83	78 - 88	1.46	1.31 - 1.61	1.07	0.92 - 1.22	78	68 - 88	0.5	0.2 - 0.8
pHOx		7.17	7.14 - 7.20	66	59 - 73	66	57 - 75														
pHOx Plus		7.17	7.14 - 7.20	67	60 - 74	62	53 - 71	114	109 - 119	1.9	1.4 - 2.4	75	70 - 80	1.41	1.26 - 1.56			82	72 - 92	DNA ³	DNA ³ - DNA ³
Stat Profile 1-10		7.18	7.15 - 7.21	70	63 - 77	65	56 - 74	115	110 - 120	2.0	1.5 - 2.5	79	74 - 84	1.41	1.26 - 1.56			78	68 - 88	0.7	0.4 - 1.0
Stat Profile Ultra		7.20	7.17 - 7.23	68	61 - 75	62	52 - 72	115	110 - 120	2.0	1.5 - 2.5	79	74 - 84	1.43	1.28 - 1.58	1.02	0.87 - 1.17	82	72 - 92	0.6	0.3 - 0.9
OPTI Medical																					
OPTI CCA		7.19	7.14 - 7.24	72	64 - 80	80	65 - 95	117	109 - 125	1.8	1.3 - 2.3	91	86 - 96	1.28	1.13 - 1.43			83	67 - 99		
OPTI R		7.19	7.14 - 7.24	69	61 - 77	88	73 - 103	112	104 - 120	1.9	1.4 - 2.4			1.26	1.11 - 1.41						
OPTI LION		DNA ³	DNA ³ - DNA ³					DNA ³	DNA ³ - DNA ³	DNA ³	DNA ³ - DNA ³	DNA ³	DNA ³ - DNA ³	DNA ³	DNA ³ - DNA ³						
Radiometer																					
ABL 5		7.14	7.11 - 7.17	71	64 - 78	60	50 - 70														
ABL 50, 500 Series		7.14	7.11 - 7.17	70	63 - 77	71	61 - 81	115	110 - 120	1.9	1.4 - 2.4	74	69 - 79	1.48	1.33 - 1.63						
ABL 600 Series		7.14	7.11 - 7.17	70	63 - 77	71	61 - 81	115	110 - 120	1.9	1.4 - 2.4	74	69 - 79	1.51	1.36 - 1.66			70	60 - 80	0.6	0.3 - 0.9
ABL 700 Series		7.13	7.10 - 7.16	70	63 - 77	74	64 - 84	115	110 - 120	2.0	1.5 - 2.5	77	72 - 82	1.49	1.34 - 1.64			74	64 - 84	0.6	0.3 - 0.9
ABL 77, 80 Series		7.14	7.09 - 7.19	73	66 - 80	57	47 - 67	115	110 - 120	1.9	1.4 - 2.4	65	60 - 70	1.37	1.22 - 1.52			74	64 - 84		
ABL 800 Series		7.13	7.10 - 7.16	70	63 - 77	76	66 - 86	114	109 - 119	1.9	1.4 - 2.4	77	72 - 82	1.49	1.34 - 1.64			75	65 - 85	0.6	0.3 - 0.9
NPT 7		DNA ³		DNA ³		DNA ³															
Roche																					
AVL Compact Series		7.12	7.09 - 7.15	76	68 - 84	79	69 - 89														
Cobas b 221		7.15	7.12 - 7.18	74	66 - 82	49	34 - 64	DNA ³		DNA ³		DNA ³		DNA ³				DNA ³		DNA ³	
OMNI 1-9 ¹		7.15	7.12 - 7.18	73	65 - 81	63	48 - 78	115	110 - 120	1.9	1.4 - 2.4	85	80 - 90	1.42	1.27 - 1.57			78	63 - 93	0.6	0.3 - 0.9
Siemens (Bayer)																					
238		7.15	7.12 - 7.18	72	64 - 80	71	61 - 81														
248		7.15	7.12 - 7.18	69	61 - 77	53	43 - 63														
400 Series		7.11	7.07 - 7.15	76	66 - 86	77	65 - 89	109	104 - 114	1.8	1.3 - 2.3	76	70 - 82	1.39	1.23 - 1.55			75	65 - 85		
800 Series		7.16	7.13 - 7.19	71	64 - 78	60	50 - 70	110	105 - 115	1.7	1.2 - 2.2	78	73 - 83	1.39	1.24 - 1.54			76	66 - 86	0.6	0.3 - 0.9
600 Series		7.16	7.13 - 7.19					114	109 - 119	1.9	1.4 - 2.4	81	76 - 86	1.46	1.31 - 1.61						
1200 Series		7.15	7.12 - 7.18	71	64 - 78	68	58 - 78	109	104 - 114	1.7	1.2 - 2.2	78	73 - 83	1.36	1.21 - 1.51			74	64 - 84	0.7	0.4 - 1.0
YSI																					
2300 Stat Plus																		78	68 - 88	0.7	0.4 - 1.0

FOOTNOTES: 1. Always Test as an Aqueous Material in the Sample or QC Mode
 2. ORL - Outside (Analyzer's) Reportable Limits
 3. DNA - Data Not Available at Time of Printing

CVC 123 Calibration Verification Controls

Level 3

LOT 11621

Exp.: 2014-11

Expected Values Chart

Analyzers	pH		pCO ₂ mmHg		pO ₂ mmHg		Na ⁺ mmol/L		K ⁺ mmol/L		Cl ⁻ mmol/L		Ca ⁺⁺ mmol/L		Mg ⁺⁺ mmol/L		Glucose mg/dL		Lactate mmol/L		
	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	
EPOCAL																					
EPOC		Contact Epocal Technical Support or the Epocal website (www.epocal.com) for assigned values.																			
IL																					
1600 Series		7.40	7.37 - 7.43	43	38 - 48	100	91 - 109	131	126 - 136	4.2	3.7 - 4.7			1.06	0.96 - 1.16						
Synthesis Series		7.41	7.38 - 7.44	43	38 - 48	103	93 - 113	132	127 - 137	4.4	3.9 - 4.9	98	93 - 103	1.07	0.97 - 1.17			200	180 - 220		
GEM Premier 3000 Series		7.43	7.39 - 7.47	42	35 - 49	111	99 - 123	134	129 - 139	4.2	3.7 - 4.7			1.11	1.01 - 1.21			DNA ³		DNA ³	
GEM Premier 4000		7.42	7.38 - 7.46	42	35 - 49	115	103 - 127	131	126 - 136	4.7	4.2 - 5.2	98	93 - 103	1.14	1.04 - 1.24			192	172 - 212	2.2	1.7 - 2.7
ITC																					
IRMA and IRMA TRUpoint		Contact ITC Technical Support or the ITC website (www.ITCMED.com) for assigned values.																			
Medica																					
EasyBloodGas		7.40	7.37 - 7.43	44	38 - 50	107	97 - 117														
EasyStat		7.40	7.37 - 7.43	45	39 - 51	105	95 - 115	132	127 - 137	4.0	3.5 - 4.5	96	91 - 101	1.06	0.96 - 1.16						
Nova																					
CCX		7.43	7.40 - 7.46	41	36 - 46	109	100 - 118	130	125 - 135	4.3	3.8 - 4.8	99	94 - 104	1.09	0.99 - 1.19	0.54	0.44 - 0.64	202	182 - 222	2.7	2.2 - 3.2
pHOx		7.45	7.42 - 7.48	42	37 - 47	107	98 - 116														
pHOx Plus		7.45	7.42 - 7.48	41	36 - 46	107	98 - 116	133	128 - 138	4.3	3.8 - 4.8	94	89 - 99	1.09	0.99 - 1.19			211	191 - 231	DNA ³	DNA ³ - DNA ³
Stat Profile 1-10		7.42	7.39 - 7.45	42	37 - 47	103	94 - 112	133	128 - 138	4.4	3.9 - 4.9	97	92 - 102	1.08	0.98 - 1.18			204	184 - 224	2.7	2.2 - 3.2
Stat Profile Ultra		7.45	7.42 - 7.48	43	38 - 48	102	92 - 112	134	129 - 139	4.4	3.9 - 4.9	97	92 - 102	1.08	0.98 - 1.18	0.60	0.50 - 0.70	208	188 - 228	2.8	2.3 - 3.3
OPTI Medical																					
OPTI CCA		7.43	7.38 - 7.48	42	37 - 47	107	90 - 124	139	130 - 148	4.5	4.0 - 5.0	103	98 - 108	1.14	1.04 - 1.24			221	198 - 244		
OPTI R		7.43	7.38 - 7.48	40	35 - 45	112	95 - 129	139	130 - 148	4.6	4.1 - 5.1			1.14	1.04 - 1.24						
OPTI LION		DNA ³	DNA ³ - DNA ³					DNA ³	DNA ³ - DNA ³	DNA ³	DNA ³ - DNA ³	DNA ³	DNA ³ - DNA ³	DNA ³	DNA ³ - DNA ³						
Radiometer																					
ABL 5		7.40	7.37 - 7.43	42	37 - 47	104	95 - 113														
ABL 50, 500 Series		7.40	7.37 - 7.43	44	39 - 49	109	100 - 118	131	126 - 136	4.3	3.8 - 4.8	93	88 - 98	1.11	1.01 - 1.21						
ABL 600 Series		7.40	7.37 - 7.43	44	39 - 49	108	99 - 117	131	126 - 136	4.3	3.8 - 4.8	93	88 - 98	1.11	1.01 - 1.21			199	179 - 219	2.5	2.0 - 3.0
ABL 700 Series		7.40	7.37 - 7.43	42	37 - 47	110	100 - 120	133	128 - 138	4.3	3.8 - 4.8	94	89 - 99	1.13	1.03 - 1.23			193	173 - 213	2.4	1.9 - 2.9
ABL 77, 80 Series		7.40	7.35 - 7.45	43	38 - 48	98	88 - 108	133	128 - 138	4.2	3.7 - 4.7	93	88 - 98	1.09	0.99 - 1.19			193	173 - 213		
ABL 800 Series		7.40	7.37 - 7.43	42	37 - 47	113	103 - 123	132	127 - 137	4.3	3.8 - 4.8	94	89 - 99	1.13	1.03 - 1.23			194	174 - 214	2.4	1.9 - 2.9
NPT 7		DNA ³		DNA ³		DNA ³															
Roche																					
AVL Compact Series		7.38	7.35 - 7.41	46	41 - 51	114	104 - 124														
Cobas b 221		7.40	7.37 - 7.43	45	40 - 50	98	86 - 110	DNA ³		DNA ³		DNA ³		DNA ³				DNA ³		DNA ³	
OMNI 1-9 ¹		7.40	7.37 - 7.43	45	40 - 50	104	92 - 116	134	129 - 139	4.4	3.9 - 4.9	100	95 - 105	1.09	0.99 - 1.19			194	174 - 214	2.8	2.3 - 3.3
Siemens (Bayer)																					
238		7.41	7.38 - 7.44	44	38 - 50	103	93 - 113														
248		7.41	7.38 - 7.44	44	38 - 50	94	84 - 104														
400 Series		7.40	7.36 - 7.44	45	39 - 51	110	98 - 122	130	125 - 135	4.2	3.7 - 4.7	96	90 - 102	1.06	0.94 - 1.18			201	181 - 221		
800 Series		7.43	7.40 - 7.46	44	39 - 49	101	91 - 111	130	125 - 135	4.3	3.8 - 4.8	96	91 - 101	1.02	0.92 - 1.12			201	181 - 221	2.7	2.2 - 3.2
600 Series		7.42	7.39 - 7.45					131	126 - 136	4.2	3.7 - 4.7	97	92 - 102	1.12	1.02 - 1.22						
1200 Series		7.43	7.40 - 7.46	43	38 - 48	106	96 - 116	128	123 - 133	4.1	3.6 - 4.6	95	90 - 100	1.01	0.91 - 1.11			193	173 - 213	2.6	2.1 - 3.1
YSI																					
2300 Stat Plus																		202	182 - 222	2.8	2.3 - 3.3

FOOTNOTES: 1. Always Test as an Aqueous Material in the Sample or QC Mode
 2. ORL - Outside (Analyzer's) Reportable Limits
 3. DNA - Data Not Available at Time of Printing

CVC 123 Calibration Verification Controls

Level 4

LOT 11722

Exp.: 2014-11

Expected Values Chart

Analyzers	pH		pCO ₂ mmHg		pO ₂ mmHg		Na ⁺ mmol/L		K ⁺ mmol/L		Cl ⁻ mmol/L		Ca ⁺⁺ mmol/L		Mg ⁺⁺ mmol/L		Glucose mg/dL		Lactate mmol/L		
	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	
EPOCAL																					
EPOC		Contact Epocal Technical Support or the Epocal website (www.epocal.com) for assigned values.																			
IL																					
1600 Series		7.57	7.54 - 7.60	23	19 - 27	150	140 - 160	155	150 - 160	6.0	5.5 - 6.5			0.53	0.43 - 0.63						
Synthesis Series		7.58	7.55 - 7.61	25	21 - 29	154	144 - 164	156	151 - 161	6.3	5.8 - 6.8	121	116 - 126	0.52	0.42 - 0.62			293	263 - 323		
GEM Premier 3000 Series		7.64	7.60 - 7.68	23	17 - 29	157	145 - 169	161	156 - 166	6.2	5.7 - 6.7			0.49	0.39 - 0.59			DNA ³		DNA ³	
GEM Premier 4000		7.63	7.59 - 7.67	23	17 - 29	160	148 - 172	159	154 - 164	6.3	5.8 - 6.8	124	119 - 129	0.50	0.40 - 0.60			278	248 - 308	6.0	4.5 - 7.5
ITC																					
IRMA and IRMA TRUpoint		Contact ITC Technical Support or the ITC website (www.ITCMED.com) for assigned values.																			
Medica																					
EasyBloodGas		7.57	7.54 - 7.60	24	19 - 29	154	143 - 165														
EasyStat		7.57	7.54 - 7.60	24	19 - 29	153	142 - 164	157	152 - 162	5.8	5.3 - 6.3	119	114 - 124	0.60	0.50 - 0.70						
Nova																					
CCX		7.61	7.58 - 7.64	24	20 - 28	157	147 - 167	157	152 - 162	6.5	6.0 - 7.0	125	120 - 130	0.56	0.46 - 0.66	0.32	0.24 - 0.40	296	266 - 326	7.5	6.0 - 9.0
pHOx		7.62	7.59 - 7.65	24	20 - 28	158	148 - 168														
pHOx Plus		7.62	7.59 - 7.65	23	19 - 27	162	152 - 172	158	153 - 163	6.5	6.0 - 7.0	117	112 - 122	0.46	0.36 - 0.56			308	278 - 338	DNA ³	
Stat Profile 1-10		7.58	7.55 - 7.61	24	20 - 28	154	144 - 164	158	153 - 163	6.3	5.8 - 6.8	124	119 - 129	0.53	0.43 - 0.63			288	258 - 318	7.2	5.7 - 8.7
Stat Profile Ultra		7.61	7.58 - 7.64	25	21 - 29	152	141 - 163	160	155 - 165	6.4	5.9 - 6.9	124	119 - 129	0.52	0.42 - 0.62	0.36	0.28 - 0.44	306	276 - 336	7.6	6.1 - 9.1
OPTI Medical																					
OPTI CCA		7.64	7.58 - 7.70	23	19 - 27	148	136 - 160	164	154 - 174	6.7	6.2 - 7.2	129	124 - 134	0.52	0.42 - 0.62			328	278 - 378		
OPTI R		7.64	7.58 - 7.70	22	18 - 26	151	139 - 163	170	160 - 180	6.9	6.4 - 7.4			0.66	0.56 - 0.76						
OPTI LION		DNA ³	DNA ³ - DNA ³					DNA ³	DNA ³ - DNA ³	DNA ³	DNA ³ - DNA ³	DNA ³	DNA ³ - DNA ³	DNA ³	DNA ³ - DNA ³						
Radiometer																					
ABL 5		7.57	7.54 - 7.60	24	20 - 28	155	145 - 165														
ABL 50, 500 Series		7.58	7.55 - 7.61	24	20 - 28	156	146 - 166	156	151 - 161	6.2	5.7 - 6.7	119	114 - 124	0.54	0.44 - 0.64						
ABL 600 Series		7.58	7.55 - 7.61	24	20 - 28	154	144 - 164	156	151 - 161	6.1	5.6 - 6.6	119	114 - 124	0.55	0.45 - 0.65			273	243 - 303	6.5	5.0 - 8.0
ABL 700 Series		7.58	7.55 - 7.61	24	20 - 28	152	142 - 162	157	152 - 162	6.1	5.6 - 6.6	120	115 - 125	0.57	0.47 - 0.67			283	253 - 313	6.5	5.0 - 8.0
ABL 77, 80 Series		7.58	7.52 - 7.64	23	19 - 27	148	138 - 158	157	152 - 162	6.0	5.5 - 6.5	121	116 - 126	0.56	0.46 - 0.66			286	256 - 316		
ABL 800 Series		7.58	7.55 - 7.61	24	20 - 28	153	143 - 163	157	152 - 162	6.1	5.6 - 6.6	120	115 - 125	0.57	0.47 - 0.67			283	253 - 313	6.8	5.3 - 8.3
NPT 7		DNA ³		DNA ³		DNA ³															
Roche																					
AVL Compact Series		7.55	7.52 - 7.58	24	20 - 28	158	147 - 169														
Cobas b 221		7.57	7.54 - 7.60	25	21 - 29	151	139 - 163	DNA ³		DNA ³		DNA ³		DNA ³				DNA ³		DNA ³	
OMNI 1-9 ¹		7.57	7.54 - 7.60	25	21 - 29	152	140 - 164	160	155 - 165	6.4	5.9 - 6.9	125	120 - 130	0.53	0.43 - 0.63			293	258 - 328	7.5	6.0 - 9.0
Siemens (Bayer)																					
238		7.58	7.55 - 7.61	25	20 - 30	140	129 - 151														
248		7.58	7.55 - 7.61	25	20 - 30	141	130 - 152														
400 Series		7.60	7.56 - 7.64	25	20 - 30	149	137 - 161	156	149 - 163	6.1	5.6 - 6.6	122	112 - 132	0.52	0.42 - 0.62			292	262 - 322		
800 Series		7.62	7.59 - 7.65	24	20 - 28	153	142 - 164	154	149 - 159	6.3	5.8 - 6.8	120	115 - 125	0.52	0.42 - 0.62			296	266 - 326	7.3	5.8 - 8.8
600 Series		7.59	7.56 - 7.62					157	152 - 162	6.1	5.6 - 6.6	123	118 - 128	0.52	0.42 - 0.62						
1200 Series		7.62	7.59 - 7.65	23	19 - 27	151	140 - 162	154	149 - 159	6.1	5.6 - 6.6	122	117 - 127	0.53	0.43 - 0.63			280	250 - 310	7.3	5.8 - 8.8
YSI																					
2300 Stat Plus																		297	267 - 327	7.3	5.8 - 8.8

FOOTNOTES: 1. Always Test as an Aqueous Material in the Sample or QC Mode
 2. ORL - Outside (Analyzer's) Reportable Limits
 3. DNA - Data Not Available at Time of Printing

CVC 123 Calibration Verification Controls

Level 5

LOT 14217

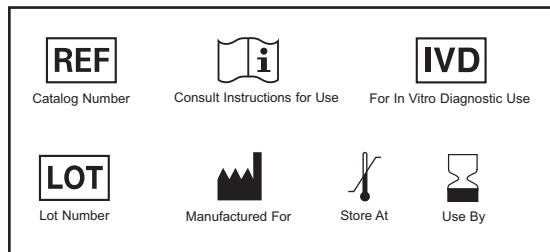
Exp.: 2014-11

Expected Values Chart

Analyzers	pH		pCO ₂ mmHg		pO ₂ mmHg		Na ⁺ mmol/L		K ⁺ mmol/L		Cl ⁻ mmol/L		Ca ⁺⁺ mmol/L		Mg ⁺⁺ mmol/L		Glucose mg/dL		Lactate mmol/L		
	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	mean	range	
EPOCAL																					
EPOC <i>Contact Epocal Technical Support or the Epocal website (www.epocal.com) for assigned values.</i>																					
IL																					
1600 Series 7.78 7.74 - 7.82 12 8 - 16 484 424 - 544 168 163 - 173 1.4 0.9 - 1.9 0.23 0.13 - 0.33																					
Synthesis Series 7.80 7.76 - 7.84 14 10 - 18 489 429 - 549 167 162 - 172 1.8 1.3 - 2.3 130 125 - 135 0.20 0.10 - 0.30 0 0 - 5																					
GEM Premier 3000 Series ORL ² 12 8 - 16 460 400 - 520 178 173 - 183 1.4 0.9 - 1.9 0.12 0.02 - 0.22 DNA ³ DNA ³																					
GEM Premier 4000 7.86 7.82 - 7.90 13 9 - 17 497 437 - 557 167 162 - 172 1.4 0.9 - 1.9 136 131 - 141 0.13 0.03 - 0.23 ORL ² 0 - 5 10.2 7.7 - 12.7																					
ITC																					
IRMA and IRMA TRUpoint <i>Contact ITC Technical Support or the ITC website (www.ITCMED.com) for assigned values.</i>																					
Medica																					
EasyBloodGas 7.84 7.79 - 7.89 12 8 - 16 479 429 - 529																					
EasyStat 7.80 7.75 - 7.85 13 9 - 17 482 432 - 532 171 166 - 176 1.5 1.0 - 2.0 128 123 - 133 ORL ² ORL ² - ORL ²																					
Nova																					
CCX 7.79 7.75 - 7.83 14 10 - 18 488 428 - 548 171 166 - 176 1.6 1.1 - 2.1 135 130 - 140 0.23 0.13 - 0.33 DNA ³ DNA ³ 11.7 9.2 - 14.2																					
pHOx 7.79 7.75 - 7.83 14 10 - 18 504 444 - 564																					
pHOx Plus 7.78 7.74 - 7.82 14 10 - 18 539 479 - 599 168 163 - 173 1.6 1.1 - 2.1 125 120 - 130 DNA ³ DNA ³ DNA ³																					
Stat Profile 1-10 7.79 7.75 - 7.83 13 9 - 17 484 424 - 544 170 165 - 175 1.8 1.3 - 2.3 133 128 - 138 0.20 0.10 - 0.30 0 0 - 5 10.9 8.4 - 13.4																					
Stat Profile Ultra 7.81 7.77 - 7.85 13 9 - 17 486 426 - 546 171 166 - 176 1.6 1.1 - 2.1 133 128 - 138 0.20 0.10 - 0.30 DNA ³ 0 0 - 5 10.9 8.4 - 13.4																					
OPTI Medical																					
OPTI CCA ORL ² 13 10 - 16 476 416 - 536 ORL ² 1.4 0.9 - 1.9 140 134 - 146 ORL ² ORL ²																					
OPTI R ORL ² 12 9 - 15 476 416 - 536 ORL ² ORL ² - ORL ² 1.7 1.2 - 2.2 ORL ²																					
OPTI LION DNA ³ DNA ³ - DNA ³ DNA ³ DNA ³ - DNA ³ DNA ³ DNA ³ - DNA ³ DNA ³ DNA ³ - DNA ³ DNA ³ DNA ³ - DNA ³																					
Radiometer																					
ABL 5 7.78 7.74 - 7.82 13 9 - 17 514 454 - 574																					
ABL 50, 500 Series 7.79 7.75 - 7.83 13 9 - 17 469 409 - 529 167 162 - 172 1.5 1.0 - 2.0 128 123 - 133 0.22 0.12 - 0.32																					
ABL 600 Series 7.79 7.75 - 7.83 13 9 - 17 469 409 - 529 167 162 - 172 1.6 1.1 - 2.1 128 123 - 133 0.22 0.12 - 0.32 0 0 - 5 10.2 7.7 - 12.7																					
ABL 700 Series 7.79 7.75 - 7.83 13 9 - 17 464 404 - 524 168 163 - 173 1.7 1.2 - 2.2 131 126 - 136 0.25 0.15 - 0.35 0 0 - 5 10.5 8.0 - 13.0																					
ABL 77, 80 Series DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³																					
ABL 800 Series 7.79 7.75 - 7.83 13 9 - 17 454 394 - 514 168 163 - 173 1.7 1.2 - 2.2 131 126 - 136 0.28 0.18 - 0.38 0 0 - 5 10.5 8.0 - 13.0																					
NPT 7 DNA ³ DNA ³ DNA ³																					
Roche																					
AVL Compact Series 7.79 7.75 - 7.83 13 9 - 17 493 433 - 553																					
Cobas b 221 7.74 7.70 - 7.78 13 9 - 17 474 414 - 534 DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³ DNA ³																					
OMNI 1-9 ⁱ 7.75 7.71 - 7.79 14 10 - 18 449 389 - 509 172 167 - 177 1.6 1.1 - 2.1 134 129 - 139 0.17 0.07 - 0.27 ORL ² 11.5 9.0 - 14.0																					
Siemens (Bayer)																					
238 7.80 7.76 - 7.84 13 9 - 17 484 424 - 544																					
248 7.80 7.76 - 7.84 13 9 - 17 484 424 - 544																					
400 Series ORL ² ORL ² 473 413 - 533 172 162 - 182 1.5 1.0 - 2.0 133 123 - 143 ORL ² ORL ²																					
800 Series 7.82 7.78 - 7.86 13 9 - 17 470 410 - 530 170 165 - 175 1.4 0.9 - 1.9 130 125 - 135 0.23 0.13 - 0.33 ORL ² 9.6 7.1 - 12.1																					
600 Series 7.80 7.76 - 7.84 168 163 - 173 1.5 1.0 - 2.0 132 127 - 137 0.20 0.10 - 0.30																					
1200 Series 7.82 7.78 - 7.86 12 8 - 16 482 422 - 542 165 160 - 170 1.4 0.9 - 1.9 132 127 - 137 ORL ² ORL ² 11.1 8.6 - 13.6																					
YSI																					
2300 Stat Plus 0 0 - 5 11.7 9.2 - 14.2																					

FOOTNOTES: 1. Always Test as an Aqueous Material in the Sample or QC Mode
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CVC 123 Calibration Verification Controls



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