CVC 123

5 Levels

CVC 123 Calibration Verification Controls

LOT		Exp.:	
	Set: 412322		Set: 2017-09
	Level 1: 44119		Level 1: 2017-09
	Level 2: 41526		Level 2: 2017-09
	Level 3: 41625		Level 3: 2017-09
	Level 4: 41726		Level 4: 2017-09
	Level 5: 44221		Level 5: 2017-09

REF CVC 123

IVD For *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, pCO_2, pO_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 equilbrated with specific levels of CO_2, O_2, and N_2. 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: pO_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

CVC 123 Calibration Verification Controls

Level 1

LOT 44119

Exp.: 2017-09

Expected Values Chart

Analyzers	pH mean	pH range	pCO_2 mmHg mean	pCO_2 mmHg range	pO_2 mmHg mean	pO_2 mmHg range	Na^+ mmol/L mean	Na^+ mmol/L range	K^+ mmol/L mean	K^+ mmol/L range	Cl^- mmol/L mean	Cl^- mmol/L range	Ca^{++} mmol/L mean	Ca^{++} mmol/L range	Mg^{++} mmol/L mean	Mg^{++} mmol/L range	Glucose mg/dL mean	Glucose mg/dL range	Lactate mmol/L mean	Lactate mmol/L range
EPOCAL																				
EPOC	6.80	6.75 - 6.85	96	84 - 108	34	19 - 49	94	89 - 99	DNA [3]				2.72	2.22 - 3.22			483	383 - 583	DNA [3]	
IL																				
1600 Series	6.84	6.81 - 6.87	95	83 - 107	26	11 - 41	88	83 - 93	12.2	9.7 - 14.7			2.87	2.37 - 3.37						
Synthesis Series	6.82	6.79 - 6.85	91	79 - 103	19	4 - 34	86	81 - 91	11.8	9.3 - 14.3	68	63 - 73	2.77	2.27 - 3.27			393	343 - 443		
GEM Premier 3000 Series	ORL [2]		93	81 - 105	39	24 - 54	ORL [2]		11.7	9.2 - 14.2			2.82	2.32 - 3.32			DNA [3]		DNA [3]	
GEM Premier 4000	6.82	6.79 - 6.85	89	77 - 101	44	29 - 59	ORL [2]		11.9	9.4 - 14.4	66	61 - 71	3.12	2.62 - 3.62			451	401 - 501	15.0	11.5 - 18.5
ITC																				
IRMA and IRMA TRUpoint	*Contact ITC Technical Support or the ITC website (www.ITCMED.com) for assigned values.*																			
Medica																				
EasyBloodGas	ORL [2]		94	82 - 106	26	14 - 38														
EasyStat	6.83	6.80 - 6.86	97	85 - 109	31	19 - 43	85	80 - 90	11.3	9.3 - 13.3	65	60 - 70	2.92	2.52 - 3.32						
Nova																				
CCX	6.89	6.86 - 6.92	84	72 - 96	28	13 - 43	90	85 - 95	12.0	9.5 - 14.5	74	69 - 79	DNA [3]		DNA [3]		461	411 - 511	16.4	12.9 - 19.9
pHOx	6.89	6.86 - 6.92	83	71 - 95	31	16 - 46														
pHOx Plus	6.89	6.86 - 6.92	83	71 - 95	25	10 - 40	91	86 - 96	12.0	9.5 - 14.5	70	65 - 75	DNA [3]				433	383 - 483	DNA [3]	
Stat Profile 1-10	6.89	6.86 - 6.92	90	78 - 102	24	9 - 39	89	84 - 94	11.7	9.2 - 14.2	71	66 - 76	2.81	2.31 - 3.31			443	393 - 493	15.5	12.0 - 19.0
Stat Profile Ultra	6.90	6.87 - 6.93	87	75 - 99	22	7 - 37	89	84 - 94	11.9	9.4 - 14.4	71	66 - 76	2.81	2.31 - 3.31	DNA [3]		453	403 - 503	15.5	12.0 - 19.0
OPTI Medical																				
OPTI CCA	6.91	6.86 - 6.96	89	77 - 101	60	45 - 75	ORL [2]		ORL [2]		87	82 - 92	ORL [2]				ORL [2]		ORL [2]	
OPTI R	6.92	6.87 - 6.97	87	75 - 99	69	54 - 84	ORL [2]		ORL [2]				2.04	1.84 - 2.24						
OPTI LION	6.88	6.82 - 6.94					DNA [3]		DNA [3]		73	67 - 79	2.87	2.72 - 3.02						
Radiometer																				
ABL 5	6.84	6.81 - 6.87	92	80 - 104	22	7 - 37														
ABL 50, 500 Series	6.84	6.81 - 6.87	91	79 - 103	37	22 - 52	88	83 - 93	11.3	8.8 - 13.8	66	61 - 71	2.98	2.48 - 3.48						
ABL 600 Series	6.84	6.81 - 6.87	91	79 - 103	37	22 - 52	88	83 - 93	11.3	8.8 - 13.8	66	61 - 71	2.98	2.48 - 3.48			413	363 - 463	14.8	11.3 - 18.3
ABL 700 Series	6.84	6.81 - 6.87	91	79 - 103	40	25 - 55	87	82 - 92	11.3	8.8 - 13.8	66	61 - 71	2.96	2.46 - 3.46			432	382 - 482	14.8	11.3 - 18.3
ABL 77, 80 Series	DNA [3]		DNA [3]		DNA [3]		DNA [3]		DNA [3]		DNA [3]		DNA [3]				DNA [3]			
ABL 800 Series	6.84	6.81 - 6.87	89	77 - 101	45	30 - 60	86	81 - 91	11.3	8.8 - 13.8	65	60 - 70	2.96	2.46 - 3.46			423	373 - 473	15.3	11.8 - 18.8
NPT 7	DNA [3]		DNA [3]		DNA [3]															
Roche																				
AVL Compact Series	6.83	6.80 - 6.86	91	79 - 103	37	22 - 52														
Cobas b 221	6.89	6.86 - 6.92	92	80 - 104	8	0 - 23	DNA [3]		DNA [3]		DNA [3]		DNA [3]				DNA [3]		DNA [3]	
OMNI 1-9[1]	6.89	6.86 - 6.92	91	79 - 103	21	6 - 36	88	83 - 93	11.5	9.0 - 14.0	74	69 - 79	2.82	2.32 - 3.32			423	373 - 473	16.1	12.6 - 19.6
Siemens (Bayer)																				
238	6.84	6.81 - 6.87	102	90 - 114	36	21 - 51														
248	6.85	6.82 - 6.88	102	90 - 114	22	7 - 37														
400 Series	6.78	6.74 - 6.82	103	89 - 117	43	27 - 59	ORL [2]		11.0	8.5 - 13.5	ORL [2]		2.78	2.28 - 3.28			461	411 - 511		
800 Series	6.86	6.83 - 6.89	94	82 - 106	31	16 - 46	87	82 - 92	11.5	9.0 - 14.0	67	62 - 72	2.72	2.22 - 3.22			433	383 - 483	14.2	10.7 - 17.7
600 Series	6.84	6.81 - 6.87					86	81 - 91	ORL [2]		71	66 - 76	3.12	2.62 - 3.62						
1200 Series	6.86	6.83 - 6.89	94	82 - 106	33	18 - 48	87	82 - 92	11.7	9.2 - 14.2	72	67 - 77	2.82	2.32 - 3.32			417	367 - 467	15.3	11.8 - 18.8
YSI																				
2300 Stat Plus																	433	383 - 483	16.3	12.8 - 19.8

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 2

LOT 41526

Exp.: 2017-09

Expected Values Chart

Analyzers	pH mean	pH range	pCO_2 mmHg mean	pCO_2 mmHg range	pO_2 mmHg mean	pO_2 mmHg range	Na^+ mmol/L mean	Na^+ mmol/L range	K^+ mmol/L mean	K^+ mmol/L range	Cl^- mmol/L mean	Cl^- mmol/L range	Ca^{++} mmol/L mean	Ca^{++} mmol/L range	Mg^{++} mmol/L mean	Mg^{++} mmol/L range	Glucose mg/dL mean	Glucose mg/dL range	Lactate mmol/L mean	Lactate mmol/L range
EPOCAL																				
EPOC	7.11	7.06 - 7.16	70	62 - 78	70	55 - 85	110	105 - 115	DNA [3]				1.39	1.24 - 1.54			76	65 - 87	0.6	0.3 - 0.9
IL																				
1600 Series	7.14	7.11 - 7.17	69	62 - 76	60	51 - 69	111	106 - 116	1.9	1.4 - 2.4			1.42	1.27 - 1.57						
Synthesis Series	7.15	7.12 - 7.18	68	61 - 75	62	52 - 72	112	107 - 117	2.0	1.5 - 2.5	79	74 - 84	1.40	1.25 - 1.55			75	65 - 85		
GEM Premier 3000 Series	7.13	7.09 - 7.17	71	62 - 80	72	60 - 84	111	106 - 116	1.7	1.2 - 2.2			1.47	1.32 - 1.62			DNA [3]		DNA [3]	
GEM Premier 4000	7.12	7.08 - 7.16	69	60 - 78	73	61 - 85	112	107 - 117	1.9	1.4 - 2.4	78	73 - 83	1.50	1.35 - 1.65			70	60 - 80	0.6	0.3 - 0.9
ITC																				
IRMA and IRMA TRUpoint	*Contact ITC Technical Support or the ITC website (www.ITCMED.com) for assigned values.*																			
Medica																				
EasyBloodGas	7.14	7.11 - 7.17	70	63 - 77	64	54 - 74														
EasyStat	7.14	7.11 - 7.17	73	66 - 80	68	58 - 78	111	106 - 116	1.8	1.3 - 2.3	74	69 - 79	1.48	1.33 - 1.63						
Nova																				
CCX	7.17	7.14 - 7.20	63	56 - 70	66	57 - 75	111	106 - 116	1.9	1.4 - 2.4	82	77 - 87	1.53	1.38 - 1.68	1.08	0.93 - 1.23	79	69 - 89	0.5	0.2 - 0.8
pHOx	7.18	7.15 - 7.21	64	57 - 71	66	57 - 75														
pHOx Plus	7.18	7.15 - 7.21	64	57 - 71	64	55 - 73	114	109 - 119	1.9	1.4 - 2.4	73	68 - 78	1.46	1.31 - 1.61			83	73 - 93	DNA [3]	
Stat Profile 1-10	7.18	7.15 - 7.21	69	62 - 76	65	56 - 74	114	109 - 119	2.0	1.5 - 2.5	78	73 - 83	1.45	1.30 - 1.60			77	67 - 87	0.7	0.4 - 1.0
Stat Profile Ultra	7.20	7.17 - 7.23	67	60 - 74	62	52 - 72	114	109 - 119	2.0	1.5 - 2.5	78	73 - 83	1.47	1.32 - 1.62	1.03	0.88 - 1.18	81	71 - 91	0.6	0.3 - 0.9
OPTI Medical																				
OPTI CCA	7.20	7.15 - 7.25	70	62 - 78	79	64 - 94	115	107 - 123	1.6	1.1 - 2.1	95	90 - 100	1.30	1.15 - 1.45			89	73 - 105	0.8	0.5 - 1.1
OPTI R	7.22	7.17 - 7.27	66	58 - 74	84	69 - 99	115	107 - 123	1.2	ORL [2] - 1.7			1.21	1.06 - 1.36						
OPTI LION	7.19	7.13 - 7.25					105	100 - 110	1.6	1.1 - 2.1	85	79 - 91	1.27	1.12 - 1.42						
Radiometer																				
ABL 5	7.14	7.11 - 7.17	70	63 - 77	60	50 - 70														
ABL 50, 500 Series	7.14	7.11 - 7.17	69	62 - 76	71	61 - 81	114	109 - 119	1.9	1.4 - 2.4	73	68 - 78	1.52	1.37 - 1.67						
ABL 600 Series	7.14	7.11 - 7.17	69	62 - 76	71	61 - 81	114	109 - 119	1.9	1.4 - 2.4	73	68 - 78	1.55	1.40 - 1.70			69	59 - 79	0.6	0.3 - 0.9
ABL 700 Series	7.14	7.11 - 7.17	69	62 - 76	74	64 - 84	114	109 - 119	2.0	1.5 - 2.5	76	71 - 81	1.53	1.38 - 1.68			75	65 - 85	0.6	0.3 - 0.9
ABL 77, 80 Series	7.14	7.09 - 7.19	70	63 - 77	59	49 - 69	114	109 - 119	1.9	1.4 - 2.4	65	60 - 70	1.39	1.24 - 1.54			72	62 - 82		
ABL 800 Series	7.14	7.11 - 7.17	68	61 - 75	76	66 - 86	112	107 - 117	1.9	1.4 - 2.4	76	71 - 81	1.53	1.38 - 1.68			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	75	67 - 83	79	69 - 89														
Cobas b 221	7.15	7.12 - 7.18	72	64 - 80	54	39 - 69	DNA [3]		DNA [3]		DNA [3]		DNA [3]				DNA [3]		DNA [3]	
OMNI 1-9 [1]	7.15	7.12 - 7.18	71	63 - 79	63	48 - 78	114	109 - 119	1.9	1.4 - 2.4	84	79 - 89	1.47	1.32 - 1.62			77	62 - 92	0.6	0.3 - 0.9
Siemens (Bayer)																				
238	7.15	7.12 - 7.18	71	63 - 79	71	61 - 81														
248	7.15	7.12 - 7.18	68	60 - 76	53	43 - 63														
400 Series	7.11	7.07 - 7.15	74	64 - 84	74	62 - 86	109	104 - 114	1.8	1.3 - 2.3	74	68 - 80	1.45	1.29 - 1.61			74	64 - 84		
800 Series	7.16	7.13 - 7.19	70	63 - 77	67	57 - 77	109	104 - 114	1.7	1.2 - 2.2	78	73 - 83	1.42	1.27 - 1.57			75	65 - 85	0.6	0.3 - 0.9
600 Series	7.16	7.13 - 7.19					113	108 - 118	1.9	1.4 - 2.4	80	75 - 85	1.50	1.35 - 1.65						
1200 Series	7.16	7.13 - 7.19	69	62 - 76	67	57 - 77	110	105 - 115	1.7	1.2 - 2.2	79	74 - 84	1.43	1.28 - 1.58			72	62 - 82	0.7	0.4 - 1.0
YSI																				
2300 Stat Plus																	77	67 - 87	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 41625

Exp.: 2017-09

Expected Values Chart

Analyzers	pH mean	pH range	pCO_2 mmHg mean	pCO_2 mmHg range	pO_2 mmHg mean	pO_2 mmHg range	Na^+ mmol/L mean	Na^+ mmol/L range	K^+ mmol/L mean	K^+ mmol/L range	Cl^- mmol/L mean	Cl^- mmol/L range	Ca^{++} mmol/L mean	Ca^{++} mmol/L range	Mg^{++} mmol/L mean	Mg^{++} mmol/L range	Glucose mg/dL mean	Glucose mg/dL range	Lactate mmol/L mean	Lactate mmol/L range
EPOCAL																				
EPOC	7.40	7.35 - 7.45	40	35 - 45	106	89 - 123	134	129 - 139	DNA [3]				1.12	1.02 - 1.22			194	164 - 224	2.3	1.7 - 2.9
IL																				
1600 Series	7.39	7.36 - 7.42	43	38 - 48	102	93 - 111	132	127 - 137	4.2	3.7 - 4.7			1.09	0.99 - 1.19						
Synthesis Series	7.40	7.37 - 7.43	43	38 - 48	105	95 - 115	133	128 - 138	4.4	3.9 - 4.9	99	94 - 104	1.10	1.00 - 1.20			197	177 - 217		
GEM Premier 3000 Series	7.42	7.38 - 7.46	42	35 - 49	113	101 - 125	135	130 - 140	4.2	3.7 - 4.7			1.12	1.02 - 1.22			DNA [3]		DNA [3]	
GEM Premier 4000	7.41	7.37 - 7.45	42	35 - 49	113	101 - 125	133	128 - 138	4.7	4.2 - 5.2	99	94 - 104	1.12	1.02 - 1.22			189	169 - 209	2.1	1.6 - 2.6
ITC																				
IRMA and IRMA TRUpoint	*Contact ITC Technical Support or the ITC website (www.ITCMED.com) for assigned values.*																			
Medica																				
EasyBloodGas	7.41	7.38 - 7.44	43	38 - 48	106	96 - 116														
EasyStat	7.40	7.37 - 7.43	44	39 - 49	111	101 - 121	133	128 - 138	4.2	3.7 - 4.7	95	90 - 100	1.10	1.00 - 1.20						
Nova																				
CCX	7.42	7.39 - 7.45	41	36 - 46	111	102 - 120	131	126 - 136	4.3	3.8 - 4.8	99	94 - 104	1.10	1.00 - 1.20	0.56	0.46 - 0.66	199	179 - 219	2.6	2.1 - 3.1
pHOx	7.44	7.41 - 7.47	41	36 - 46	109	100 - 118														
pHOx Plus	7.44	7.41 - 7.47	40	35 - 45	111	102 - 120	134	129 - 139	4.3	3.8 - 4.8	94	89 - 99	1.09	0.99 - 1.19			214	194 - 234	DNA [3]	
Stat Profile 1-10	7.41	7.38 - 7.44	42	37 - 47	105	96 - 114	134	129 - 139	4.4	3.9 - 4.9	98	93 - 103	1.11	1.01 - 1.21			201	181 - 221	2.6	2.1 - 3.1
Stat Profile Ultra	7.44	7.41 - 7.47	43	38 - 48	104	94 - 114	135	130 - 140	4.4	3.9 - 4.9	98	93 - 103	1.11	1.01 - 1.21	0.61	0.51 - 0.71	205	185 - 225	2.7	2.2 - 3.2
OPTI Medical																				
OPTI CCA	7.42	7.37 - 7.47	41	36 - 46	105	88 - 122	139	130 - 148	4.4	3.9 - 4.9	105	100 - 110	1.15	1.05 - 1.25			208	185 - 231	2.6	2.1 - 3.1
OPTI R	7.42	7.37 - 7.47	40	35 - 45	109	92 - 125	140	131 - 149	4.6	4.1 - 5.1			1.21	1.11 - 1.31						
OPTI LION	7.42	7.36 - 7.48					132	127 - 137	4.6	4.1 - 5.1	100	92 - 108	1.16	1.01 - 1.31						
Radiometer																				
ABL 5	7.40	7.37 - 7.43	42	37 - 47	106	97 - 115														
ABL 50, 500 Series	7.39	7.36 - 7.42	44	39 - 49	111	102 - 120	132	127 - 137	4.3	3.8 - 4.8	94	89 - 99	1.14	1.04 - 1.24						
ABL 600 Series	7.39	7.36 - 7.42	44	39 - 49	110	101 - 119	132	127 - 137	4.3	3.8 - 4.8	94	89 - 99	1.14	1.04 - 1.24			196	176 - 216	2.4	1.9 - 2.9
ABL 700 Series	7.39	7.36 - 7.42	43	38 - 48	113	103 - 123	134	129 - 139	4.3	3.8 - 4.8	95	90 - 100	1.16	1.06 - 1.26			190	170 - 210	2.3	1.8 - 2.8
ABL 77, 80 Series	7.39	7.34 - 7.44	43	38 - 48	103	93 - 113	134	129 - 139	4.2	3.7 - 4.7	93	88 - 98	1.11	1.01 - 1.21			190	170 - 210		
ABL 800 Series	7.39	7.36 - 7.42	42	37 - 47	114	104 - 124	133	128 - 138	4.3	3.8 - 4.8	95	90 - 100	1.16	1.06 - 1.26			191	171 - 211	2.3	1.8 - 2.8
NPT 7	DNA [3]		DNA [3]		DNA [3]															
Roche																				
AVL Compact Series	7.37	7.34 - 7.40	46	41 - 51	116	106 - 126														
Cobas b 221	7.40	7.37 - 7.43	45	40 - 50	106	94 - 118	DNA [3]		DNA [3]		DNA [3]		DNA [3]				DNA [3]		DNA [3]	
OMNI 1-9[1]	7.39	7.36 - 7.42	45	40 - 50	107	95 - 119	135	130 - 140	4.4	3.9 - 4.9	101	96 - 106	1.12	1.02 - 1.22			191	171 - 211	2.7	2.2 - 3.2
Siemens (Bayer)																				
238	7.40	7.37 - 7.43	44	38 - 50	105	95 - 115														
248	7.40	7.37 - 7.43	44	38 - 50	96	86 - 106														
400 Series	7.40	7.36 - 7.44	44	38 - 50	111	99 - 123	131	126 - 136	4.2	3.7 - 4.7	97	91 - 103	1.06	0.94 - 1.18			198	178 - 218		
800 Series	7.42	7.39 - 7.45	44	39 - 49	109	99 - 119	130	125 - 135	4.3	3.8 - 4.8	98	93 - 103	1.06	0.96 - 1.16			198	178 - 218	2.6	2.1 - 3.1
600 Series	7.41	7.38 - 7.44					132	127 - 137	4.2	3.7 - 4.7	98	93 - 103	1.15	1.05 - 1.25						
1200 Series	7.42	7.39 - 7.45	42	37 - 47	106	96 - 116	130	125 - 135	4.1	3.6 - 4.6	97	92 - 102	1.06	0.96 - 1.16			190	170 - 210	2.5	2.0 - 3.0
YSI																				
2300 Stat Plus																	199	179 - 219	2.7	2.2 - 3.2

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 41726

Exp.: 2017-09

Expected Values Chart

Analyzers	pH mean	pH range	pCO_2 mmHg mean	pCO_2 mmHg range	pO_2 mmHg mean	pO_2 mmHg range	Na^+ mmol/L mean	Na^+ mmol/L range	K^+ mmol/L mean	K^+ mmol/L range	Cl^- mmol/L mean	Cl^- mmol/L range	Ca^{++} mmol/L mean	Ca^{++} mmol/L range	Mg^{++} mmol/L mean	Mg^{++} mmol/L range	Glucose mg/dL mean	Glucose mg/dL range	Lactate mmol/L mean	Lactate mmol/L range
EPOCAL																				
EPOC	7.61	7.56 - 7.66	21	16 - 26	148	125 - 171	158	153 - 163	DNA [3]				0.53	0.43 - 0.63			291	226 - 356	7.0	5.5 - 8.5
IL																				
1600 Series	7.57	7.54 - 7.60	22	18 - 26	150	140 - 160	155	150 - 160	6.0	5.5 - 6.5			0.54	0.44 - 0.64						
Synthesis Series	7.58	7.55 - 7.61	24	20 - 28	154	144 - 164	156	151 - 161	6.3	5.8 - 6.8	122	117 - 127	0.53	0.43 - 0.63			288	258 - 318		
GEM Premier 3000 Series	7.64	7.60 - 7.68	22	16 - 28	158	146 - 170	161	156 - 166	6.2	5.7 - 6.7			0.50	0.40 - 0.60			DNA [3]		DNA [3]	
GEM Premier 4000	7.63	7.59 - 7.67	22	16 - 28	160	148 - 172	157	152 - 162	6.3	5.8 - 6.8	125	120 - 130	0.50	0.40 - 0.60			278	248 - 308	6.2	4.7 - 7.7
ITC																				
IRMA and IRMA TRUpoint	*Contact ITC Technical Support or the ITC website (www.ITCMED.com) for assigned values.*																			
Medica																				
EasyBloodGas	7.61	7.58 - 7.64	22	18 - 26	159	147 - 171														
EasyStat	7.59	7.56 - 7.62	22	18 - 26	161	149 - 173	161	156 - 166	6.2	5.7 - 6.7	122	117 - 127	0.54	0.44 - 0.64						
Nova																				
CCX	7.61	7.58 - 7.64	23	19 - 27	156	146 - 166	157	152 - 162	6.5	6.0 - 7.0	125	120 - 130	0.58	0.48 - 0.68	0.27	0.19 - 0.35	292	262 - 322	7.4	5.9 - 8.9
pHOx	7.62	7.59 - 7.65	23	19 - 27	157	147 - 167														
pHOx Plus	7.62	7.59 - 7.65	22	18 - 26	166	156 - 176	159	154 - 164	6.5	6.0 - 7.0	118	113 - 123	0.49	0.39 - 0.59			328	298 - 358	DNA [3]	
Stat Profile 1-10	7.58	7.55 - 7.61	23	19 - 27	154	144 - 164	158	153 - 163	6.3	5.8 - 6.8	125	120 - 130	0.54	0.44 - 0.64			283	253 - 313	7.1	5.6 - 8.6
Stat Profile Ultra	7.61	7.58 - 7.64	24	20 - 28	152	141 - 163	160	155 - 165	6.4	5.9 - 6.9	125	120 - 130	0.53	0.43 - 0.63	0.36	0.28 - 0.44	301	271 - 331	7.5	6.0 - 9.0
OPTI Medical																				
OPTI CCA	7.64	7.58 - 7.70	22	18 - 26	152	140 - 164	166	156 - 176	6.6	6.1 - 7.1	124	118 - 130	0.57	0.52 - 0.62			316	266 - 366	5.8	4.3 - 7.3
OPTI R	7.61	7.55 - 7.67	22	18 - 26	149	137 - 161	168	158 - 178	7.0	6.5 - 7.5			0.72	0.67 - 0.77						
OPTI LION	7.64	7.58 - 7.70					160	153 - 167	6.9	6.4 - 7.4	129	121 - 137	0.57	0.45 - 0.69						
Radiometer																				
ABL 5	7.59	7.56 - 7.62	23	19 - 27	155	145 - 165														
ABL 50, 500 Series	7.58	7.55 - 7.61	23	19 - 27	156	146 - 166	156	151 - 161	6.2	5.7 - 6.7	120	115 - 125	0.55	0.45 - 0.65						
ABL 600 Series	7.58	7.55 - 7.61	23	19 - 27	154	144 - 164	156	151 - 161	6.1	5.6 - 6.6	120	115 - 125	0.56	0.46 - 0.66			268	238 - 298	6.4	4.9 - 7.9
ABL 700 Series	7.59	7.56 - 7.62	23	19 - 27	152	142 - 162	157	152 - 162	6.1	5.6 - 6.6	121	116 - 126	0.62	0.52 - 0.72			278	248 - 308	6.4	4.9 - 7.9
ABL 77, 80 Series	7.58	7.52 - 7.64	23	19 - 27	146	136 - 156	157	152 - 162	6.0	5.5 - 6.5	122	117 - 127	0.58	0.48 - 0.68			278	248 - 308		
ABL 800 Series	7.59	7.56 - 7.62	23	19 - 27	152	142 - 162	157	152 - 162	6.1	5.6 - 6.6	121	116 - 126	0.62	0.52 - 0.72			278	248 - 308	6.7	5.2 - 8.2
NPT 7	DNA [3]		DNA [3]		DNA [3]															
Roche																				
AVL Compact Series	7.55	7.52 - 7.58	23	19 - 27	158	147 - 169														
Cobas b 221	7.57	7.54 - 7.60	23	19 - 27	156	144 - 168	DNA [3]		DNA [3]		DNA [3]		DNA [3]				DNA [3]		DNA [3]	
OMNI 1-9[1]	7.57	7.54 - 7.60	24	20 - 28	152	140 - 164	160	155 - 165	6.4	5.9 - 6.9	125	120 - 130	0.55	0.45 - 0.65			288	253 - 323	7.4	5.9 - 8.9
Siemens (Bayer)																				
238	7.58	7.55 - 7.61	24	19 - 29	140	129 - 151														
248	7.58	7.55 - 7.61	24	19 - 29	141	130 - 152														
400 Series	7.60	7.56 - 7.64	23	18 - 28	147	135 - 159	157	150 - 164	6.1	5.6 - 6.6	123	113 - 133	0.53	0.43 - 0.63			287	257 - 317		
800 Series	7.61	7.58 - 7.64	23	19 - 27	152	141 - 163	154	149 - 159	6.3	5.8 - 6.8	122	117 - 127	0.54	0.44 - 0.64			291	261 - 321	7.2	5.7 - 8.7
600 Series	7.59	7.56 - 7.62					157	152 - 162	6.1	5.6 - 6.6	124	119 - 129	0.53	0.43 - 0.63						
1200 Series	7.62	7.59 - 7.65	22	18 - 26	149	138 - 160	154	149 - 159	6.1	5.6 - 6.6	122	117 - 127	0.55	0.45 - 0.65			278	248 - 308	7.1	5.6 - 8.6
YSI																				
2300 Stat Plus																	292	262 - 322	7.2	5.7 - 8.7

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 44221

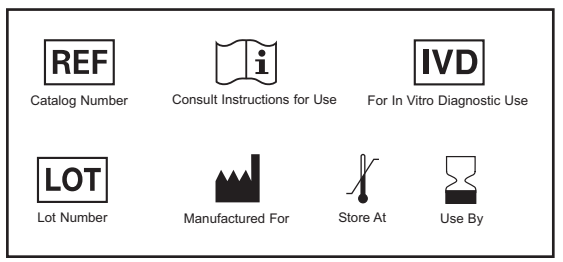
Exp.: 2017-09

Expected Values Chart

Analyzers	pH mean	pH range	pCO_2 mmHg mean	pCO_2 mmHg range	pO_2 mmHg mean	pO_2 mmHg range	Na^+ mmol/L mean	Na^+ mmol/L range	K^+ mmol/L mean	K^+ mmol/L range	Cl^- mmol/L mean	Cl^- mmol/L range	Ca^{++} mmol/L mean	Ca^{++} mmol/L range	Mg^{++} mmol/L mean	Mg^{++} mmol/L range	Glucose mg/dL mean	Glucose mg/dL range	Lactate mmol/L mean	Lactate mmol/L range
EPOCAL																				
EPOC	7.85	7.79 - 7.91	14	10 - 18	484	394 - 574	171	165 - 177	DNA [3]				0.23	0.13 - 0.33			0	0 - 10	DNA [3]	
IL																				
1600 Series	7.78	7.74 - 7.82	12	8 - 16	474	414 - 534	166	161 - 171	1.4	0.9 - 1.9			0.26	0.16 - 0.36						
Synthesis Series	7.80	7.76 - 7.84	14	10 - 18	479	419 - 539	165	160 - 170	1.8	1.3 - 2.3	129	124 - 134	0.23	0.13 - 0.33			0	0 - 5		
GEM Premier 3000 Series	ORL [2]		13	9 - 17	454	394 - 514	177	172 - 182	1.4	0.9 - 1.9			0.14	0.04 - 0.24			DNA [3]		DNA [3]	
GEM Premier 4000	7.86	7.82 - 7.90	13	9 - 17	487	427 - 547	164	159 - 169	1.4	0.9 - 1.9	136	131 - 141	0.14	0.04 - 0.24			ORL [2]		10.4	7.9 - 12.9
ITC																				
IRMA and IRMA TRUpoint	*Contact ITC Technical Support or the ITC website (www.ITCMED.com) for assigned values.*																			
Medica																				
EasyBloodGas	7.82	7.77 - 7.87	13	9 - 17	470	420 - 520														
EasyStat	7.78	7.73 - 7.83	13	9 - 17	478	428 - 528	170	165 - 175	1.5	1.0 - 2.0	130	125 - 135	0.27	0.17 - 0.37						
Nova																				
CCX	7.79	7.75 - 7.83	13	9 - 17	479	419 - 539	168	163 - 173	1.6	1.1 - 2.1	132	127 - 137	0.26	0.16 - 0.36	DNA [3]		DNA [3]		11.9	9.4 - 14.4
pHOx	7.79	7.75 - 7.83	14	10 - 18	494	434 - 554														
pHOx Plus	7.79	7.75 - 7.83	14	10 - 18	534	474 - 594	167	162 - 172	1.6	1.1 - 2.1	126	121 - 131	DNA [3]				DNA [3]		DNA [3]	
Stat Profile 1-10	7.79	7.75 - 7.83	13	9 - 17	474	414 - 534	168	163 - 173	1.8	1.3 - 2.3	132	127 - 137	0.23	0.13 - 0.33			0	0 - 5	11.1	8.6 - 13.6
Stat Profile Ultra	7.81	7.77 - 7.85	13	9 - 17	476	416 - 536	169	164 - 174	1.6	1.1 - 2.1	132	127 - 137	0.23	0.13 - 0.33	DNA [3]		0	0 - 5	11.1	8.6 - 13.6
OPTI Medical																				
OPTI CCA	ORL [2]		15	13 - 18	472	412 - 532	ORL [2]		1.6	1.1 - 2.1	132	126 - 138	0.27	0.22 - 0.32			ORL [2]		9.0	6.5 - 11.5
OPTI R	7.79	7.73 - ORL [2]	14	12 - 17	457	397 - 517	ORL [2]		1.2	ORL [2] - 1.7			0.38	0.33 - 0.43						
OPTI LION	7.92	7.86 - ORL [2]					175	168 - 182	1.4	0.9 - 1.9	143	135 - 151	DNA [3]							
Radiometer																				
ABL 5	7.79	7.75 - 7.83	13	9 - 17	504	444 - 564														
ABL 50, 500 Series	7.79	7.75 - 7.83	13	9 - 17	459	399 - 519	165	160 - 170	1.5	1.0 - 2.0	127	122 - 132	0.25	0.15 - 0.35						
ABL 600 Series	7.79	7.75 - 7.83	13	9 - 17	459	399 - 519	165	160 - 170	1.6	1.1 - 2.1	127	122 - 132	0.25	0.15 - 0.35			0	0 - 5	10.4	7.9 - 12.9
ABL 700 Series	7.79	7.75 - 7.83	13	9 - 17	444	384 - 504	166	161 - 171	1.7	1.2 - 2.2	130	125 - 135	0.34	0.24 - 0.44			0	0 - 5	10.7	8.2 - 13.2
ABL 77, 80 Series	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	444	384 - 504	166	161 - 171	1.7	1.2 - 2.2	130	125 - 135	0.34	0.24 - 0.44			0	0 - 5	10.7	8.2 - 13.2
NPT 7	DNA [3]		DNA [3]		DNA [3]															
Roche																				
AVL Compact Series	7.79	7.75 - 7.83	13	9 - 17	483	423 - 543														
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]	
OMNI 1-9[1]	7.74	7.70 - 7.78	14	10 - 18	439	379 - 499	170	165 - 175	1.6	1.1 - 2.1	133	128 - 138	0.22	0.12 - 0.32			ORL [2]		11.7	9.2 - 14.2
Siemens (Bayer)																				
238	7.80	7.76 - 7.84	13	9 - 17	474	414 - 534														
248	7.80	7.76 - 7.84	13	9 - 17	474	414 - 534														
400 Series	ORL [2]		ORL [2]		464	404 - 524	170	160 - 180	1.5	1.0 - 2.0	132	122 - 142	ORL [2]				ORL [2]			
800 Series	7.83	7.79 - 7.87	13	9 - 17	440	380 - 500	162	157 - 167	1.4	0.9 - 1.9	130	125 - 135	0.27	0.17 - 0.37			ORL [2]		9.8	7.3 - 12.3
600 Series	7.80	7.76 - 7.84					166	161 - 171	1.5	1.0 - 2.0	131	126 - 136	0.23	0.13 - 0.33						
1200 Series	7.83	7.79 - 7.87	12	8 - 16	442	382 - 502	162	157 - 167	1.4	0.9 - 1.9	131	126 - 136	ORL [2]				ORL [2]		11.3	8.8 - 13.8
YSI																				
2300 Stat Plus																	0	0 - 5	11.9	9.4 - 14.4

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



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