

# LIQUID ASSAYED CHEMISTRY CONTROL PREMIUM PLUS - LEVEL 3 (LIQ CHEM ASY PREMIUM PLUS 3)

**CAT. NO.** LAE4215                      **LOT NO.** 986UE  
**SIZE:** 12 x 5 ml                      **EXPIRY:** 2019-12-28  
**GTIN:** 05055273208986

## INTENDED USE

This product is intended for *in vitro* diagnostic use, in the quality control of diagnostic assays. The Liquid Assayed Chemistry Control Premium Plus is for the control of accuracy.

## DEVICE DESCRIPTION

The Liquid Assayed Chemistry Control Premium Plus is supplied at 3 levels, level 1, 2 and 3. Target values and ranges are supplied for the analytes listed in the values section at all three levels.

## SAFETY PRECAUTIONS AND WARNINGS

For *in vitro* diagnostic use only. Do not pipette by mouth. Exercise the normal precautions required for handling laboratory reagents.

Human source material, from which this product has been derived, has been tested at donor level for the Human Immunodeficiency Virus (HIV 1, HIV 2) antibody, Hepatitis B Surface Antigen (HbsAg), and Hepatitis C Virus (HCV) antibody and found to be NON-REACTIVE. FDA approved methods have been used to conduct these tests.

However, since no method can offer complete assurance as to the absence of infectious agents, this material and all patient samples should be handled as though capable of transmitting infectious diseases and disposed of accordingly.

Health and Safety Data Sheets are available on request.

## STORAGE AND STABILITY

**OPENED:** Store refrigerated (+2°C to +8°C). Thawed serum is stable for 7 days at +2°C to +8°C, with the following exceptions: Troponin T is stable for 3 days at +2°C to +8°C. Only the required amount of product should be removed. After use, any residual product should NOT BE RETURNED to the original vial.

**UNOPENED:** Store frozen at -20°C to -70°C. Stable to expiration date printed on individual vials (see Limitations).

## LIMITATIONS

For Total Acid Phosphatase, the material should be stabilised by adding 1 drop (25 µl - 30 µl) of 0.7M Acetic acid solution to 1 ml of the serum after thawing. After stabilisation, Total Acid Phosphatase is stable for 7 days at +2°C to +8°C.

Bilirubin in the serum is light sensitive and it is recommended that the serum is stored in the dark.

ALT, Total Acid Phosphatase, Alkaline Phosphatase, Total and Direct Bilirubin and Lipase values may gradually decrease during the product's shelf life.

Bacterial contamination of the thawed serum will cause reductions in the stability of many components.

The control should not be used as a calibration material.

## PREPARATION

1. Allow the frozen control to thaw at room temperature (+15°C to +25°C) until completely thawed. Swirl the contents to ensure homogeneity.
2. Refer to the Control section of the individual analyser application.
3. Refrigerate any unused material. Prior to reuse, mix contents thoroughly.

## MATERIALS PROVIDED

Liquid Assayed Chemistry Control Premium Plus - Level 3      12 x 5 ml

## MATERIALS REQUIRED BUT NOT PROVIDED

None

## ASSIGNED VALUES

Each lot of serum is submitted to a number of external laboratories. Values are assigned from a consensus of results obtained by these laboratories and internal testing conducted at Randox Laboratories Ltd. With each batch, a control range is provided for individual parameters and each parameter method.

If an instrument specific value is not available, refer to the Mean of all Instruments section. If necessary, contact Randox Laboratories - Customer Technical Services, Northern Ireland, Tel: +44 (0) 28 9445 1070 or email [Technical.Services@randox.com](mailto:Technical.Services@randox.com).

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Beckman Coulter AU Series®		(LIQ CHEM ASY PREMIUM PLUS 3)					
Cat. No. LAE4215 Lot No. 986UE							
Size: 12 x 5 ml Expiry: 2019-12-28		Range					
Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	47.7	40.5	54.9	3.60	7.20	Bromocresol Green
	g/dl	4.77	4.05	5.49	0.36	0.72	
Alkaline Phosphatase	U/l	298	253	343	22.50	45.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	245	196	294	24.50	49.00	Tris buffer with P5P 37°C
Amylase Pancreatic	U/l	255	217	293	19.00	38.00	Immunoinhibition EPS substrate 37°C
Amylase Total	U/l	321	273	369	24.00	48.00	Beckman Coulter - blocked pNPG7 37°C
Apolipoprotein A-1	g/l	2.27	1.86	2.68	0.21	0.41	Immunoturbidimetric
	mg/dl	227	186	268	20.50	41.00	
Apolipoprotein B	g/l	1.14	0.94	1.35	0.10	0.21	Immunoturbidimetric
	mg/dl	114	93.5	135	10.25	20.50	
AST (GOT)	U/l	232	186	278	23.00	46.00	Tris buffer without P5P 37°C
Bilirubin Direct	µmol/l	16.6	13.1	20.2	1.77	3.53	Diazo with Sulphanilic Acid
	mg/dl	0.973	0.766	1.18	0.10	0.21	
Bilirubin Total	µmol/l	84.6	66.8	102	8.90	17.80	Diazo with Sulphanilic Acid
	mg/dl	4.95	3.91	5.99	0.52	1.04	
C-Reactive Protein	mg/l	48.5	38.8	58.2	4.85	9.70	Immunoturbidimetric
Calcium	mmol/l	3.22	2.90	3.54	0.16	0.32	Arsenazo III
	mg/dl	12.9	11.6	14.2	0.65	1.30	
Chloride	mmol/l	115	106	124	4.50	9.00	ISE indirect
Cholesterol	mmol/l	7.64	6.65	8.63	0.50	0.99	Cholesterol Oxidase
	mg/dl	295	257	333	19.00	38.00	

Beckman Coulter AU Series®		(LIQ CHEM ASY PREMIUM PLUS 3)					
Cat. No. LAE4215 Lot No. 986UE							
Size: 12 x 5 ml		Expiry: 2019-12-28		Range			
Analyte	unit	Target	low	high	1SD	2SD	methods
Cholinesterase	U/l	8525	6820	10230	852.5	1705	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	462	379	545	41.50	83.00	CK-NAC (IFCC) 37°C
Complement C3	g/l	1.77	1.42	2.12	0.18	0.35	Immunoturbidimetric
	mg/dl	177	142	212	17.50	35.00	
Complement C4	g/l	0.36	0.29	0.43	0.04	0.07	Immunoturbidimetric
	mg/dl	35.7	28.6	42.8	3.55	7.10	
Creatinine	µmol/l	386	309	463	38.50	77.00	IDMS traceable
	mg/dl	4.36	3.49	5.23	0.44	0.87	
gamma-GT	U/l	182	155	209	13.50	27.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	19.8	16.8	22.7	1.48	2.96	Hexokinase
	mg/dl	356	303	409	26.50	53.00	
HDL - Cholesterol	mmol/l	2.51	2.13	2.89	0.19	0.38	Direct HDL PPD
	mg/dl	96.8	82.2	111	7.30	14.60	
Immunoglobulin A	g/l	2.90	2.18	3.62	0.36	0.72	Immunoturbidimetric
	mg/dl	290	218	362	36.00	72.00	
Immunoglobulin G	g/l	16.3	13.4	19.2	1.46	2.91	Immunoturbidimetric
	mg/dl	1631	1340	1922	145.50	291.00	
Immunoglobulin M	g/l	1.31	1.05	1.57	0.13	0.26	Immunoturbidimetric
	mg/dl	131	105	157	13.00	26.00	
LD (LDH)	U/l	244	207	281	18.50	37.00	L->P 37°C
LDL - Cholesterol	mmol/l	4.72	4.01	5.43	0.36	0.71	Selective detergent methods
	mg/dl	182	155	209	13.50	27.00	
Lipase	U/l	76	61	91	7.50	15.00	Other Colorimetric 37°C
Lipoprotein(a)	mg/dl	17.4	13.9	20.9	1.75	3.50	Immunoturbidimetric
Magnesium	mmol/l	1.77	1.55	1.98	0.11	0.22	Xylidyl Blue
	mg/dl	4.29	3.77	4.81	0.26	0.52	

Beckman Coulter AU Series®		(LIQ CHEM ASY PREMIUM PLUS 3)					
Cat. No. LAE4215 Lot No. 986UE							
Size: 12 x 5 ml Expiry: 2019-12-28		Range					
Analyte	unit	Target	low	high	1SD	2SD	methods
Phosphate Inorganic	mmol/l	2.06	1.75	2.37	0.16	0.31	Phosphomolybdate UV
	mg/dl	6.39	5.43	7.35	0.48	0.96	
Potassium	mmol/l	5.93	5.46	6.40	0.24	0.47	ISE indirect
Prealbumin	g/l	0.32	0.26	0.39	0.03	0.06	Immunoturbidimetric
	mg/dl	32.2	25.8	38.6	3.20	6.40	
Protein Total	g/l	84.3	67.4	101	8.45	16.90	Biuret reaction end point
	g/dl	8.43	6.74	10.1	0.85	1.69	
Sodium	mmol/l	162	154	170	4.00	8.00	ISE indirect
Transferrin	g/l	3.24	2.59	3.89	0.33	0.65	Immunoturbidimetric
	mg/dl	324	259	389	32.50	65.00	
Triglycerides	mmol/l	4.05	3.40	4.70	0.33	0.65	Lipase/GPO-PAP no correction
	mg/dl	358	301	415	28.50	57.00	
Urea	mmol/l	19.8	16.8	22.8	1.50	3.00	Urease kinetic
	mg/dl	119	101	137	9.00	18.00	
	mmol/l	19.8	16.8	22.8	1.50	3.00	BUN
	mg/dl	55.6	47.3	63.9	4.15	8.30	
Uric Acid (Urate)	mmol/l	0.56	0.49	0.64	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.43	8.20	10.7	0.62	1.23	

MEAN OF ALL INSTRUMENTS (LIQ CHEM ASY PREMIUM PLUS 3)							
Cat. No. LAE4215 Lot No. 986UE							
Size: 12 x 5 ml		Expiry: 2019-12-28		Range			
Analyte	unit	Target	low	high	1SD	2SD	methods
Acid Phosphatase (Total)	U/l	36.8	24.7	48.9	6.05	12.10	1-Naphthyl Phosphate substrate Kinetic 37°C
Albumin	g/l	50.0	42.5	57.5	3.75	7.50	Bromocresol Green
	g/dl	5.00	4.25	5.75	0.38	0.75	
Alkaline Phosphatase	U/l	296	252	340	22.00	44.00	AMP optimised to IFCC 37°C
	U/l	231	196	266	17.50	35.00	AMP optimised to IFCC 30°C
	U/l	189	161	217	14.00	28.00	AMP optimised to IFCC 25°C
	U/l	493	419	567	37.00	74.00	Diethanolamine buffer DEA 37°C
	U/l	384	326	442	29.00	58.00	Diethanolamine buffer DEA 30°C
	U/l	315	268	362	23.50	47.00	Diethanolamine buffer DEA 25°C
Alpha-1-Acid Glycoprotein	g/l	0.86	0.69	1.03	0.09	0.17	Immunoturbidimetric
	mg/dl	85.6	68.5	103	8.55	17.10	
Alphafoetoprotein	KIU/l =	2.43	1.94	2.92	0.25	0.49	Roche Cobas E411
	ng/ml	2.94	2.35	3.53	0.30	0.59	
ALT (GPT)	U/l	249	199	299	25.00	50.00	Tris buffer without P5P 37°C
	U/l	184	147	221	18.50	37.00	Tris buffer without P5P 30°C
	U/l	140	112	168	14.00	28.00	Tris buffer without P5P 25°C
	U/l	318	254	382	32.00	64.00	Tris buffer with P5P 37°C
	U/l	235	188	282	23.50	47.00	Tris buffer with P5P 30°C
	U/l	179	143	215	18.00	36.00	Tris buffer with P5P 25°C
Amikacin	µmol/l	51.2	41.0	61.4	5.10	10.20	Gravimetric
	µg/ml	30.0	24.0	36.0	3.00	6.00	

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Size: 12 x 5 ml Expiry: 2019-12-28		Range					
Analyte	unit	Target	low	high	1SD	2SD	methods
Amylase Pancreatic	U/l	274	233	315	20.50	41.00	Immuno-inhibition EPS substrate 37°C
	U/l	309	263	355	23.00	46.00	Randox Liquid Ethylidene pNPG7 37°C
Amylase Total	U/l	317	269	365	24.00	48.00	Roche liquid stable pNPG7 37°C
	U/l	321	273	369	24.00	48.00	Beckman Coulter - blocked pNPG7 37°C
	U/l	341	290	392	25.50	51.00	Siemens - blocked pNPG7 37°C
	U/l	381	324	438	28.50	57.00	Siemens 2-chloro-pNPG3 37°C
	U/l	347	295	399	26.00	52.00	Randox Liquid Ethylidene pNPG7 37°C
	U/l	264	224	304	20.00	40.00	Randox Lyo. Ethylidene pNPG7 37°C
Apolipoprotein A-1	g/l	2.21	1.81	2.61	0.20	0.40	Immunoturbidimetric
	mg/dl	221	181	261	20.00	40.00	
Apolipoprotein B	g/l	1.14	0.94	1.35	0.10	0.21	Immunoturbidimetric
	mg/dl	114	93.5	135	10.25	20.50	
AST (GOT)	U/l	217	174	260	21.50	43.00	Tris buffer without P5P 37°C
	U/l	147	118	176	14.50	29.00	Tris buffer without P5P 30°C
	U/l	103	83	123	10.00	20.00	Tris buffer without P5P 25°C
	U/l	334	267	401	33.50	67.00	Tris buffer with P5P 37°C
	U/l	226	180	272	23.00	46.00	Tris buffer with P5P 30°C
	U/l	159	127	191	16.00	32.00	Tris buffer with P5P 25°C
Beta-2-microglobulin	µg/ml =	5.81	4.65	6.97	0.58	1.16	Immunoturbidimetric
Bicarbonate	mmol/l	28.7	22.8	34.6	2.95	5.90	Enzymatic
Bile Acids	µmol/l	39.3	31.4	47.2	3.95	7.90	5th Generation Colorimetric
Bilirubin Direct	µmol/l	27.3	21.6	33.0	2.85	5.70	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.60	1.26	1.94	0.17	0.34	
	µmol/l	30.4	24.0	36.8	3.20	6.40	Diazo with Sulphanilic Acid
	mg/dl	1.78	1.40	2.16	0.19	0.38	

MEAN OF ALL INSTRUMENTS		(LIQ CHEM ASY PREMIUM PLUS 3)					
Cat. No. LAE4215 Lot No. 986UE							
Size: 12 x 5 ml Expiry: 2019-12-28		Range					
Analyte	unit	Target	low	high	1SD	2SD	methods
Bilirubin Direct	µmol/l	27.0	21.3	32.7	2.85	5.70	Oxidation to Biliverdin/Vanadate
	mg/dl	1.58	1.25	1.91	0.17	0.33	
	µmol/l	26.5	20.9	32.1	2.80	5.60	Modified Jendrassik
	mg/dl	1.55	1.22	1.88	0.17	0.33	
Bilirubin Total	µmol/l	102	80.6	123	10.70	21.40	Dichlorophenyl Diazonium (DPD)
	mg/dl	5.97	4.72	7.22	0.63	1.25	
	µmol/l	91.0	71.9	110	9.55	19.10	Diazo with Sulphanilic Acid
	mg/dl	5.32	4.21	6.43	0.56	1.11	
	µmol/l	98.8	78.1	120	10.35	20.70	Oxidation to Biliverdin/Vanadate
	mg/dl	5.78	4.57	6.99	0.61	1.21	
	µmol/l	98.9	78.1	120	10.40	20.80	Diazo with Dichloroaniline (DCA)
	mg/dl	5.79	4.57	7.01	0.61	1.22	
	µmol/l	102	80.6	123	10.70	21.40	Modified Jendrassik
	mg/dl	5.97	4.72	7.22	0.63	1.25	
C-Reactive Protein	mg/l	46.1	36.9	55.3	4.60	9.20	Immunoturbidimetric
Caeruloplasmin	g/l	0.417	0.334	0.500	0.04	0.08	Immunoturbidimetric
	mg/dl	41.7	33.4	50.0	4.15	8.30	
Caffeine	µmol/l	85.0	63.8	106	10.60	21.20	Gravimetric
	µg/ml	16.5	12.4	20.6	2.05	4.10	
Calcium	mmol/l	3.36	3.02	3.70	0.17	0.34	NM-BAPTA
	mg/dl	13.5	12.1	14.9	0.70	1.40	
	mmol/l	3.26	2.93	3.59	0.17	0.33	Arsenazo III
	mg/dl	13.1	11.7	14.5	0.70	1.40	
	mmol/l	3.27	2.94	3.60	0.17	0.33	Cresolphthalein complexone
	mg/dl	13.1	11.8	14.4	0.65	1.30	

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Cat. No. LAE4215 Lot No. 986UE							
Size: 12 x 5 ml Expiry: 2019-12-28		Range					
Analyte	unit	Target	low	high	1SD	2SD	methods
Carbamazepine	µmol/l	59.2	47.4	71.0	5.90	11.80	Gravimetric
	µg/ml	14.0	11.2	16.8	1.40	2.80	
Carcinoembryonic Antigen (CEA)	ng/ml =	1.95	1.56	2.34	0.20	0.39	Roche Cobas E411
Chloride	mmol/l	116	107	125	4.50	9.00	ISE indirect
	mmol/l	118	109	127	4.50	9.00	ISE direct
	mmol/l	107	98.4	116	4.30	8.60	Colorimetric
Cholesterol	mmol/l	7.75	6.74	8.76	0.51	1.01	Cholesterol Oxidase
	mg/dl	299	260	338	19.50	39.00	
Cholinesterase	U/l	9323	7458	11188	932.50	865.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	484	397	571	43.50	87.00	CK-NAC (IFCC) 37°C
	U/l	303	249	357	27.00	54.00	CK-NAC (IFCC) 30°C
	U/l	206	169	243	18.50	37.00	CK-NAC (IFCC) 25°C
	U/l	481	394	568	43.50	87.00	CK-NAC substrate start (DGKC) 37°C
	U/l	301	247	355	27.00	54.00	CK-NAC substrate start (DGKC) 30°C
	U/l	204	167	241	18.50	37.00	CK-NAC substrate start (DGKC) 25°C
Complement C3	g/l	1.80	1.44	2.16	0.18	0.36	Immunoturbidimetric
	mg/dl	180	144	216	18.00	36.00	
Complement C4	g/l	0.34	0.27	0.40	0.03	0.07	Immunoturbidimetric
	mg/dl	33.5	26.8	40.2	3.35	6.70	
Copper	µmol/l	31.2	25.0	37.4	3.10	6.20	Colorimetric
	µg/dl	198	159	237	19.50	39.00	
Cortisol	nmol/l	1258	944	1572	157.00	314.00	Roche Cobas E411
	µg/dl	45.3	34.0	56.6	5.65	11.30	
Creatinine	µmol/l	432	346	518	43.00	86.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.88	3.91	5.85	0.49	0.97	



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Analyte	unit	Target	low	high	1SD	2SD	methods
Creatinine	µmol/l	399	319	479	40.00	80.00	Alkaline picrate no deproteinization
	mg/dl	4.51	3.60	5.42	0.46	0.91	
	µmol/l	419	335	503	42.00	84.00	Enzymatic
	mg/dl	4.73	3.79	5.67	0.47	0.94	
D-3-Hydroxybutyrate	mmol/l	1.06	0.90	1.22	0.08	0.16	Tris buffer 100mmol pH 8.5
DHEA-S	µmol/l	22.0	17.6	26.4	2.20	4.40	Siemens Immulite 2000
Digoxin	nmol/l	3.44	2.75	4.13	0.35	0.69	Enzyme Immunoassay
	ng/ml	2.69	2.15	3.23	0.27	0.54	
	nmol/l	3.84	3.07	4.61	0.39	0.77	Gravimetric
	ng/ml	3.00	2.40	3.60	0.30	0.60	
Ferritin	ng/ml =	85.9	68.7	103	8.60	17.20	Immunoturbidimetric
Folate	nmol/l	16.5	12.5	20.5	2.00	4.00	Roche Cobas 6000/8000
	ng/ml	7.28	5.51	9.05	0.89	1.77	
Free T3	pmol/l	14.3	10.7	17.9	1.80	3.60	Roche Cobas E411
	ng/dl	0.930	0.696	1.16	0.12	0.23	Roche Cobas E411
	pg/ml	9.31	6.97	11.7	1.17	2.34	Roche Cobas E411
Free T4	pmol/l	46.7	35.0	58.4	5.85	11.70	Roche Cobas E411
	ng/dl	3.64	2.73	4.55	0.46	0.91	Roche Cobas E411
	pg/ml	36.4	27.3	45.5	4.55	9.10	Roche Cobas E411
FSH	mU/ml	22.5	18.0	27.0	2.25	4.50	Roche Cobas E411
Gentamicin	µmol/l	20.0	16.0	24.0	2.00	4.00	Gravimetric
	µg/ml	9.56	7.65	11.5	0.96	1.91	
	µmol/l	14.8	11.8	17.7	1.49	2.97	Enzyme Immunoassay
	µg/ml	7.06	5.64	8.48	0.71	1.42	
gamma-GT	U/l	197	167	227	15.00	30.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	155	132	178	11.50	23.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	122	103	141	9.50	19.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C

## MEAN OF ALL INSTRUMENTS (LIQ CHEM ASY PREMIUM PLUS 3)

Cat. No. LAE4215 Lot No. 986UE

Size: 12 x 5 ml Expiry: 2019-12-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
gamma-GT	U/l	197	167	227	15.00	30.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	155	132	178	11.50	23.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	122	103	141	9.50	19.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
GLDH	U/l	45	36	54	4.50	9.00	Triethanolamine buffer 50 mmol 37°C
	U/l	35	28	42	3.50	7.00	Triethanolamine buffer 50 mmol 30°C
	U/l	28	22	34	3.00	6.00	Triethanolamine buffer 50 mmol 25°C
Glucose	mmol/l	19.8	16.8	22.8	1.50	3.00	Hexokinase
	mg/dl	357	303	411	27.00	54.00	
	mmol/l	20.1	17.1	23.1	1.50	3.00	Glucose oxidase
	mg/dl	362	308	416	27.00	54.00	
HDL - Cholesterol	mmol/l	3.09	2.63	3.55	0.23	0.46	Direct HDL Roche 3rd generation
	mg/dl	119	102	136	8.50	17.00	
	mmol/l	2.51	2.13	2.89	0.19	0.38	Direct HDL PPD
	mg/dl	96.9	82.2	112	7.35	14.70	
	mmol/l	2.62	2.23	3.01	0.20	0.39	Direct Clearance Method
	mg/dl	101	86.1	116	7.45	14.90	
Immunoglobulin A	g/l	2.85	2.14	3.56	0.36	0.71	Immunoturbidimetric
	mg/dl	285	214	356	35.50	71.00	
Immunoglobulin G	g/l	16.3	13.4	19.2	1.46	2.91	Immunoturbidimetric
	mg/dl	1631	1340	1922	145.50	291.00	
Immunoglobulin M	g/l	1.38	1.10	1.66	0.14	0.28	Immunoturbidimetric
	mg/dl	138	110	166	14.00	28.00	

MEAN OF ALL INSTRUMENTS		(LIQ CHEM ASY PREMIUM PLUS 3)					
Cat. No. LAE4215 Lot No. 986UE							
Size: 12 x 5 ml Expiry: 2019-12-28		Range					
Analyte	unit	Target	low	high	1SD	2SD	methods
Iron	µmol/l	36.0	29.5	42.5	3.25	6.50	Colorimetric without ppt.
	µg/dl	201	165	237	18.00	36.00	
Lactate	mmol/l	5.14	4.21	6.07	0.47	0.93	Colorimetric Lactate Oxidase
	mg/dl	46.3	37.9	54.7	4.20	8.40	
	mmol/l	5.10	4.18	6.02	0.46	0.92	UV LDH
	mg/dl	46.0	37.7	54.3	4.15	8.30	
LAP	U/l	22	19	25	1.50	3.00	NAGEL 37°C
LD (LDH)	U/l	506	430	582	38.00	76.00	P->L German methods 37°C
	U/l	365	310	420	27.50	55.00	P->L German methods 30°C
	U/l	257	218	296	19.50	39.00	P->L German methods 25°C
	U/l	244	207	281	18.50	37.00	L->P 37°C
	U/l	176	149	203	13.50	27.00	L->P 30°C
	U/l	124	105	143	9.50	19.00	L->P 25°C
	U/l	256	218	294	19.00	38.00	L->P IFCC 37°C
	U/l	185	157	213	14.00	28.00	L->P IFCC 30°C
LDL - Cholesterol	mmol/l	3.35	2.85	3.85	0.25	0.50	Direct Clearance Method
	mg/dl	129	110	148	9.50	19.00	
Lipase	U/l	68	55	81	6.50	13.00	Roche Colorimetric 37°C
	U/l	90	72	108	9.00	18.00	Randox Colorimetric 37°C
Lipoprotein(a)	mg/dl	17.4	13.9	20.9	1.75	3.50	Immunoturbidimetric
Lithium	mmol/l	1.50	1.32	1.68	0.09	0.18	Gravimetric
	mg/dl	1.04	0.917	1.16	0.06	0.12	
	mmol/l	1.65	1.45	1.85	0.10	0.20	Spectrophotometric
	mg/dl	1.15	1.01	1.29	0.07	0.14	

MEAN OF ALL INSTRUMENTS		(LIQ CHEM ASY PREMIUM PLUS 3)					
Cat. No. LAE4215 Lot No. 986UE							
Size: 12 x 5 ml Expiry: 2019-12-28		Range					
Analyte	unit	Target	low	high	1SD	2SD	methods
Lithium	mmol/l	1.59	1.40	1.78	0.10	0.19	Randox Colorimetric
	mg/dl	1.10	0.972	1.23	0.06	0.13	
Luteinising Hormone (LH)	mU/ml	19.2	15.4	23.0	1.90	3.80	Roche Cobas E411
Magnesium	mmol/l	1.82	1.60	2.04	0.11	0.22	Xylidyl Blue
	mg/dl	4.42	3.89	4.95	0.27	0.53	
	mmol/l	1.79	1.58	2.00	0.11	0.21	Methylthymol blue
	mg/dl	4.35	3.84	4.86	0.26	0.51	
Myoglobin	ng/ml =	272	190	354	41.00	82.00	Immunoturbidimetric
Osmolality	mOsm/kg	856	685	1027	85.50	171.00	Freezing point depression
Paracetamol	mmol/l	1.19	0.95	1.43	0.12	0.24	Gravimetric
	mg/l	180	144	216	18.00	36.00	
	mmol/l	1.05	0.84	1.26	0.11	0.21	Enzymatic
	mg/l	159	127	191	16.00	32.00	
Phenobarbital	µmol/l	216	172	259	21.75	43.50	Gravimetric
	µg/ml	50.0	39.9	60.1	5.05	10.10	
Phenytoin	µmol/l	79.2	63.4	95.0	7.90	15.80	Gravimetric
	µg/ml	20.0	16.0	24.0	2.00	4.00	
Phosphate Inorganic	mmol/l	2.12	1.80	2.44	0.16	0.32	Phosphomolybdate UV
	mg/dl	6.57	5.58	7.56	0.50	0.99	
Potassium	mmol/l	6.00	5.52	6.48	0.24	0.48	ISE indirect
	mmol/l	6.53	6.01	7.05	0.26	0.52	ISE direct
Prealbumin	g/l	32.2	25.8	38.6	3.20	6.40	Immunoturbidimetric
	mg/dl	3220	2580	3860	320.00	640.00	
Progesterone	nmol/l	100	80.0	120	10.00	20.00	Roche Cobas E411
	ng/ml	31.3	25.0	37.6	3.15	6.30	

MEAN OF ALL INSTRUMENTS		(LIQ CHEM ASY PREMIUM PLUS 3)					
Cat. No. LAE4215 Lot No. 986UE							
Size: 12 x 5 ml Expiry: 2019-12-28		Range					
Analyte	unit	Target	low	high	1SD	2SD	methods
Prolactin	µU/ml	560	448	672	56.00	112.00	Roche Cobas E411
Protein Total	g/l	87.5	70.0	105	8.75	17.50	Biuret reaction end point
	g/dl	8.75	7.00	10.5	0.88	1.75	
PSA Total	ng/ml =	21.7	16.3	27.1	2.70	5.40	Roche Cobas E411
Salicylate	mmol/l	3.62	2.90	4.34	0.36	0.72	Gravimetric
	mg/dl	50.0	40.0	60.0	5.00	10.00	
	mmol/l	3.24	2.60	3.89	0.32	0.64	Colorimetric
	mg/dl	44.8	35.9	53.7	4.45	8.90	
Sodium	mmol/l	164	156	172	4.00	8.00	ISE indirect
	mmol/l	174	165	183	4.50	9.00	ISE direct
	mmol/l	158	150	166	4.00	8.00	Enzymatic
T Uptake	%U	33.4	27.4	39.4	3.00	6.00	Siemens Immulite 2000
Testosterone	nmol/l	29.8	23.8	35.7	2.98	5.96	Roche Cobas E411
	ng/ml	8.57	6.85	10.3	0.86	1.72	Roche Cobas E411
	ng/dl	857	685	1029	86.00	172.00	Roche Cobas E411
Theophylline	µmol/l	170	136	204	17.00	34.00	Gravimetric
	µg/ml	30.6	24.5	36.7	3.05	6.10	
	µmol/l	151	121	182	15.20	30.40	Immunoturbidimetric
	µg/ml	27.3	21.8	32.8	2.75	5.50	
Thyroid Stimulating Hormone	µU/ml =	11.2	8.96	13.4	1.12	2.24	Roche Cobas E411
TIBC	µmol/l	75.5	59.6	91.4	7.95	15.90	Randox Direct
	µg/dl	422	333	511	44.50	89.00	
Total Beta hCG	mU/ml=IU	187	150	224	18.50	37.00	Roche Cobas E411
	IU/ml	0.187	0.150	0.224	0.02	0.04	

MEAN OF ALL INSTRUMENTS		(LIQ CHEM ASY PREMIUM PLUS 3)					
Cat. No. LAE4215 Lot No. 986UE							
Size: 12 x 5 ml Expiry: 2019-12-28		Range					
Analyte	unit	Target	low	high	1SD	2SD	methods
Total T3	nmol/l	4.36	3.27	5.45	0.55	1.09	Roche Cobas E411
	ng/ml	2.84	2.13	3.55	0.36	0.71	Roche Cobas E411
	ng/dl	284	213	355	35.50	71.00	Roche Cobas E411
Total T4	nmol/l	217	163	271	27.00	54.00	Roche Cobas E411
	µg/dl	16.9	12.7	21.1	2.10	4.20	Roche Cobas E411
	ng/ml	169	127	211	21.00	42.00	Roche Cobas E411
Transferrin	g/l	3.25	2.60	3.90	0.33	0.65	Immunoturbidimetric
	mg/dl	325	260	390	32.50	65.00	
Triglycerides	mmol/l	4.16	3.49	4.83	0.34	0.67	Lipase/GPO-PAP no correction
	mg/dl	368	309	427	29.50	59.00	
Troponin T	ng/ml =	1.65	1.15	2.14	0.25	0.49	Roche Cobas E411
	ng/l = p	1645	1152	2138	246.50	493.00	
UIBC	µmol/l	40.4	33.1	47.7	3.65	7.30	Direct Colorimetric
	µg/dl	226	185	267	20.50	41.00	
Urea	mmol/l	20.8	17.7	23.9	1.55	3.10	Urease kinetic
	mg/dl	125	106	144	9.50	19.00	
	mmol/l	20.8	17.7	23.9	1.55	3.10	BUN
	mg/dl	58.4	49.6	67.2	4.40	8.80	
Uric Acid (Urate)	mmol/l	0.57	0.50	0.64	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.58	8.33	10.8	0.63	1.25	
	mmol/l	0.57	0.49	0.64	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.49	8.27	10.7	0.61	1.22	
Valproic Acid	µmol/l	554	444	665	55.20	110.40	Gravimetric
	µg/ml	80.0	64.1	95.9	7.95	15.90	
Vancomycin	µmol/l	19.0	15.2	22.8	1.90	3.80	Gravimetric
	µg/ml	28.2	22.6	33.8	2.80	5.60	

MEAN OF ALL INSTRUMENTS		(LIQ CHEM ASY PREMIUM PLUS 3)					
Cat. No. LAE4215 Lot No. 986UE							
Size: 12 x 5 ml Expiry: 2019-12-28		Range					
Analyte	unit	Target	low	high	1SD	2SD	methods
Vitamin B12	pmol/l	633	506	760	63.50	127.00	Roche Cobas E411
	pg/ml	858	686	1030	86.00	172.00	
Zinc	µmol/l	38.1	30.5	45.7	3.80	7.60	Colorimetric with deproteinisation
	µg/dl	249	199	299	25.00	50.00	

**MEAN OF ALL INSTRUMENTS (Elec.) (LIQ CHEM ASY PREMIUM PLUS 3)**

Cat. No. LAE4215 Lot No. 986UE

Size: 12 x 5 ml Expiry: 2019-12-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Albumin (electrophoresis)		59.2	53.3	65.1	2.95	5.90	% of total Protein (Beckman Capillary)
alpha-1-globulin		6.2	4.7	7.7	0.75	1.49	% of total Protein (Beckman Capillary)
alpha-2-globulin		5.9	4.5	7.3	0.71	1.42	% of total Protein (Beckman Capillary)
beta-globulin		12.8	9.7	15.9	1.54	3.07	% of total Protein (Beckman Capillary)
gamma-globulin		15.9	12.1	19.7	1.90	3.80	% of total Protein (Beckman Capillary)



## ROCHE COBAS SERIES® (LIQ CHEM ASY PREMIUM PLUS 3)

Cat. No. LAE4215 Lot No. 986UE

Size: 12 x 5 ml Expiry: 2019-12-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Albumin	g/l	51.2	43.5	58.9	3.85	7.70	Bromocresol Green
	g/dl	5.12	4.35	5.89	0.39	0.77	
Alkaline Phosphatase	U/l	211	179	243	16.00	32.00	Roche Integra AMP buffer 37°C
	U/l	164	139	189	12.50	25.00	Roche Integra AMP buffer 30°C
	U/l	135	114	156	10.50	21.00	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	250	200	300	25.00	50.00	Tris buffer without P5P 37°C
	U/l	185	148	222	18.50	37.00	Tris buffer without P5P 30°C
	U/l	141	113	169	14.00	28.00	Tris buffer without P5P 25°C
Amylase Total	U/l	317	269	365	24.00	48.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	203	162	244	20.50	41.00	Tris buffer without P5P 37°C
	U/l	137	110	164	13.50	27.00	Tris buffer without P5P 30°C
	U/l	97	77	117	10.00	20.00	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	27.5	21.8	33.2	2.85	5.70	Enzymatic
Bile Acids	µmol/l	44.1	35.3	52.9	4.40	8.80	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	27.3	21.6	33.0	2.85	5.70	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.60	1.26	1.94	0.17	0.34	
Bilirubin Total	µmol/l	85.8	67.8	104	9.00	18.00	Dichlorophenyl Diazonium (DPD)
	mg/dl	5.02	3.97	6.07	0.53	1.05	
C-Reactive Protein	mg/l	39.4	31.5	47.3	3.95	7.90	Immunoturbidimetric
Calcium	mmol/l	3.36	3.02	3.70	0.17	0.34	NM-BAPTA
	mg/dl	13.5	12.1	14.9	0.70	1.40	

## ROCHE COBAS SERIES® (LIQ CHEM ASY PREMIUM PLUS 3)

Cat. No. LAE4215 Lot No. 986UE

Size: 12 x 5 ml Expiry: 2019-12-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Chloride	mmol/l	116	107	125	4.50	9.00	ISE indirect
Cholesterol	mmol/l	7.49	6.52	8.46	0.49	0.97	Cholesterol Oxidase
	mg/dl	289	252	326	18.50	37.00	
CK Total	U/l	478	392	564	43.00	86.00	CK-NAC (IFCC) 37°C
	U/l	299	245	353	27.00	54.00	CK-NAC (IFCC) 30°C
	U/l	203	167	239	18.00	36.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	436	349	523	43.50	87.00	Roche Creatinine Plus
	mg/dl	4.93	3.94	5.92	0.50	0.99	
Ferritin	ng/ml =	97.4	77.9	117	9.75	19.50	Immunoturbidimetric
gamma-GT	U/l	202	172	232	15.00	30.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	159	136	182	11.50	23.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	125	106	144	9.50	19.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	20.0	17.0	23.0	1.50	3.00	Hexokinase
	mg/dl	360	306	414	27.00	54.00	
HDL - Cholesterol	mmol/l	3.09	2.63	3.55	0.23	0.46	Direct HDL Roche 3rd generation
	mg/dl	119	102	136	8.50	17.00	
Iron	µmol/l	36.1	29.6	42.6	3.25	6.50	Colorimetric without ppt.
	µg/dl	202	165	239	18.50	37.00	
Lactate	mmol/l	5.24	4.30	6.18	0.47	0.94	Colorimetric Lactate Oxidase
	mg/dl	47.2	38.7	55.7	4.25	8.50	
LD (LDH)	U/l	512	435	589	38.50	77.00	P->L German methods 37°C
	U/l	370	314	426	28.00	56.00	P->L German methods 30°C
	U/l	260	221	299	19.50	39.00	P->L German methods 25°C
Lipase	U/l	68	55	81	6.50	13.00	Roche Colorimetric 37°C
Lithium	mmol/l	1.65	1.45	1.85	0.10	0.20	Spectrophotometric
	mg/dl	1.15	1.01	1.29	0.07	0.14	

## ROCHE COBAS SERIES® (LIQ CHEM ASY PREMIUM PLUS 3)

Cat. No. LAE4215 Lot No. 986UE

Size: 12 x 5 ml Expiry: 2019-12-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Magnesium	mmol/l	1.84	1.62	2.06	0.11	0.22	Xylidyl Blue
	mg/dl	4.47	3.94	5.00	0.27	0.53	
Phosphate Inorganic	mmol/l	2.13	1.81	2.45	0.16	0.32	Phosphomolybdate UV
	mg/dl	6.60	5.61	7.59	0.50	0.99	
Potassium	mmol/l	6.22	5.72	6.72	0.25	0.50	ISE indirect
Protein Total	g/l	84.7	67.8	102	8.45	16.90	Biuret reaction end point
	g/dl	8.47	6.78	10.2	0.85	1.69	
Sodium	mmol/l	168	160	176	4.00	8.00	ISE indirect
Triglycerides	mmol/l	4.24	3.56	4.92	0.34	0.68	Lipase/GPO-PAP no correction
	mg/dl	375	315	435	30.00	60.00	
UIBC	µmol/l	40.4	33.1	47.7	3.65	7.30	Direct Colorimetric
	µg/dl	226	185	267	20.50	41.00	
Urea	mmol/l	20.8	17.7	23.9	1.55	3.10	Urease kinetic
	mg/dl	125	106	144	9.50	19.00	
	mmol/l	20.8	17.7	23.9	1.55	3.10	BUN
	mg/dl	58.4	49.6	67.2	4.40	8.80	
Uric Acid (Urate)	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.39	8.16	10.6	0.62	1.23	

## RX SERIES® (LIQ CHEM ASY PREMIUM PLUS 3)

Cat. No. LAE4215 Lot No. 986UE

Size: 12 x 5 ml Expiry: 2019-12-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Albumin	g/l	49.6	42.2	57.0	3.70	7.40	Bromocresol Green
	g/dl	4.96	4.22	5.70	0.37	0.74	
Alkaline Phosphatase	U/l	293	249	337	22.00	44.00	AMP optimised to IFCC 37°C
	U/l	493	419	567	37.00	74.00	Diethanolamine buffer DEA 37°C
ALT (GPT)	U/l	243	194	292	24.50	49.00	Tris buffer without P5P 37°C
Amylase Pancreatic	U/l	309	263	355	23.00	46.00	Randox Liquid Ethylidene pNPG7 37°C
Amylase Total	U/l	347	295	399	26.00	52.00	Randox Liquid Ethylidene pNPG7 37°C
AST (GOT)	U/l	207	166	248	20.50	41.00	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	29.9	23.7	36.1	3.10	6.20	Enzymatic
Bile Acids	µmol/l	39.3	31.4	47.2	3.95	7.90	5th Generation Colorimetric
Bilirubin Direct	µmol/l	29.3	23.1	35.5	3.10	6.20	Diazo with Sulphanilic Acid
	mg/dl	1.71	1.35	2.07	0.18	0.36	
	µmol/l	28.4	22.4	34.4	3.00	6.00	Oxidation to Biliverdin/Vanadate
	mg/dl	1.66	1.31	2.01	0.18	0.35	
Bilirubin Total	µmol/l	99.6	78.7	121	10.45	20.90	Diazo with Sulphanilic Acid
	mg/dl	5.83	4.60	7.06	0.62	1.23	
	µmol/l	101	79.8	122	10.60	21.20	Oxidation to Biliverdin/Vanadate
	mg/dl	5.91	4.67	7.15	0.62	1.24	
Calcium	mmol/l	3.35	3.02	3.68	0.17	0.33	Arsenazo III
	mg/dl	13.4	12.1	14.7	0.65	1.30	
Chloride	mmol/l	118	109	127	4.50	9.00	ISE direct

## RX SERIES® (LIQ CHEM ASY PREMIUM PLUS 3)

Cat. No. LAE4215 Lot No. 986UE

Size: 12 x 5 ml Expiry: 2019-12-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Cholesterol	mmol/l	7.98	6.94	9.02	0.52	1.04	Cholesterol Oxidase
	mg/dl	308	268	348	20.00	40.00	
CK Total	U/l	521	427	615	47.00	94.00	CK-NAC (IFCC) 37°C
	U/l	481	394	568	43.50	87.00	CK-NAC substrate start (DGKC) 37°C
Creatinine	µmol/l	389	311	467	39.00	78.00	Alkaline picrate no deproteinization
	mg/dl	4.40	3.51	5.29	0.45	0.89	
	µmol/l	419	335	503	42.00	84.00	Enzymatic UV method
	mg/dl	4.73	3.79	5.67	0.47	0.94	
gamma-GT	U/l	197	167	227	15.00	30.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	19.3	16.4	22.2	1.45	2.90	Hexokinase
	mg/dl	348	296	400	26.00	52.00	
	mmol/l	20.4	17.3	23.5	1.55	3.10	Glucose oxidase
	mg/dl	368	312	424	28.00	56.00	
Iron	µmol/l	36.6	30.0	43.2	3.30	6.60	Colorimetric without ppt.
	µg/dl	205	168	242	18.50	37.00	
Lactate	mmol/l	5.04	4.13	5.95	0.46	0.91	Colorimetric Lactate Oxidase
	mg/dl	45.4	37.2	53.6	4.10	8.20	
LD (LDH)	U/l	499	424	574	37.50	75.00	P->L German methods 37°C
	U/l	256	218	294	19.00	38.00	L->P IFCC 37°C
Lipase	U/l	90	72	108	9.00	18.00	Randox Colorimetric 37°C
Lithium	mmol/l	1.59	1.40	1.78	0.10	0.19	Colorimetric
	mg/dl	1.10	0.972	1.23	0.06	0.13	
Magnesium	mmol/l	1.78	1.57	1.99	0.11	0.21	Xylidyl Blue
	mg/dl	4.33	3.82	4.84	0.26	0.51	
Phosphate Inorganic	mmol/l	2.18	1.85	2.51	0.17	0.33	Phosphomolybdate UV
	mg/dl	6.76	5.74	7.78	0.51	1.02	

## RX SERIES® (LIQ CHEM ASY PREMIUM PLUS 3)

Cat. No. LAE4215 Lot No. 986UE

Size: 12 x 5 ml Expiry: 2019-12-28

Analyte	unit	Target	Range		1SD	2SD	method <sub>s</sub>
			low	high			
Potassium	mmol/l	6.53	6.01	7.05	0.26	0.52	ISE direct
Protein Total	g/l	89.0	71.2	107	8.90	17.80	Biuret reaction end point
	g/dl	8.90	7.12	10.7	0.89	1.78	
Sodium	mmol/l	174	165	183	4.50	9.00	ISE direct
	mmol/l	158	150	166	4.00	8.00	Enzymatic
TIBC	μmol/l	75.5	59.6	91.4	7.95	15.90	Direct Colorimetric
	μg/dl	422	333	511	44.50	89.00	
Triglycerides	mmol/l	4.17	3.50	4.84	0.34	0.67	Lipase/GPO-PAP no correction
	mg/dl	369	310	428	29.50	59.00	
Urea	mmol/l	20.7	17.6	23.8	1.55	3.10	Urease kinetic
	mg/dl	124	106	142	9.00	18.00	
	mmol/l	20.7	17.6	23.8	1.55	3.10	BUN
	mg/dl	58.1	49.4	66.8	4.35	8.70	
Uric Acid (Urate)	mmol/l	0.58	0.51	0.66	0.04	0.08	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.74	8.48	11.0	0.63	1.26	
	mmol/l	0.58	0.50	0.65	0.04	0.08	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.73	8.47	11.0	0.63	1.26	

**SIEMENS ADVIA 1200/1650/1800/2400® (LIQ CHEM ASY PREMIUM PLUS 3)**
**Cat. No. LAE4215 Lot No. 986UE**
**Size: 12 x 5 ml Expiry: 2019-12-28**

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Albumin	g/l	50.7	43.1	58.3	3.80	7.60	Bromocresol Green
	g/dl	5.07	4.31	5.83	0.38	0.76	
Alkaline Phosphatase	U/l	298	253	343	22.50	45.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	253	202	304	25.50	51.00	Tris buffer without P5P 37°C
Amylase Pancreatic	U/l	293	249	337	22.00	44.00	Immuno-inhibition EPS substrate 37°C
Amylase Total	U/l	341	290	392	25.50	51.00	Siemens - blocked pNPG7 37°C
AST (GOT)	U/l	224	179	269	22.50	45.00	Tris buffer without P5P 37°C
Bilirubin Direct	µmol/l	25.6	20.2	31.0	2.70	5.40	Oxidation to Biliverdin/Vanadate
	mg/dl	1.50	1.18	1.82	0.16	0.32	
Bilirubin Total	µmol/l	96.6	76.3	117	10.15	20.30	Oxidation to Biliverdin/Vanadate
	mg/dl	5.65	4.46	6.84	0.60	1.19	
C-Reactive Protein	mg/l	46.9	37.5	56.3	4.70	9.40	Immunoturbidimetric
Calcium	mmol/l	3.36	3.02	3.70	0.17	0.34	Cresolphthalein complexone
	mg/dl	13.5	12.1	14.9	0.70	1.40	
	mmol/l	3.22	2.90	3.54	0.16	0.32	Arsenazo III
	mg/dl	12.9	11.6	14.2	0.65	1.30	
Cholesterol	mmol/l	7.87	6.85	8.89	0.51	1.02	Cholesterol Oxidase
	mg/dl	304	264	344	20.00	40.00	
CK Total	U/l	498	408	588	45.00	90.00	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	432	346	518	43.00	86.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.88	3.91	5.85	0.49	0.97	

**SIEMENS ADVIA 1200/1650/1800/2400® (LIQ CHEM ASY PREMIUM PLUS 3)**

Cat. No. LAE4215 Lot No. 986UE

Size: 12 x 5 ml Expiry: 2019-12-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
gamma-GT	U/l	207	176	238	15.50	31.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	19.8	16.8	22.8	1.50	3.00	Glucose oxidase
	mg/dl	357	303	411	27.00	54.00	
	mmol/l	20.0	17.0	23.0	1.50	3.00	Hexokinase
	mg/dl	360	306	414	27.00	54.00	
HDL - Cholesterol	mmol/l	2.49	2.12	2.86	0.19	0.37	Direct Clearance Method
	mg/dl	96.1	81.8	110	7.15	14.30	
Iron	µmol/l	36.7	30.1	43.3	3.30	6.60	Colorimetric without ppt.
	µg/dl	205	168	242	18.50	37.00	
LDL - Cholesterol	mmol/l	3.52	2.99	4.05	0.27	0.53	Direct Clearance Method
	mg/dl	136	115	157	10.50	21.00	
Magnesium	mmol/l	1.87	1.65	2.09	0.11	0.22	Xylidyl Blue
	mg/dl	4.54	4.01	5.07	0.27	0.53	
Phosphate Inorganic	mmol/l	2.12	1.80	2.44	0.16	0.32	Phosphomolybdate UV
	mg/dl	6.57	5.58	7.56	0.50	0.99	
Protein Total	g/l	90.4	72.3	109	9.05	18.10	Biuret reaction end point
	g/dl	9.04	7.23	10.9	0.90	1.81	
Triglycerides	mmol/l	4.31	3.62	5.00	0.35	0.69	Lipase/GPO-PAP no correction
	mg/dl	381	320	442	30.50	61.00	
Urea	mmol/l	21.2	18.0	24.4	1.60	3.20	Urease kinetic
	mg/dl	127	108	146	9.50	19.00	
	mmol/l	21.2	18.0	24.4	1.60	3.20	BUN
	mg/dl	59.5	50.6	68.4	4.45	8.90	
Uric Acid (Urate)	mmol/l	0.58	0.50	0.65	0.04	0.08	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.73	8.47	11.0	0.63	1.26	



**SIEMENS DIMENSION SERIES® (LIQ CHEM ASY PREMIUM PLUS 3)**

Cat. No. LAE4215 Lot No. 986UE

Size: 12 x 5 ml Expiry: 2019-12-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Albumin	g/l	50.9	43.3	58.5	3.80	7.60	Bromocresol Green
	g/dl	5.09	4.33	5.85	0.38	0.76	
Alkaline Phosphatase	U/l	253	215	291	19.00	38.00	Siemens Dimension AMP buffer 37°C
ALT (GPT)	U/l	245	196	294	24.50	49.00	Siemens Dade Standard Non IFCC Correlated 37°C
Amylase Total	U/l	381	324	438	28.50	57.00	Siemens 2-chloro-pNPG3 37°C
AST (GOT)	U/l	279	223	335	28.00	56.00	Siemens Dade Standard Non IFCC Correlated 37°C
Bicarbonate	mmol/l	28.8	22.8	34.8	3.00	6.00	Enzymatic
Bilirubin Direct	µmol/l	15.4	12.1	18.6	1.64	3.27	Diazo with Sulphanilic Acid
	mg/dl	0.899	0.708	1.09	0.10	0.19	
Bilirubin Total	µmol/l	86.8	68.6	105	9.10	18.20	Diazo with Sulphanilic Acid
	mg/dl	5.08	4.01	6.15	0.54	1.07	
C-Reactive Protein	mg/l	53.5	42.8	64.2	5.35	10.70	Turbidimetric
Calcium	mmol/l	3.17	2.85	3.49	0.16	0.32	Cresolphthalein complexone (CPC)
	mg/dl	12.7	11.4	14.0	0.65	1.30	
Chloride	mmol/l	118	109	127	4.50	9.00	ISE indirect
Cholesterol	mmol/l	7.37	6.41	8.33	0.48	0.96	Dimension-Siemens reagents
	mg/dl	284	247	321	18.50	37.00	
CK Total	U/l	463	380	546	41.50	83.00	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	409	327	491	41.00	82.00	Alkaline picrate no deproteinization
	mg/dl	4.62	3.70	5.54	0.46	0.92	
Digoxin	nmol/l	3.44	2.75	4.13	0.35	0.69	Enzyme Immunoassay
	ng/ml	2.69	2.15	3.23	0.27	0.54	

## SIEMENS DIMENSION SERIES® (LIQ CHEM ASY PREMIUM PLUS 3)

Cat. No. LAE4215 Lot No. 986UE

Size: 12 x 5 ml Expiry: 2019-12-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Gentamicin	µmol/l	14.8	11.8	17.7	1.49	2.97	Turbidimetric
	µg/ml	7.06	5.64	8.48	0.71	1.42	
gamma-GT	U/l	249	212	286	18.50	37.00	Siemens Dimension (non IFCC) 37°C
Glucose	mmol/l	19.7	16.7	22.7	1.50	3.00	Hexokinase
	mg/dl	355	301	409	27.00	54.00	
HDL - Cholesterol	mmol/l	2.62	2.23	3.01	0.20	0.39	Direct HDL PEGME
	mg/dl	101	86.1	116	7.45	14.90	
Iron	µmol/l	34.6	28.4	40.8	3.10	6.20	Colorimetric without ppt.
	µg/dl	193	159	227	17.00	34.00	
Lactate	mmol/l	5.10	4.18	6.02	0.46	0.92	UV LDH
	mg/dl	46.0	37.7	54.3	4.15	8.30	
LD (LDH)	U/l	268	228	308	20.00	40.00	Siemens Dimension L-P Non IFCC 37°C
LDL - Cholesterol	mmol/l	3.47	2.95	3.99	0.26	0.52	Selective detergent methods
	mg/dl	134	114	154	10.00	20.00	
Lipase	U/l	290	233	347	28.50	57.00	Colorimetric Siemens Dimension (LIPL Kit) 37°C
Magnesium	mmol/l	1.79	1.57	2.00	0.11	0.22	Methylthymol blue
	mg/dl	4.34	3.82	4.86	0.26	0.52	
Paracetamol	mmol/l	1.05	0.84	1.26	0.11	0.21	Enzymatic
	mg/l	159	127	191	16.00	32.00	
Phosphate Inorganic	mmol/l	2.12	1.80	2.44	0.16	0.32	Phosphomolybdate UV
	mg/dl	6.58	5.58	7.58	0.50	1.00	
Potassium	mmol/l	5.92	5.45	6.39	0.24	0.47	ISE indirect
Protein Total	g/l	89.3	71.4	107	8.95	17.90	Biuret reaction end point
	g/dl	8.93	7.14	10.7	0.90	1.79	

## SIEMENS DIMENSION SERIES® (LIQ CHEM ASY PREMIUM PLUS 3)

Cat. No. LAE4215 Lot No. 986UE

Size: 12 x 5 ml Expiry: 2019-12-28

Analyte	unit	Target	Range		1SD	2SD	method <sub>s</sub>
			low	high			
Salicylate	mmol/l	3.24	2.60	3.89	0.32	0.64	Colorimetric
	mg/dl	44.8	35.9	53.7	4.45	8.90	
Sodium	mmol/l	162	154	170	4.00	8.00	ISE indirect
Theophylline	µmol/l	152	121	182	15.25	30.50	Turbidimetric
	µg/ml	27.3	21.8	32.8	2.75	5.50	
Triglycerides	mmol/l	4.04	3.39	4.68	0.32	0.65	Lipase/GPO-PAP no correction
	mg/dl	357	300	414	28.50	57.00	
Urea	mmol/l	21.4	18.2	24.6	1.60	3.20	BUN
	mg/dl	59.9	50.9	68.9	4.50	9.00	
Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.07	7.90	10.2	0.59	1.17	