

## PRODUCT INFORMATION

HE1532 / HS2611

1103UE

The reconstituted stability for Human Assayed Multi-Sera Level 3 lot 1103UE for ALT (GPT) is **6 hours when stored at +15°C to +25°C**.  
ALT (GPT) is stable for 7 days at +2°C to +8°C, and 28 days when frozen once at -18°C to -24°C.

CCS6481

# HUMAN ASSAYED MULTI-SERA - LEVEL 3 (HUM ASY CONTROL 3)

<b>CAT. NO.</b> HE1532	<b>GTIN:</b> 05055273203608	<b>SIZE:</b> 20 x 5ml
<b>CAT. NO.</b> HS2611	<b>GTIN:</b> 05055273203813	<b>SIZE:</b> 5 x 5ml
<b>LOT NO.</b> 1103UE	<b>EXPIRY:</b> 2023-07-28	

**INTENDED USE**

This product is intended for *in vitro* diagnostic use, in the quality control of diagnostic assays. The Human Assayed Multi-sera is for the control of accuracy.

**DEVICE DESCRIPTION**

The Human Assayed Multi-sera is supplied at 2 levels, level 2 and 3. Target values and ranges are supplied for the analytes listed in the values section at both 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). Reconstituted serum is stable for 8 hours at +15°C to +25°C or 7 days at +2°C to +8°C, and 28 days when frozen once at -18°C to -24°C. (See Limitations)

**UNOPENED:** Store refrigerated (+2°C to +8°C). Stable to expiration date printed on individual vials.

**LIMITATIONS**

For Total & Prostatic Acid Phosphatase, the material should be stabilised by adding 1 drop (25µl - 30µl) of 0.7M Acetic acid solution to 1ml of the serum exactly 30 minutes after reconstitution. After stabilisation Total and Prostatic Acid Phosphatase is stable for 2 hours at +15°C to +25°C, 2 days at +2°C to +8°C, and 28 days when frozen once at -18°C to -24°C.

Alkaline Phosphatase levels in the reconstituted serum will rise over the stability period. It is recommended that the reconstituted serum is allowed to stand for 1 hour at +15°C to +25°C before measurement.

ALT is stable for 6 hours at +15°C to +25°C or 7 days at +2°C to +8°C, and 28 days when frozen once at -18°C to -24°C.

Bilirubin in the serum is light sensitive and it is recommended that the serum is stored in the dark. Stored in the dark, it is stable for 4 days at +2°C to +8°C. Do not store at +15°C to +25°C. Do not freeze.

NEFA is stable for 1 day at +2°C to +8°C.

Total PSA is stable for 4 days at +2°C to +8°C, or 28 days in aliquots frozen at -18°C to -24°C.

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

Different lot numbers of this control should not be interchanged, as the values assigned to the controls vary from lot to lot.

The control should not be used as a calibration material.

**PREPARATION FOR USE**

The Human Assayed Multi-sera is supplied lyophilised.

- Carefully reconstitute each vial of lyophilised serum with exactly 5ml of distilled water at +15°C to +25°C. Close the bottle and allow to stand for 30 minutes before use. Ensure contents are completely dissolved by swirling gently. Avoid formation of foam. Do not shake.
- Refer to the Control section of the individual analyser application.
- Refrigerate any unused material. Prior to reuse, mix contents thoroughly.

**MATERIALS PROVIDED**

Human Assayed Multi-sera - Level 3 20 x 5ml / 5 x 5ml

**MATERIALS REQUIRED BUT NOT PROVIDED**

Volumetric pipette

**ASSIGNED VALUES**

Each batch of assayed human serum is submitted to reference laboratories for assignment against international Reference Standards. Where international Reference Standards are unavailable, Reference Methods are used. Values are also collected from approx. 3000 laboratories worldwide and using a unique statistical analysis, a value is assigned.

With each batch, a control range is provided for individual parameters and each parameter method. The control range is equivalent to the assigned mean  $\pm 2S.D.$  This results in an assayed serum with extremely accurate values, which may be confidently used by laboratories to ensure the accuracy of their methods.

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

**NOTES**

® All trademarks recognised.

- (1) Applies only in Germany. Ranges established according to the Guidelines of the Federal Chamber of Physicians in Germany.
- (2) Values established by reference laboratories officially recognised by the Federal Chamber of Physicians in Germany.
- (3) DGKC: German Society for Clinical Chemistry.
- (4) IFCC: International Federation of Clinical Chemistry.
- (5) SCE: Scandinavian Committee on Enzymes.

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Dungloe, Donegal,  
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**Abbott Alinity/ Architect c/ci Systems®**
**ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	28.7	24.4	33.0	2.15	4.30	Bromocresol Green
	g/dl	2.87	2.44	3.30	0.22	0.43	
	g/l	27.9	23.7	32.1	2.10	4.20	Bromocresol Purple
	g/dl	2.79	2.37	3.21	0.21	0.42	
Alkaline Phosphatase	U/l	450	382	518	34.00	68.00	Diethanolamine buffer DEA 37°C
	U/l	323	275	371	24.00	48.00	AMP optimised to IFCC 37°C
	U/l	323	274	372	24.50	49.00	AMP optimised to NVKC/SFBC 37°C
	U/l	319	271	367	24.00	48.00	AMP non-optimised 37°C
ALT (GPT)	U/l	141	113	169	14.00	28.00	Tris buffer without P5P 37°C
Amylase Pancreatic	U/l	258	219	297	19.50	39.00	Immunoinhibition EPS substrate 37°C
Amylase Total	U/l	319	271	367	24.00	48.00	Abbott Architect Non-IFCC Cal. 37°C
	U/l	351	298	404	26.50	53.00	Abbott Architect IFCC Cal. 37°C
AST (GOT)	U/l	151	121	181	15.00	30.00	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	12.4	9.83	15.0	1.29	2.57	Enzymatic
Bile Acids	µmol/l	45.8	36.6	55.0	4.60	9.20	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	28.9	22.8	35.0	3.05	6.10	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.69	1.33	2.05	0.18	0.36	
	µmol/l	28.2	22.3	34.1	2.95	5.90	Diazo with Sulphanilic Acid
	mg/dl	1.65	1.30	2.00	0.18	0.35	
	µmol/l	28.6	22.6	34.6	3.00	6.00	Diazo with Dichloroaniline (DCA)
	mg/dl	1.67	1.32	2.02	0.18	0.35	

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Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Bilirubin Total	µmol/l	83.4	65.9	101	8.75	17.50	Diazo with Dichloroaniline (DCA)
	mg/dl	4.88	3.86	5.90	0.51	1.02	
	µmol/l	84.8	67.0	103	8.90	17.80	Diazo with Sulphanilic Acid
	mg/dl	4.96	3.92	6.00	0.52	1.04	
	µmol/l	92.7	73.3	112	9.70	19.40	Dichlorophenyl Diazonium (DPD)
	mg/dl	5.42	4.29	6.55	0.57	1.13	
	µmol/l	83.5	66.0	101	8.75	17.50	Diazonium ion
	mg/dl	4.88	3.86	5.90	0.51	1.02	
Calcium	mmol/l	3.09	2.78	3.40	0.16	0.31	Arsenazo III
	mg/dl	12.4	11.1	13.7	0.65	1.30	
Chloride	mmol/l	120	111	129	4.50	9.00	ISE indirect
Cholesterol	mmol/l	7.10	6.18	8.02	0.46	0.92	Cholesterol Oxidase - Abell Kendall
	mg/dl	274	239	309	17.50	35.00	
Cholinesterase	U/l	5930	4744	7116	593.00	1186.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	521	427	615	47.00	94.00	CK-NAC serum start (DGKC) 37°C
	U/l	515	423	607	46.00	92.00	CK-NAC (IFCC) 37°C
	U/l	519	426	612	46.50	93.00	Abbott CK-NAC (IFCC) 37°C
Copper	µmol/l	18.6	14.9	22.3	1.85	3.70	Colorimetric
	µg/dl	118	94.8	141	11.60	23.20	
Creatinine	µmol/l	397	317	477	40.00	80.00	Alkaline picrate no deproteinization
	mg/dl	4.49	3.58	5.40	0.46	0.91	
	µmol/l	390	312	468	39.00	78.00	Enzymatic UV method
	mg/dl	4.41	3.53	5.29	0.44	0.88	
	µmol/l	394	315	473	39.50	79.00	Creatinine PAP method
	mg/dl	4.45	3.56	5.34	0.45	0.89	


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**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Creatinine	μmol/l	397	317	477	40.00	80.00	Jaffe rate blanked
	mg/dl	4.49	3.58	5.40	0.46	0.91	
	μmol/l	398	318	478	40.00	80.00	IDMS traceable
	mg/dl	4.50	3.59	5.41	0.46	0.91	
gamma-GT	U/l	164	139	189	12.50	25.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	162	138	186	12.00	24.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	15.4	13.1	17.7	1.15	2.30	Hexokinase
	mg/dl	278	236	320	21.00	42.00	
	mmol/l	15.2	12.9	17.5	1.15	2.30	Glucose oxidase
	mg/dl	274	232	316	21.00	42.00	
HDL - Cholesterol	mmol/l	2.36	2.01	2.71	0.18	0.35	Direct HDL PPD
	mg/dl	91.1	77.6	105	6.75	13.50	
	mmol/l	2.42	2.06	2.78	0.18	0.36	Direct Clearance Method
	mg/dl	93.4	79.5	107	6.95	13.90	
	mmol/l	2.36	2.00	2.72	0.18	0.36	HDL - Ultra
mg/dl	91.1	77.2	105	6.95	13.90		
Iron	μmol/l	34.6	28.4	40.8	3.10	6.20	Colorimetric with ppt.
	μg/dl	193	159	227	17.00	34.00	
	μmol/l	34.9	28.6	41.2	3.15	6.30	Colorimetric without ppt.
	μg/dl	195	160	230	17.50	35.00	
Lactate	mmol/l	5.41	4.43	6.39	0.49	0.98	Colorimetric Lactate Oxidase
	mg/dl	48.7	39.9	57.5	4.40	8.80	
LD (LDH)	U/l	362	308	416	27.00	54.00	L->P 37°C
	U/l	363	309	417	27.00	54.00	L->P IFCC 37°C
Lipase	U/l	61	49	73	6.00	12.00	Other Colorimetric 37°C

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Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Lithium	mmol/l	2.04	1.80	2.28	0.12	0.24	Spectrophotometric
	mg/dl	1.42	1.25	1.59	0.09	0.17	
Magnesium	mmol/l	1.65	1.45	1.85	0.10	0.20	Arsenazo III
	mg/dl	4.01	3.52	4.50	0.25	0.49	
	mmol/l	1.66	1.46	1.86	0.10	0.20	Xylidyl Blue
	mg/dl	4.03	3.55	4.51	0.24	0.48	
	mmol/l	1.67	1.47	1.87	0.10	0.20	Enzymatic
	mg/dl	4.06	3.57	4.55	0.25	0.49	
Osmolality	mOsm/kg	351	281	421	35.00	70.00	Calculated
Phosphate Inorganic	mmol/l	2.13	1.81	2.45	0.16	0.32	Phosphomolybdate enzymatic
	mg/dl	6.60	5.61	7.59	0.50	0.99	
	mmol/l	2.16	1.84	2.48	0.16	0.32	Phosphomolybdate UV
	mg/dl	6.70	5.70	7.70	0.50	1.00	
Potassium	mmol/l	6.33	5.83	6.83	0.25	0.50	ISE method - indirect
Protein Total	g/l	44.0	35.2	52.8	4.40	8.80	Biuret reaction end point
	g/dl	4.40	3.52	5.28	0.44	0.88	
	g/l	43.0	34.4	51.6	4.30	8.60	Biuret reaction kinetic
	g/dl	4.30	3.44	5.16	0.43	0.86	
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
TIBC	µmol/l	38.9	30.7	47.1	4.10	8.20	FE+UIBC(saturation with iron)
	µg/dl	217	172	262	22.50	45.00	
	µmol/l	40.8	32.2	49.4	4.30	8.60	Calculated from Transferrin
	µg/dl	228	180	276	24.00	48.00	
Triglycerides	mmol/l	2.88	2.42	3.34	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	255	214	296	20.50	41.00	

Abbott Alinity/ Architect c/ci Systems®		ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)					
Lot. No. 1103UE Cat. No. HE1532 / HS2611							
Size 20 x 5 ml / 5 x 5 ml		Expiry 2023-07-28		Range			
Analyte	unit	Target	low	high	1SD	2SD	methods
Triglycerides	mmol/l	2.89	2.43	3.35	0.23	0.46	L/G Kinase EP. no correction
	mg/dl	256	215	297	20.50	41.00	
	mmol/l	2.87	2.41	3.33	0.23	0.46	Lipase/Glycerol Dehydrogenase
	mg/dl	254	213	295	20.50	41.00	
UIBC	µmol/l	4.40	3.61	5.19	0.40	0.79	Direct Colorimetric
	µg/dl	24.6	20.2	29.0	2.20	4.40	
Urea	mmol/l	20.4	17.4	23.4	1.50	3.00	Urease end point
	mg/dl	123	105	141	9.00	18.00	
	mmol/l	20.2	17.2	23.2	1.50	3.00	Urease kinetic
	mg/dl	121	103	139	9.00	18.00	
Uric Acid (Urate)	mmol/l	20.2	17.2	23.2	1.50	3.00	BUN
	mg/dl	56.7	48.2	65.2	4.25	8.50	
	mmol/l	0.56	0.48	0.63	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.32	8.11	10.5	0.61	1.21	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.31	8.10	10.5	0.61	1.21	
	mmol/l	0.56	0.48	0.63	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.34	8.11	10.6	0.62	1.23	



## ABX Pentra 400®

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Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	28.5	24.2	32.8	2.15	4.30	Bromocresol Green
	g/dl	2.85	2.42	3.28	0.22	0.43	
ALT (GPT)	U/l	156	125	187	15.50	31.00	Tris buffer without P5P 37°C
AST (GOT)	U/l	166	133	199	16.50	33.00	Tris buffer without P5P 37°C
Bilirubin Direct	µmol/l	26.3	20.8	31.8	2.75	5.50	Diazo with Dichloroaniline (DCA)
	mg/dl	1.54	1.22	1.86	0.16	0.32	
Bilirubin Total	µmol/l	88.6	70.0	107	9.30	18.60	Diazo with Dichloroaniline (DCA)
	mg/dl	5.18	4.10	6.26	0.54	1.08	
Calcium	mmol/l	3.18	2.86	3.50	0.16	0.32	Arsenazo III
	mg/dl	12.7	11.5	13.9	0.60	1.20	
Cholesterol	mmol/l	7.33	6.37	8.29	0.48	0.96	Cholesterol Oxidase - Abell Kendall
	mg/dl	283	246	320	18.50	37.00	
Creatinine	µmol/l	371	297	445	37.00	74.00	Alkaline picrate no deproteinization
	mg/dl	4.19	3.36	5.02	0.42	0.83	
gamma-GT	U/l	170	145	195	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	15.3	13.0	17.6	1.15	2.30	Glucose oxidase
	mg/dl	276	234	318	21.00	42.00	
Magnesium	mmol/l	1.64	1.44	1.84	0.10	0.20	Xylidyl Blue
	mg/dl	3.99	3.50	4.48	0.25	0.49	
Phosphate Inorganic	mmol/l	2.36	2.00	2.72	0.18	0.36	Phosphomolybdate UV
	mg/dl	7.32	6.20	8.44	0.56	1.12	

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### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Potassium	mmol/l	6.11	5.62	6.60	0.25	0.49	ISE method - indirect
Protein Total	g/l	45.4	36.4	54.4	4.50	9.00	Biuret reaction end point
	g/dl	4.54	3.64	5.44	0.45	0.90	
Sodium	mmol/l	156	149	163	3.50	7.00	ISE method - indirect
Triglycerides	mmol/l	2.85	2.40	3.30	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	252	212	292	20.00	40.00	
Urea	mmol/l	18.4	15.6	21.2	1.40	2.80	Urease kinetic
	mg/dl	111	93.8	128	8.60	17.20	
	mmol/l	18.4	15.6	21.2	1.40	2.80	BUN
	mg/dl	51.6	43.9	59.3	3.85	7.70	
Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.07	7.90	10.2	0.59	1.17	
	mmol/l	0.53	0.46	0.60	0.03	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	8.94	7.78	10.1	0.58	1.16	

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Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	26.9	22.9	30.9	2.00	4.00	Bromocresol Green
	g/dl	2.69	2.29	3.09	0.20	0.40	
	g/l	27.9	23.7	32.1	2.10	4.20	Bromocresol Purple
	g/dl	2.79	2.37	3.21	0.21	0.42	
Alkaline Phosphatase	U/l	481	409	553	36.00	72.00	Diethanolamine buffer DEA 37°C
	U/l	384	327	441	28.50	57.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	145	116	174	14.50	29.00	Tris buffer without P5P 37°C
	U/l	144	115	173	14.50	29.00	Beckman (Extinction Coefficient) 37°C
Amylase Total	U/l	298	253	343	22.50	45.00	Beckman Coulter - blocked pNPG7 37°C
	U/l	291	247	335	22.00	44.00	Beckman CNPG3 (Extinction Coeff) 37°C
AST (GOT)	U/l	164	131	197	16.50	33.00	Tris buffer without P5P 37°C
	U/l	163	130	196	16.50	33.00	Beckman (Extinction Coefficient) 37°C
Bicarbonate	mmol/l	14.1	11.2	17.0	1.45	2.90	Enzymatic
Bilirubin Direct	µmol/l	20.8	16.4	25.2	2.20	4.40	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.22	0.959	1.48	0.13	0.26	
Bilirubin Total	µmol/l	83.3	65.8	101	8.75	17.50	Diazo with Dichloroaniline (DCA)
	mg/dl	4.87	3.85	5.89	0.51	1.02	
	µmol/l	82.4	65.1	99.7	8.65	17.30	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.82	3.81	5.83	0.51	1.01	
	µmol/l	81.5	64.4	98.6	8.55	17.10	DPD (Beckman AU)
	mg/dl	4.77	3.77	5.77	0.50	1.00	



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#### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Calcium	mmol/l	3.09	2.78	3.40	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.4	11.1	13.7	0.65	1.30	
	mmol/l	3.08	2.77	3.39	0.16	0.31	Arsenazo III
	mg/dl	12.3	11.1	13.5	0.60	1.20	
Chloride	mmol/l	119	109	129	5.00	10.00	ISE indirect
Cholesterol	mmol/l	7.27	6.32	8.22	0.48	0.95	Cholesterol Oxidase - Abell Kendall
	mg/dl	281	244	318	18.50	37.00	
	mmol/l	7.44	6.47	8.41	0.49	0.97	Cholesterol Oxidase - IDMS
	mg/dl	287	250	324	18.50	37.00	
Cholinesterase	U/l	4942	3954	5930	494.00	988.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	528	433	623	47.50	95.00	CK-NAC substrate start (DGKC) 37°C
	U/l	526	431	621	47.50	95.00	CK-NAC (IFCC) 37°C
	U/l	516	423	609	46.50	93.00	Beckman CK-NAC (Extinction Coeff) 37°C
Creatinine	µmol/l	358	286	430	36.00	72.00	Alkaline picrate no deproteinization
	mg/dl	4.05	3.23	4.87	0.41	0.82	
	µmol/l	393	315	471	39.00	78.00	Enzymatic UV method
	mg/dl	4.44	3.56	5.32	0.44	0.88	
	µmol/l	398	319	477	39.50	79.00	Creatinine PAP method
	mg/dl	4.50	3.60	5.40	0.45	0.90	
	µmol/l	364	291	437	36.50	73.00	Jaffe rate blanked
	mg/dl	4.11	3.29	4.93	0.41	0.82	
	µmol/l	368	295	441	36.50	73.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.16	3.33	4.99	0.42	0.83	
	µmol/l	377	301	453	38.00	76.00	IDMS traceable
	mg/dl	4.26	3.40	5.12	0.43	0.86	



## Beckman Coulter AU Series®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
D-3-Hydroxybutyrate	mmol/l	1.15	0.97	1.33	0.09	0.18	Tris buffer 100mmol pH 8.5
gamma-GT	U/l	173	147	199	13.00	26.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	169	143	195	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	167	142	192	12.50	25.00	Beckman Szasz (Extinction Coeff) 37°C
GLDH	U/l	34	27	41	3.50	7.00	Triethanolamine buffer 50 mmol 37°C
Glucose	mmol/l	15.6	13.2	18.0	1.20	2.40	Hexokinase
	mg/dl	281	238	324	21.50	43.00	
	mmol/l	15.3	13.0	17.6	1.15	2.30	Glucose oxidase
	mg/dl	276	234	318	21.00	42.00	
HDL - Cholesterol	mmol/l	2.60	2.21	2.99	0.20	0.39	Direct HDL Immunoseparation
	mg/dl	100	85.3	115	7.35	14.70	
	mmol/l	2.48	2.11	2.85	0.19	0.37	Direct Clearance Method
	mg/dl	95.7	81.4	110	7.15	14.30	
	mmol/l	2.37	2.01	2.73	0.18	0.36	HDL - Ultra
	mg/dl	91.5	77.6	105	6.95	13.90	
Iron	µmol/l	36.6	30.0	43.2	3.30	6.60	Colorimetric with ppt.
	µg/dl	205	168	242	18.50	37.00	
	µmol/l	35.7	29.3	42.1	3.20	6.40	Colorimetric without ppt.
	µg/dl	200	164	236	18.00	36.00	
Lactate	mmol/l	5.18	4.25	6.11	0.47	0.93	Colorimetric Lactate Oxidase
	mg/dl	46.7	38.3	55.1	4.20	8.40	
LD (LDH)	U/l	360	306	414	27.00	54.00	L->P 37°C
	U/l	798	679	917	59.50	119.00	P->L Scandinavian & Dutch 37°C
	U/l	363	309	417	27.00	54.00	L->P IFCC 37°C
	U/l	346	294	398	26.00	52.00	L to P Beckman (Extinction Coeff) 37°C



### Beckman Coulter AU Series®

### ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

#### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Lipase	U/l	66	53	79	6.50	13.00	Other Colorimetric 37°C
	U/l	89	71	107	9.00	18.00	Randox Colorimetric 37°C
Lithium	mmol/l	2.06	1.81	2.31	0.13	0.25	Spectrophotometric
	mg/dl	1.43	1.26	1.60	0.09	0.17	
Magnesium	mmol/l	1.69	1.49	1.89	0.10	0.20	Xylidyl Blue
	mg/dl	4.11	3.62	4.60	0.25	0.49	
Osmolality	mOsm/kg	342	274	410	34.00	68.00	Calculated
Phosphate Inorganic	mmol/l	2.18	1.86	2.50	0.16	0.32	Phosphomolybdate UV
	mg/dl	6.76	5.77	7.75	0.50	0.99	
Potassium	mmol/l	6.30	5.79	6.81	0.26	0.51	ISE method - indirect
Protein Total	g/l	43.8	35.0	52.6	4.40	8.80	Biuret reaction end point
	g/dl	4.38	3.50	5.26	0.44	0.88	
	g/l	43.9	35.1	52.7	4.40	8.80	Biuret reaction kinetic
	g/dl	4.39	3.51	5.27	0.44	0.88	
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
TIBC	µmol/l	40.4	31.9	48.9	4.25	8.50	FE+UIBC(saturation with iron)
	µg/dl	226	178	274	24.00	48.00	
Triglycerides	mmol/l	2.90	2.44	3.36	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	257	216	298	20.50	41.00	
	mmol/l	2.91	2.44	3.38	0.24	0.47	L/G Kinase EP. no correction
	mg/dl	258	216	300	21.00	42.00	
Urea	mmol/l	20.2	17.2	23.2	1.50	3.00	Urease end point
	mg/dl	121	103	139	9.00	18.00	
	mmol/l	20.1	17.1	23.1	1.50	3.00	Urease kinetic
	mg/dl	121	103	139	9.00	18.00	

**Beckman Coulter AU Series®**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Urea	mmol/l	20.1	17.1	23.1	1.50	3.00	BUN
	mg/dl	56.4	47.9	64.9	4.25	8.50	
Uric Acid (Urate)	mmol/l	0.58	0.50	0.65	0.04	0.08	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.68	8.42	10.9	0.63	1.26	
	mmol/l	0.57	0.50	0.65	0.04	0.08	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.63	8.37	10.9	0.63	1.26	
	mmol/l	0.57	0.49	0.64	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.53	8.28	10.8	0.63	1.25	

## Beckman CX4/5/7/9/LX20®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	28.7	24.4	33.0	2.15	4.30	Bromocresol Purple
	g/dl	2.87	2.44	3.30	0.22	0.43	
Alkaline Phosphatase	U/l	350	298	402	26.00	52.00	p-Nitrophenylphosphate AMP 37°C
ALT (GPT)	U/l	135	108	162	13.50	27.00	Tris buffer without P5P 37°C
Amylase Total	U/l	302	257	347	22.50	45.00	Beckman Synchron AMY7 37°C
AST (GOT)	U/l	148	118	178	15.00	30.00	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	13.3	10.6	16.0	1.35	2.70	Differential rate pH change
Bilirubin Total	µmol/l	81.6	64.5	98.7	8.55	17.10	Diazo with Sulphanilic Acid
	mg/dl	4.77	3.77	5.77	0.50	1.00	
Calcium	mmol/l	3.00	2.70	3.30	0.15	0.30	Ion selective electrode
	mg/dl	12.0	10.8	13.2	0.60	1.20	
Chloride	mmol/l	120	110	130	5.00	10.00	ISE indirect
Cholesterol	mmol/l	7.33	6.38	8.28	0.48	0.95	Cholesterol Oxidase - Abell Kendall
	mg/dl	283	246	320	18.50	37.00	
CK Total	U/l	537	440	634	48.50	97.00	Monothioglycerol 37°C
Creatinine	µmol/l	389	311	467	39.00	78.00	IDMS traceable
	mg/dl	4.40	3.51	5.29	0.45	0.89	
gamma-GT	U/l	135	115	155	10.00	20.00	Gamma glutamyl-4-nitroanilide 37°C
Glucose	mmol/l	15.1	12.9	17.3	1.10	2.20	Hexokinase
	mg/dl	272	232	312	20.00	40.00	
	mmol/l	15.1	12.8	17.4	1.15	2.30	Glucose oxidase
	mg/dl	272	231	313	20.50	41.00	



## Beckman CX4/5/7/9/LX20®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
LD (LDH)	U/l	297	252	342	22.50	45.00	L->P 37°C
Magnesium	mmol/l	1.65	1.45	1.85	0.10	0.20	Calmagite
	mg/dl	4.01	3.52	4.50	0.25	0.49	
Phosphate Inorganic	mmol/l	2.25	1.92	2.58	0.17	0.33	Phosphomolybdate UV
	mg/dl	6.98	5.95	8.01	0.52	1.03	
Potassium	mmol/l	6.37	5.86	6.88	0.26	0.51	ISE method - indirect
Protein Total	g/l	43.7	35.0	52.4	4.35	8.70	Biuret reaction end point
	g/dl	4.37	3.50	5.24	0.44	0.87	
	g/l	43.1	34.5	51.7	4.30	8.60	Biuret reaction kinetic
	g/dl	4.31	3.45	5.17	0.43	0.86	
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
Triglycerides	mmol/l	3.02	2.53	3.51	0.25	0.49	L/G Kinase EP. no correction
	mg/dl	267	224	310	21.50	43.00	
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	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.11	7.93	10.3	0.59	1.18	

## Beckman DxC600/800®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	28.8	24.5	33.1	2.15	4.30	Bromocresol Purple
	g/dl	2.88	2.45	3.31	0.22	0.43	
Alkaline Phosphatase	U/l	343	292	394	25.50	51.00	AMP optimised to IFCC 37°C
	U/l	348	296	400	26.00	52.00	AMP non-optimised 37°C
ALT (GPT)	U/l	135	108	162	13.50	27.00	Tris buffer without P5P 37°C
	U/l	130	104	156	13.00	26.00	Tris buffer SCE 37°C
Amylase Total	U/l	299	254	344	22.50	45.00	Beckman Synchron AMY7 37°C
AST (GOT)	U/l	148	118	178	15.00	30.00	Tris buffer without P5P 37°C
	U/l	145	116	174	14.50	29.00	Tris buffer SCE 37°C
Bicarbonate	mmol/l	13.0	10.3	15.7	1.35	2.70	Differential rate pH change
	mmol/l	12.8	10.1	15.5	1.35	2.70	Ion selective electrode
Bilirubin Direct	µmol/l	15.8	12.5	19.1	1.65	3.30	Diazo/ Sulphanilic Beckman DxC
	mg/dl	0.924	0.731	1.12	0.10	0.19	
Bilirubin Total	µmol/l	81.7	64.5	98.9	8.60	17.20	Diazo with Sulphanilic Acid
	mg/dl	4.78	3.77	5.79	0.51	1.01	
Calcium	mmol/l	3.01	2.71	3.31	0.15	0.30	Ion selective electrode
	mg/dl	12.1	10.9	13.3	0.60	1.20	
Chloride	mmol/l	120	110	130	5.00	10.00	ISE indirect
Cholesterol	mmol/l	7.27	6.33	8.21	0.47	0.94	Cholesterol Oxidase - Abell Kendall
	mg/dl	281	244	318	18.50	37.00	
	mmol/l	7.29	6.35	8.23	0.47	0.94	Cholesterol Oxidase - IDMS
	mg/dl	281	245	317	18.00	36.00	


**Beckman DxC600/800®**
**ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
CK Total	U/l	535	438	632	48.50	97.00	Monothioglycerol 37°C
	U/l	529	434	624	47.50	95.00	Creatinine phosphate substrate Start 37°C
Creatinine	µmol/l	383	307	459	38.00	76.00	Alkaline picrate no deproteinization
	mg/dl	4.33	3.47	5.19	0.43	0.86	
	µmol/l	379	303	455	38.00	76.00	Jaffe rate blanked
	mg/dl	4.28	3.42	5.14	0.43	0.86	
IDMS traceable	µmol/l	386	309	463	38.50	77.00	
	mg/dl	4.36	3.49	5.23	0.44	0.87	
gamma-GT	U/l	134	114	154	10.00	20.00	Gamma glutamyl-4-nitroanilide 37°C
Glucose	mmol/l	15.2	12.9	17.5	1.15	2.30	Hexokinase
	mg/dl	274	232	316	21.00	42.00	
	mmol/l	15.0	12.7	17.3	1.15	2.30	Glucose oxidase
	mg/dl	270	229	311	20.50	41.00	
HDL - Cholesterol	mmol/l	2.43	2.06	2.80	0.19	0.37	Direct HDL PPD
	mg/dl	93.8	79.5	108	7.15	14.30	
	mmol/l	2.41	2.05	2.77	0.18	0.36	HDL - Ultra
	mg/dl	93.0	79.1	107	6.95	13.90	
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	4.98	4.08	5.88	0.45	0.90	Colorimetric Lactate Oxidase
	mg/dl	44.9	36.8	53.0	4.05	8.10	
LD (LDH)	U/l	296	251	341	22.50	45.00	L->P 37°C
	U/l	985	837	1133	74.00	148.00	Pyruvate 1.4 mM - Beckman LD-P 37°C
	U/l	297	253	341	22.00	44.00	L->P IFCC 37°C

## Beckman DxC600/800®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Lipase	U/l	72	58	86	7.00	14.00	Other Colorimetric 37°C
Lithium	mmol/l	2.11	1.85	2.37	0.13	0.26	Spectrophotometric
	mg/dl	1.47	1.28	1.66	0.10	0.19	
Magnesium	mmol/l	1.64	1.44	1.84	0.10	0.20	Calmagite
	mg/dl	3.99	3.50	4.48	0.25	0.49	
Phosphate Inorganic	mmol/l	2.20	1.87	2.53	0.17	0.33	Phosphomolybdate enzymatic
	mg/dl	6.82	5.80	7.84	0.51	1.02	
	mmol/l	2.23	1.89	2.57	0.17	0.34	Phosphomolybdate UV
	mg/dl	6.91	5.86	7.96	0.53	1.05	
Potassium	mmol/l	6.34	5.83	6.85	0.26	0.51	ISE method - indirect
Protein Total	g/l	43.6	34.9	52.3	4.35	8.70	Biuret reaction end point
	g/dl	4.36	3.49	5.23	0.44	0.87	
	g/l	43.1	34.5	51.7	4.30	8.60	Biuret reaction kinetic
	g/dl	4.31	3.45	5.17	0.43	0.86	
Sodium	mmol/l	158	151	165	3.50	7.00	ISE method - indirect
Triglycerides	mmol/l	2.99	2.51	3.47	0.24	0.48	Lipase/GPO-PAP no correction
	mg/dl	265	222	308	21.50	43.00	
	mmol/l	2.98	2.50	3.46	0.24	0.48	L/G Kinase EP. no correction
	mg/dl	264	221	307	21.50	43.00	
Urea	mmol/l	20.3	17.3	23.3	1.50	3.00	Urease end point
	mg/dl	122	104	140	9.00	18.00	
	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	

**Beckman DxC600/800®**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

## Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.06	7.88	10.2	0.59	1.18	

## BIOSYSTEMS A15

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	29.9	25.4	34.4	2.25	4.50	Bromocresol Green
	g/dl	2.99	2.54	3.44	0.23	0.45	
ALT (GPT)	U/l	151	121	181	15.00	30.00	Tris buffer without P5P 37°C
	U/l	112	90	134	11.00	22.00	Tris buffer without P5P 30°C
	U/l	85	68	102	8.50	17.00	Tris buffer without P5P 25°C
AST (GOT)	U/l	170	136	204	17.00	34.00	Tris buffer without P5P 37°C
	U/l	115	92	138	11.50	23.00	Tris buffer without P5P 30°C
	U/l	81	65	97	8.00	16.00	Tris buffer without P5P 25°C
Bilirubin Direct	µmol/l	26.5	20.9	32.1	2.80	5.60	Diazo with Sulphanilic Acid
	mg/dl	1.55	1.22	1.88	0.17	0.33	
Bilirubin Total	µmol/l	80.5	63.6	97.4	8.45	16.90	Diazo with Sulphanilic Acid
	mg/dl	4.71	3.72	5.70	0.50	0.99	
Cholesterol	mmol/l	7.26	6.31	8.21	0.48	0.95	Cholesterol Oxidase - Abell Kendall
	mg/dl	280	244	316	18.00	36.00	
Creatinine	µmol/l	383	306	460	38.50	77.00	Alkaline picrate no deproteinization
	mg/dl	4.33	3.46	5.20	0.44	0.87	
Glucose	mmol/l	15.6	13.2	18.0	1.20	2.40	Glucose oxidase
	mg/dl	281	238	324	21.50	43.00	
Protein Total	g/l	46.1	36.9	55.3	4.60	9.20	Biuret reaction end point
	g/dl	4.61	3.69	5.53	0.46	0.92	
Triglycerides	mmol/l	2.76	2.32	3.20	0.22	0.44	Lipase/GPO-PAP no correction
	mg/dl	244	205	283	19.50	39.00	

**BIOSYSTEMS A15**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Urea	mmol/l	18.4	15.6	21.2	1.40	2.80	Urease kinetic
	mg/dl	111	93.8	128	8.60	17.20	
	mmol/l	18.4	15.6	21.2	1.40	2.80	BUN
	mg/dl	51.6	43.9	59.3	3.85	7.70	
Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.06	7.88	10.2	0.59	1.18	

## BIOSYSTEMS A25

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	30.8	26.2	35.4	2.30	4.60	Bromocresol Green
	g/dl	3.08	2.62	3.54	0.23	0.46	
Alkaline Phosphatase	U/l	463	394	532	34.50	69.00	Diethanolamine buffer DEA 37°C
	U/l	361	307	415	27.00	54.00	Diethanolamine buffer DEA 30°C
	U/l	296	252	340	22.00	44.00	Diethanolamine buffer DEA 25°C
ALT (GPT)	U/l	149	119	179	15.00	30.00	Tris buffer without P5P 37°C
	U/l	110	88	132	11.00	22.00	Tris buffer without P5P 30°C
	U/l	84	67	101	8.50	17.00	Tris buffer without P5P 25°C
AST (GOT)	U/l	160	128	192	16.00	32.00	Tris buffer without P5P 37°C
	U/l	108	87	129	10.50	21.00	Tris buffer without P5P 30°C
	U/l	76	61	91	7.50	15.00	Tris buffer without P5P 25°C
Bilirubin Total	µmol/l	77.1	60.9	93.3	8.10	16.20	Diazo with Sulphanilic Acid
	mg/dl	4.51	3.56	5.46	0.48	0.95	
Calcium	mmol/l	3.03	2.72	3.34	0.16	0.31	Arsenazo III
	mg/dl	12.1	10.9	13.3	0.60	1.20	
Cholesterol	mmol/l	7.15	6.22	8.08	0.47	0.93	Cholesterol Oxidase - Abell Kendall
	mg/dl	276	240	312	18.00	36.00	
Glucose	mmol/l	15.9	13.5	18.3	1.20	2.40	Glucose oxidase
	mg/dl	287	243	331	22.00	44.00	
Protein Total	g/l	45.3	36.2	54.4	4.55	9.10	Biuret reaction end point
	g/dl	4.53	3.62	5.44	0.46	0.91	



**BIOSYSTEMS A25**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Triglycerides	mmol/l	2.85	2.40	3.30	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	252	212	292	20.00	40.00	
Urea	mmol/l	18.7	15.9	21.5	1.40	2.80	Urease kinetic
	mg/dl	112	95.6	128	8.20	16.40	
	mmol/l	18.7	15.9	21.5	1.40	2.80	BUN
	mg/dl	52.5	44.6	60.4	3.95	7.90	

## Biotechnica/Wiener BT and CB Series

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	27.4	23.3	31.5	2.05	4.10	Bromocresol Green
	g/dl	2.74	2.33	3.15	0.21	0.41	
Alkaline Phosphatase	U/l	277	235	319	21.00	42.00	AMP optimised to IFCC 37°C
	U/l	216	183	249	16.50	33.00	AMP optimised to IFCC 30°C
	U/l	177	150	204	13.50	27.00	AMP optimised to IFCC 25°C
ALT (GPT)	U/l	147	118	176	14.50	29.00	Tris buffer without P5P 37°C
	U/l	109	87	131	11.00	22.00	Tris buffer without P5P 30°C
	U/l	83	66	100	8.50	17.00	Tris buffer without P5P 25°C
AST (GOT)	U/l	158	127	189	15.50	31.00	Tris buffer without P5P 37°C
	U/l	107	86	128	10.50	21.00	Tris buffer without P5P 30°C
	U/l	75	60	90	7.50	15.00	Tris buffer without P5P 25°C
Bilirubin Total	µmol/l	75.0	59.3	90.7	7.85	15.70	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.39	3.47	5.31	0.46	0.92	
Calcium	mmol/l	2.88	2.59	3.17	0.15	0.29	Arsenazo III
	mg/dl	11.5	10.4	12.6	0.55	1.10	
Cholesterol	mmol/l	6.93	6.02	7.84	0.46	0.91	Cholesterol Oxidase - Abell Kendall
	mg/dl	267	232	302	17.50	35.00	
CK Total	U/l	502	411	593	45.50	91.00	CK-NAC (IFCC) 37°C
	U/l	314	257	371	28.50	57.00	CK-NAC (IFCC) 30°C
	U/l	213	175	251	19.00	38.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	385	308	462	38.50	77.00	Creatinine PAP method
	mg/dl	4.35	3.48	5.22	0.44	0.87	

## Biotechnica/Wiener BT and CB Series

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
gamma-GT	U/l	156	133	179	11.50	23.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	123	105	141	9.00	18.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	96	82	110	7.00	14.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.1	12.8	17.4	1.15	2.30	Glucose oxidase
	mg/dl	272	231	313	20.50	41.00	
HDL - Cholesterol	mmol/l	2.46	2.10	2.82	0.18	0.36	Direct HDL Immunoseparation
	mg/dl	95.0	81.1	109	6.95	13.90	
	mmol/l	2.48	2.11	2.85	0.19	0.37	Direct Clearance Method
	mg/dl	95.7	81.4	110	7.15	14.30	
Phosphate Inorganic	mmol/l	2.15	1.83	2.47	0.16	0.32	Phosphomolybdate UV
	mg/dl	6.67	5.67	7.67	0.50	1.00	
Triglycerides	mmol/l	2.71	2.28	3.14	0.22	0.43	Lipase/GPO-PAP no correction
	mg/dl	240	202	278	19.00	38.00	
Urea	mmol/l	20.0	17.0	23.0	1.50	3.00	Urease kinetic
	mg/dl	120	102	138	9.00	18.00	
	mmol/l	20.0	17.0	23.0	1.50	3.00	BUN
	mg/dl	56.1	47.7	64.5	4.20	8.40	
Uric Acid (Urate)	mmol/l	0.52	0.45	0.59	0.03	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	8.72	7.59	9.85	0.57	1.13	

## COBAS INTEGRA®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	29.8	25.3	34.3	2.25	4.50	Bromocresol Green
	g/dl	2.98	2.53	3.43	0.23	0.45	
	g/l	28.5	24.2	32.8	2.15	4.30	Bromocresol Purple
	g/dl	2.85	2.42	3.28	0.22	0.43	
	g/l	25.7	21.9	29.5	1.90	3.80	Turbidimetric Assays
	g/dl	2.57	2.19	2.95	0.19	0.38	
Alkaline Phosphatase	U/l	280	238	322	21.00	42.00	Roche Integra AMP buffer 37°C
	U/l	218	185	251	16.50	33.00	Roche Integra AMP buffer 30°C
	U/l	179	152	206	13.50	27.00	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	136	109	163	13.50	27.00	Tris buffer without P5P 37°C
	U/l	101	81	121	10.00	20.00	Tris buffer without P5P 30°C
	U/l	77	61	93	8.00	16.00	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	264	224	304	20.00	40.00	Immunoinhibition EPS substrate 37°C
	U/l	264	225	303	19.50	39.00	Roche EPS Liquid 37°C
Amylase Total	U/l	287	244	330	21.50	43.00	Roche Integra 2-chloro-pNPG7 37°C
	U/l	287	244	330	21.50	43.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	156	125	187	15.50	31.00	Tris buffer without P5P 37°C
	U/l	105	85	125	10.00	20.00	Tris buffer without P5P 30°C
	U/l	74	60	88	7.00	14.00	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	13.4	10.6	16.2	1.40	2.80	Enzymatic
Bilirubin Direct	µmol/l	29.1	23.0	35.2	3.05	6.10	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.70	1.35	2.05	0.18	0.35	


**COBAS INTEGRA®**
**ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Bilirubin Direct	µmol/l	28.9	22.8	35.0	3.05	6.10	Diazo with Sulphanilic Acid
	mg/dl	1.69	1.33	2.05	0.18	0.36	
	µmol/l	28.6	22.6	34.6	3.00	6.00	Roche JG factored
	mg/dl	1.67	1.32	2.02	0.18	0.35	
Bilirubin Total	µmol/l	72.2	57.0	87.4	7.60	15.20	Diazo with Sulphanilic Acid
	mg/dl	4.22	3.33	5.11	0.45	0.89	
	µmol/l	71.6	56.6	86.6	7.50	15.00	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.19	3.31	5.07	0.44	0.88	
	µmol/l	71.6	56.5	86.7	7.55	15.10	Diazonium ion
	mg/dl	4.19	3.31	5.07	0.44	0.88	
Calcium	mmol/l	3.11	2.80	3.42	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.5	11.2	13.8	0.65	1.30	
	mmol/l	3.11	2.80	3.42	0.16	0.31	NM-BAPTA
	mg/dl	12.5	11.2	13.8	0.65	1.30	
Chloride	mmol/l	121	111	131	5.00	10.00	ISE indirect
Cholesterol	mmol/l	6.99	6.08	7.90	0.46	0.91	Cholesterol Oxidase - Abell Kendall
	mg/dl	270	235	305	17.50	35.00	
	mmol/l	6.97	6.06	7.88	0.46	0.91	Cholesterol Oxidase - IDMS
	mg/dl	269	234	304	17.50	35.00	
CK Total	U/l	494	405	583	44.50	89.00	CK-NAC substrate start (DGKC) 37°C
	U/l	309	254	364	27.50	55.00	CK-NAC substrate start (DGKC) 30°C
	U/l	210	172	248	19.00	38.00	CK-NAC substrate start (DGKC) 25°C
	U/l	495	406	584	44.50	89.00	CK-NAC (IFCC) 37°C
	U/l	310	254	366	28.00	56.00	CK-NAC (IFCC) 30°C
	U/l	210	173	247	18.50	37.00	CK-NAC (IFCC) 25°C

## COBAS INTEGRA®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Creatinine	μmol/l	374	299	449	37.50	75.00	Alkaline picrate no deproteinization
	mg/dl	4.23	3.38	5.08	0.43	0.85	
	μmol/l	383	306	460	38.50	77.00	Roche Creatinine Plus
	mg/dl	4.33	3.46	5.20	0.44	0.87	
	μmol/l	368	294	442	37.00	74.00	Jaffe rate blanked comp. (-26 μmol/l)
	mg/dl	4.16	3.32	5.00	0.42	0.84	
	μmol/l	376	301	451	37.50	75.00	Jaffe rate blanked compensated (-18 μmol/l)
	mg/dl	4.25	3.40	5.10	0.43	0.85	
gamma-GT	U/l	156	132	180	12.00	24.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	123	104	142	9.50	19.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	96	81	111	7.50	15.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	170	145	195	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	134	114	154	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	105	89	121	8.00	16.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.8	13.4	18.2	1.20	2.40	Hexokinase
	mg/dl	285	241	329	22.00	44.00	
HDL - Cholesterol	mmol/l	3.29	2.80	3.78	0.25	0.49	Direct HDL Roche 4th Generation
	mg/dl	127	108	146	9.50	19.00	
Iron	μmol/l	35.9	29.4	42.4	3.25	6.50	Colorimetric with ppt.
	μg/dl	201	164	238	18.50	37.00	
	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	5.37	4.40	6.34	0.49	0.97	Colorimetric Lactate Oxidase
	mg/dl	48.4	39.6	57.2	4.40	8.80	

## COBAS INTEGRA®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
LD (LDH)	U/l	688	585	791	51.50	103.00	P->L German methods 37°C
	U/l	497	422	572	37.50	75.00	P->L German methods 30°C
	U/l	349	297	401	26.00	52.00	P->L German methods 25°C
	U/l	380	323	437	28.50	57.00	L->P IFCC 37°C
	U/l	274	233	315	20.50	41.00	L->P IFCC 30°C
	U/l	193	164	222	14.50	29.00	L->P IFCC 25°C
Lipase	U/l	60	48	72	6.00	12.00	Roche Colorimetric 37°C
Lithium	mmol/l	2.11	1.86	2.36	0.13	0.25	Ion selective electrode
	mg/dl	1.47	1.29	1.65	0.09	0.18	
Magnesium	mmol/l	1.70	1.49	1.91	0.11	0.21	Chlorphosphonazo III
	mg/dl	4.13	3.62	4.64	0.26	0.51	
Phosphate Inorganic	mmol/l	2.24	1.91	2.57	0.17	0.33	Phosphomolybdate enzymatic
	mg/dl	6.94	5.92	7.96	0.51	1.02	
	mmol/l	2.24	1.91	2.57	0.17	0.33	Phosphomolybdate UV
	mg/dl	6.94	5.92	7.96	0.51	1.02	
Potassium	mmol/l	6.38	5.87	6.89	0.26	0.51	ISE method - indirect
Protein Total	g/l	41.6	33.3	49.9	4.15	8.30	Biuret reaction end point
	g/dl	4.16	3.33	4.99	0.42	0.83	
	g/l	42.1	33.7	50.5	4.20	8.40	Biuret reaction kinetic
	g/dl	4.21	3.37	5.05	0.42	0.84	
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
TIBC	µmol/l	38.7	30.6	46.8	4.05	8.10	FE+UIBC(saturation with iron)
	µg/dl	216	171	261	22.50	45.00	
Triglycerides	mmol/l	2.91	2.44	3.38	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	258	216	300	21.00	42.00	

## COBAS INTEGRA®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Triglycerides	mmol/l	2.87	2.41	3.33	0.23	0.46	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	254	213	295	20.50	41.00	
Urea	mmol/l	19.4	16.5	22.3	1.45	2.90	Urease kinetic
	mg/dl	117	99.2	135	8.90	17.80	
	mmol/l	19.4	16.5	22.3	1.45	2.90	BUN
	mg/dl	54.4	46.2	62.6	4.10	8.20	
Uric Acid (Urate)	mmol/l	0.56	0.49	0.64	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.48	8.23	10.7	0.63	1.25	
	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.37	8.16	10.6	0.61	1.21	
	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.42	8.20	10.6	0.61	1.22	



## Konelab 20/30/60®/Thermo Scientific Indiko Plus® ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Albumin	g/l	28.7	24.4	33.0	2.15	4.30	Bromocresol Green
	g/dl	2.87	2.44	3.30	0.22	0.43	
Alkaline Phosphatase	U/l	492	418	566	37.00	74.00	Diethanolamine buffer DEA 37°C
	U/l	383	326	440	28.50	57.00	Diethanolamine buffer DEA 30°C
	U/l	314	267	361	23.50	47.00	Diethanolamine buffer DEA 25°C
	U/l	321	273	369	24.00	48.00	AMP optimised to IFCC 37°C
	U/l	250	213	287	18.50	37.00	AMP optimised to IFCC 30°C
	U/l	205	174	236	15.50	31.00	AMP optimised to IFCC 25°C
ALT (GPT)	U/l	155	124	186	15.50	31.00	Tris buffer without P5P 37°C
	U/l	115	92	138	11.50	23.00	Tris buffer without P5P 30°C
	U/l	87	70	104	8.50	17.00	Tris buffer without P5P 25°C
AST (GOT)	U/l	176	141	211	17.50	35.00	Tris buffer without P5P 37°C
	U/l	119	95	143	12.00	24.00	Tris buffer without P5P 30°C
	U/l	84	67	101	8.50	17.00	Tris buffer without P5P 25°C
Bile Acids	µmol/l	45.7	36.6	54.8	4.55	9.10	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	25.0	19.7	30.3	2.65	5.30	Diazo with Sulphanilic Acid
	mg/dl	1.46	1.15	1.77	0.16	0.31	
Bilirubin Total	µmol/l	84.2	66.5	102	8.85	17.70	Diazo with Sulphanilic Acid
	mg/dl	4.93	3.89	5.97	0.52	1.04	
	µmol/l	77.8	61.4	94.2	8.20	16.40	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.55	3.59	5.51	0.48	0.96	

## Konelab 20/30/60®/Thermo Scientific Indiko Plus® ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Bilirubin Total	µmol/l	80.3	63.4	97.2	8.45	16.90	Nitrobenzenediazonium salt
	mg/dl	4.70	3.71	5.69	0.50	0.99	
Calcium	mmol/l	3.17	2.85	3.49	0.16	0.32	Arsenazo III
	mg/dl	12.7	11.4	14.0	0.65	1.30	
Chloride	mmol/l	120	110	130	5.00	10.00	ISE direct
Cholesterol	mmol/l	7.02	6.10	7.94	0.46	0.92	Cholesterol Oxidase - Abell Kendall
	mg/dl	271	235	307	18.00	36.00	
	mmol/l	7.04	6.12	7.96	0.46	0.92	Cholesterol Oxidase - IDMS
	mg/dl	272	236	308	18.00	36.00	
CK Total	U/l	528	433	623	47.50	95.00	CK-NAC (IFCC) 37°C
	U/l	331	271	391	30.00	60.00	CK-NAC (IFCC) 30°C
	U/l	224	184	264	20.00	40.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	386	308	464	39.00	78.00	Alkaline picrate no deproteinization
	mg/dl	4.36	3.48	5.24	0.44	0.88	
	µmol/l	388	311	465	38.50	77.00	Creatinine PAP method
	mg/dl	4.38	3.51	5.25	0.44	0.87	
gamma-GT	U/l	164	140	188	12.00	24.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	129	110	148	9.50	19.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	101	86	116	7.50	15.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.8	13.4	18.2	1.20	2.40	Hexokinase
	mg/dl	285	241	329	22.00	44.00	
	mmol/l	15.3	13.0	17.6	1.15	2.30	Glucose oxidase
	mg/dl	276	234	318	21.00	42.00	
HDL - Cholesterol	mmol/l	2.73	2.32	3.14	0.21	0.41	Direct HDL PEGME
	mg/dl	105	89.6	120	7.70	15.40	

Konelab 20/30/60®/Thermo Scientific Indiko Plus® ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)							
Lot. No. 1103UE Cat. No. HE1532 / HS2611							
Size 20 x 5 ml / 5 x 5 ml		Expiry 2023-07-28		Range			
Analyte	unit	Target	low	high	1SD	2SD	methods
HDL - Cholesterol	mmol/l	2.55	2.16	2.94	0.20	0.39	Direct Clearance Method
	mg/dl	98.4	83.4	113	7.50	15.00	
Iron	µmol/l	35.9	29.4	42.4	3.25	6.50	Colorimetric without ppt.
	µg/dl	201	164	238	18.50	37.00	
Magnesium	mmol/l	1.55	1.37	1.73	0.09	0.18	Xylidyl Blue
	mg/dl	3.77	3.33	4.21	0.22	0.44	
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	
Potassium	mmol/l	6.25	5.75	6.75	0.25	0.50	ISE method - direct
Protein Total	g/l	44.4	35.5	53.3	4.45	8.90	Biuret reaction end point
	g/dl	4.44	3.55	5.33	0.45	0.89	
Sodium	mmol/l	155	148	162	3.50	7.00	ISE method - direct
Triglycerides	mmol/l	2.90	2.43	3.37	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	257	215	299	21.00	42.00	
Urea	mmol/l	18.8	15.9	21.7	1.45	2.90	Urease kinetic
	mg/dl	113	95.6	130	8.70	17.40	
	mmol/l	18.8	16.0	21.6	1.40	2.80	BUN
	mg/dl	52.8	44.9	60.7	3.95	7.90	
Uric Acid (Urate)	mmol/l	0.57	0.50	0.65	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.59	8.35	10.8	0.62	1.24	
	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	

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
alpha-HBDH	U/l	404	319	489	42.50	85.00	Oxobutyrate < 10 mmol/l 37°C
	U/l	305	241	369	32.00	64.00	Oxobutyrate < 10 mmol/l 30°C
	U/l	229	181	277	24.00	48.00	Oxobutyrate < 10 mmol/l 25°C
Acid Phosphatase (Total)	U/l	37.8	25.3	50.3	6.25	12.50	1-Naphthyl Phosphate substrate Kinetic 37°C
Albumin	g/l	28.9	24.6	33.2	2.15	4.30	Bromocresol Green
	g/dl	2.89	2.46	3.32	0.22	0.43	
	g/l	27.8	23.6	32.0	2.10	4.20	Bromocresol Purple
	g/dl	2.78	2.36	3.20	0.21	0.42	
	g/l	27.3	23.2	31.4	2.05	4.10	Ortho Vitros Microslide Systems
	g/dl	2.73	2.32	3.14	0.21	0.41	
	g/l	26.1	22.2	30.0	1.95	3.90	Turbidimetric Assays
g/dl	2.61	2.22	3.00	0.20	0.39		
Alkaline Phosphatase	U/l	245	208	282	18.50	37.00	Ortho Vitros Microslide Systems 37°C
	U/l	489	416	562	36.50	73.00	Diethanolamine buffer DEA 37°C
	U/l	381	324	438	28.50	57.00	Diethanolamine buffer DEA 30°C
	U/l	312	266	358	23.00	46.00	Diethanolamine buffer DEA 25°C
	U/l	341	290	392	25.50	51.00	AMP optimised to IFCC 37°C
	U/l	266	226	306	20.00	40.00	AMP optimised to IFCC 30°C
	U/l	218	185	251	16.50	33.00	AMP optimised to IFCC 25°C
	U/l	326	277	375	24.50	49.00	AMP non-optimised 37°C
	U/l	254	216	292	19.00	38.00	AMP non-optimised 30°C
U/l	208	177	239	15.50	31.00	AMP non-optimised 25°C	



## MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Alkaline Phosphatase	U/l	272	232	312	20.00	40.00	Colorimetric 37°C
	U/l	212	181	243	15.50	31.00	Colorimetric 30°C
	U/l	174	148	200	13.00	26.00	Colorimetric 25°C
ALT (GPT)	U/l	149	119	179	15.00	30.00	Ortho Vitros Microslide Systems 37°C
	U/l	149	119	179	15.00	30.00	Tris buffer with P5P 37°C
	U/l	110	88	132	11.00	22.00	Tris buffer with P5P 30°C
	U/l	84	67	101	8.50	17.00	Tris buffer with P5P 25°C
	U/l	139	112	166	13.50	27.00	Tris buffer without P5P 37°C
	U/l	103	83	123	10.00	20.00	Tris buffer without P5P 30°C
	U/l	78	63	93	7.50	15.00	Tris buffer without P5P 25°C
	U/l	131	105	157	13.00	26.00	Tris buffer SCE 37°C
	U/l	97	78	116	9.50	19.00	Tris buffer SCE 30°C
	U/l	74	59	89	7.50	15.00	Tris buffer SCE 25°C
Amylase Pancreatic	U/l	259	220	298	19.50	39.00	Immunoinhibition EPS substrate 37°C
	U/l	253	215	291	19.00	38.00	Roche EPS Liquid 37°C
	U/l	289	246	332	21.50	43.00	Randox Liquid Ethylidene pNPG7 37°C
Amylase Total	U/l	302	257	347	22.50	45.00	pNP Maltotriose substrates 37°C
	U/l	292	249	335	21.50	43.00	Siemens - blocked pNPG7 37°C
	U/l	238	202	274	18.00	36.00	Randox Lyo. Ethylidene pNPG7 37°C
	U/l	305	259	351	23.00	46.00	Randox Liquid Ethylidene pNPG7 37°C
	U/l	274	233	315	20.50	41.00	BM/Roche Colorimetric pNPG7 37°C
	U/l	325	276	374	24.50	49.00	Siemens - maltopenta/hexaoside 37°C
	U/l	265	225	305	20.00	40.00	Saccharogenic 37°C



## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Amylase Total	U/l	283	240	326	21.50	43.00	Roche Integra 2-chloro-pNPG7 37°C
	U/l	189	160	218	14.50	29.00	Ortho Vitros Microslide Systems 37°C
	U/l	277	235	319	21.00	42.00	Roche liquid stable pNPG7 37°C
	U/l	337	287	387	25.00	50.00	Siemens 2-chloro-pNPG3 37°C
	U/l	298	253	343	22.50	45.00	Beckman Coulter - blocked pNPG7 37°C
	U/l	299	254	344	22.50	45.00	Beckman Synchron AMY7 37°C
	U/l	319	271	367	24.00	48.00	Abbott Architect Non-IFCC Cal. 37°C
	U/l	351	298	404	26.50	53.00	Abbott Architect IFCC Cal. 37°C
	U/l	291	247	335	22.00	44.00	Beckman CNPG3 (Extinction Coeff) 37°C
Apolipoprotein A-1	g/l	1.05	0.86	1.24	0.09	0.19	Immunoturbidimetric
	mg/dl	105	86.1	124	9.45	18.90	
Apolipoprotein B	g/l	0.63	0.52	0.74	0.06	0.11	Immunoturbidimetric
	mg/dl	62.9	51.6	74.2	5.65	11.30	
AST (GOT)	U/l	207	165	249	21.00	42.00	Ortho Vitros Microslide visible slide 37°C
	U/l	201	161	241	20.00	40.00	Tris buffer with P5P 37°C
	U/l	136	109	163	13.50	27.00	Tris buffer with P5P 30°C
	U/l	96	77	115	9.50	19.00	Tris buffer with P5P 25°C
	U/l	157	125	189	16.00	32.00	Tris buffer without P5P 37°C
	U/l	106	85	127	10.50	21.00	Tris buffer without P5P 30°C
	U/l	75	60	90	7.50	15.00	Tris buffer without P5P 25°C
	U/l	145	116	174	14.50	29.00	Tris buffer SCE 37°C
	U/l	98	78	118	10.00	20.00	Tris buffer SCE 30°C
Bicarbonate	mmol/l	13.1	10.4	15.8	1.35	2.70	Colorimetric
	mmol/l	14.6	11.6	17.6	1.50	3.00	Ortho Vitros Microslide Systems

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Bicarbonate	mmol/l	13.0	10.3	15.7	1.35	2.70	Differential rate pH change
	mmol/l	13.4	10.6	16.2	1.40	2.80	Enzymatic
	mmol/l	12.7	10.1	15.3	1.30	2.60	Ion selective electrode
Bile Acids	µmol/l	46.2	37.0	55.4	4.60	9.20	4th Generation Colorimetric
	µmol/l	45.8	36.6	55.0	4.60	9.20	5th Generation Colorimetric
Bilirubin Direct	µmol/l	25.8	20.4	31.2	2.70	5.40	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.51	1.19	1.83	0.16	0.32	
	µmol/l	28.2	22.3	34.1	2.95	5.90	Diazo with Sulphanilic Acid
	mg/dl	1.65	1.30	2.00	0.18	0.35	
	µmol/l	28.2	22.2	34.2	3.00	6.00	Diazo with Dichloroaniline (DCA)
	mg/dl	1.65	1.30	2.00	0.18	0.35	
	µmol/l	27.8	21.9	33.7	2.95	5.90	Oxidation to Biliverdin/Vanadate
	mg/dl	1.63	1.28	1.98	0.18	0.35	
	µmol/l	29.5	23.3	35.7	3.10	6.20	Modified Jendrassik
	mg/dl	1.73	1.36	2.10	0.19	0.37	
Bilirubin Total	µmol/l	75.5	59.7	91.3	7.90	15.80	Vitros 250/500/700/950 Total Bilirubin
	mg/dl	4.42	3.49	5.35	0.47	0.93	
	µmol/l	83.1	65.6	101	8.75	17.50	Diazo with Dichloroaniline (DCA)
	mg/dl	4.86	3.84	5.88	0.51	1.02	
	µmol/l	78.7	62.2	95.2	8.25	16.50	Diazo with Sulphanilic Acid
	mg/dl	4.60	3.64	5.56	0.48	0.96	
	µmol/l	73.9	58.4	89.4	7.75	15.50	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.32	3.42	5.22	0.45	0.90	
	µmol/l	80.3	63.4	97.2	8.45	16.90	Nitrobenzenediazonium salt
	mg/dl	4.70	3.71	5.69	0.50	0.99	



## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Bilirubin Total	µmol/l	76.2	60.2	92.2	8.00	16.00	Diazonium ion
	mg/dl	4.46	3.52	5.40	0.47	0.94	
	µmol/l	89.7	70.9	109	9.40	18.80	Oxidation to Biliverdin/Vanadate
	mg/dl	5.25	4.15	6.35	0.55	1.10	
	µmol/l	89.0	70.3	108	9.35	18.70	Modified Jendrassik
	mg/dl	5.21	4.11	6.31	0.55	1.10	
Calcium	mmol/l	3.11	2.80	3.42	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.5	11.2	13.8	0.65	1.30	
	mmol/l	3.13	2.81	3.45	0.16	0.32	Ortho Vitros Microslide Systems
	mg/dl	12.5	11.3	13.7	0.60	1.20	
	mmol/l	3.01	2.71	3.31	0.15	0.30	Ion selective electrode
	mg/dl	12.1	10.9	13.3	0.60	1.20	
	mmol/l	3.08	2.77	3.39	0.16	0.31	Arsenazo III
	mg/dl	12.3	11.1	13.5	0.60	1.20	
	mmol/l	3.11	2.80	3.42	0.16	0.31	NM-BAPTA
	mg/dl	12.5	11.2	13.8	0.65	1.30	
	mmol/l	1.25	1.13	1.37	0.06	0.12	Ionised calcium
	mg/dl	5.01	4.53	5.49	0.24	0.48	
Chloride	mmol/l	119	109	129	5.00	10.00	Colorimetric
	mmol/l	121	111	131	5.00	10.00	Ortho Vitros Microslide Systems
	mmol/l	119	110	128	4.50	9.00	ISE indirect
	mmol/l	119	109	129	5.00	10.00	ISE direct
Cholesterol	mmol/l	6.68	5.81	7.55	0.44	0.87	Ortho Vitros Microslide Systems
	mg/dl	258	224	292	17.00	34.00	
	mmol/l	7.06	6.14	7.98	0.46	0.92	Cholesterol Oxidase - Abell Kendall
	mg/dl	273	237	309	18.00	36.00	



## MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Cholesterol	mmol/l	7.01	6.10	7.92	0.46	0.91	Cholesterol Oxidase - IDMS
	mg/dl	271	235	307	18.00	36.00	
Cholinesterase	U/l	5082	4066	6098	508.00	1016.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	435	357	513	39.00	78.00	Ortho Vitros Microslide Systems 37°C
	U/l	513	421	605	46.00	92.00	CK-NAC serum start (DGKC) 37°C
	U/l	321	264	378	28.50	57.00	CK-NAC serum start (DGKC) 30°C
	U/l	218	179	257	19.50	39.00	CK-NAC serum start (DGKC) 25°C
	U/l	504	413	595	45.50	91.00	CK-NAC substrate start (DGKC) 37°C
	U/l	316	259	373	28.50	57.00	CK-NAC substrate start (DGKC) 30°C
	U/l	214	176	252	19.00	38.00	CK-NAC substrate start (DGKC) 25°C
	U/l	500	410	590	45.00	90.00	CK-NAC (IFCC) 37°C
	U/l	313	257	369	28.00	56.00	CK-NAC (IFCC) 30°C
	U/l	213	174	252	19.50	39.00	CK-NAC (IFCC) 25°C
	U/l	535	438	632	48.50	97.00	Monothioglycerol 37°C
	U/l	335	274	396	30.50	61.00	Monothioglycerol 30°C
	U/l	227	186	268	20.50	41.00	Monothioglycerol 25°C
Copper	µmol/l	25.1	20.1	30.1	2.50	5.00	Atomic absorption
	µg/dl	160	128	192	16.00	32.00	
	µmol/l	24.6	19.7	29.5	2.45	4.90	Colorimetric
	µg/dl	156	125	187	15.50	31.00	
Cortisol	nmol/l	975	731	1219	122.00	244.00	Roche Cobas E411
	µg/dl	35.1	26.3	43.9	4.40	8.80	
Creatinine	µmol/l	382	306	458	38.00	76.00	Alkaline picrate with deproteinization
	mg/dl	4.32	3.46	5.18	0.43	0.86	

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Creatinine	µmol/l	375	300	450	37.50	75.00	Alkaline picrate no deproteinization
	mg/dl	4.24	3.39	5.09	0.43	0.85	
	µmol/l	388	310	466	39.00	78.00	Enzymatic UV method
	mg/dl	4.38	3.50	5.26	0.44	0.88	
	µmol/l	392	314	470	39.00	78.00	Creatinine PAP method
	mg/dl	4.43	3.55	5.31	0.44	0.88	
	µmol/l	378	303	453	37.50	75.00	Jaffe rate blanked
	mg/dl	4.27	3.42	5.12	0.43	0.85	
	µmol/l	382	306	458	38.00	76.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.32	3.46	5.18	0.43	0.86	
	µmol/l	376	301	451	37.50	75.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.25	3.40	5.10	0.43	0.85	
D-3-Hydroxybutyrate	µmol/l	391	313	469	39.00	78.00	Vitros IDMS Traceable
	mg/dl	4.42	3.54	5.30	0.44	0.88	
Digoxin	µmol/l	382	306	458	38.00	76.00	IDMS traceable
	mg/dl	4.32	3.46	5.18	0.43	0.86	
D-3-Hydroxybutyrate	mmol/l	1.18	1.00	1.36	0.09	0.18	Tris buffer 100mmol pH 8.5
Digoxin	nmol/l	3.99	3.19	4.79	0.40	0.80	Immunoturbidimetric
	ng/ml	3.12	2.49	3.75	0.32	0.63	
Folate	nmol/l	16.8	12.7	20.8	2.03	4.06	Roche Cobas E411
	ng/ml	7.39	5.60	9.18	0.90	1.79	
Free T4	pmol/l	55.7	41.8	69.6	6.95	13.90	Abbott Architect
	ng/dl	4.34	3.26	5.42	0.54	1.08	
	pg/ml	43.4	32.6	54.2	5.40	10.80	Abbott Architect
	pmol/l	73.4	55.1	91.7	9.15	18.30	Siemens Centaur XP/XPT/Classic
	ng/dl	5.73	4.30	7.16	0.72	1.43	
	pg/ml	57.3	43.0	71.6	7.15	14.30	Siemens Centaur XP/XPT/Classic

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Free T4	pmol/l	58.6	43.9	73.3	7.35	14.70	Beckman Access
	ng/dl	4.57	3.42	5.72	0.58	1.15	
	pg/ml	45.7	34.2	57.2	5.75	11.50	Beckman Access
	pmol/l	63.4	47.6	79.2	7.90	15.80	Beckman Dxl800
	ng/dl	4.95	3.71	6.19	0.62	1.24	
	pg/ml	49.5	37.1	61.9	6.20	12.40	Beckman Dxl800
	pmol/l	86.0	64.5	108	10.75	21.50	Roche Cobas E411
	ng/dl	6.71	5.03	8.39	0.84	1.68	
	pg/ml	67.1	50.3	83.9	8.40	16.80	Roche Cobas E411
	pmol/l	88.7	66.6	111	11.05	22.10	Roche Cobas 6000/8000
	ng/dl	6.92	5.19	8.65	0.87	1.73	
	pg/ml	69.2	51.9	86.5	8.65	17.30	Roche Cobas 6000/8000
	pmol/l	84.5	63.4	106	10.55	21.10	Biomerieux Vidas FT4N Kit
	ng/dl	6.59	4.95	8.23	0.82	1.64	
pg/ml	65.9	49.5	82.3	8.20	16.40	Biomerieux Vidas FT4N Kit	
Gentamicin	µmol/l	18.2	14.5	21.9	1.84	3.68	Immunoturbidimetric
	µg/ml	8.69	6.93	10.5	0.88	1.76	
gamma-GT	U/l	160	136	184	12.00	24.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	126	107	145	9.50	19.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	99	84	114	7.50	15.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	200	170	230	15.00	30.00	Ortho Vitros Microslide Systems 37°C
	U/l	133	113	153	10.00	20.00	Gamma glutamyl-4-nitroanilide 37°C
	U/l	105	89	121	8.00	16.00	Gamma glutamyl-4-nitroanilide 30°C
	U/l	82	70	94	6.00	12.00	Gamma glutamyl-4-nitroanilide 25°C

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Analyte	unit	Target	Range		1SD	2SD	methods	
			low	high				
gamma-GT	U/l	169	144	194	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C	
	U/l	133	113	153	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C	
	U/l	104	89	119	7.50	15.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C	
	U/l	180	153	207	13.50	27.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C	
	U/l	142	121	163	10.50	21.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C	
	U/l	111	94	128	8.50	17.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C	
GLDH	U/l	33	26	40	3.50	7.00	Triethanolamine buffer 50 mmol 37°C	
	U/l	25	20	30	2.50	5.00	Triethanolamine buffer 50 mmol 30°C	
	U/l	20	16	24	2.00	4.00	Triethanolamine buffer 50 mmol 25°C	
Glucose	mmol/l	14.4	12.2	16.6	1.10	2.20	Ortho Vitros Microslide Systems	
	mg/dl	259	220	298	19.50	39.00		
	mmol/l	15.2	13.0	17.4	1.10	2.20	Glucose dehydrogenase	
	mg/dl	274	234	314	20.00	40.00		
	mmol/l	15.5	13.2	17.8	1.15	2.30	Hexokinase	
	mg/dl	279	238	320	20.50	41.00		
	mmol/l	15.1	12.9	17.3	1.10	2.20	Oxygen electrode	
	mg/dl	272	232	312	20.00	40.00		
	mmol/l	15.5	13.1	17.9	1.20	2.40	Glucose oxidase	
	mg/dl	279	236	322	21.50	43.00		
	HDL - Cholesterol	mmol/l	2.44	2.07	2.81	0.19	0.37	Direct HDL PPD
		mg/dl	94.2	79.9	109	7.15	14.30	
mmol/l		2.54	2.16	2.92	0.19	0.38	Direct HDL Immunoseparation	
mg/dl		98.0	83.4	113	7.30	14.60		
mmol/l		2.25	1.91	2.59	0.17	0.34	Vitros Magnetic HDL	
mg/dl		86.9	73.7	100	6.60	13.20		

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
HDL - Cholesterol	mmol/l	2.59	2.20	2.98	0.20	0.39	Direct HDL PEGME
	mg/dl	100	84.9	115	7.55	15.10	
	mmol/l	2.34	1.98	2.70	0.18	0.36	Direct Clearance Method
	mg/dl	90.3	76.4	104	6.95	13.90	
	mmol/l	2.25	1.91	2.59	0.17	0.34	Vitros dHDL PTA/MgCl <sub>2</sub> direct precipitation
	mg/dl	86.9	73.7	100	6.60	13.20	
mmol/l	2.37	2.01	2.73	0.18	0.36	HDL - Ultra	
mg/dl	91.5	77.6	105	6.95	13.90		
mmol/l	3.19	2.71	3.67	0.24	0.48	Direct HDL Roche 4th Generation	
	mg/dl	123	105	141	9.00		18.00
Immunoglobulin A	g/l	1.52	1.14	1.90	0.19	0.38	Immunoturbidimetric
	mg/dl	152	114	190	19.00	38.00	
Immunoglobulin G	g/l	6.12	5.02	7.22	0.55	1.10	Immunoturbidimetric
	mg/dl	612	502	722	55.00	110.00	
Immunoglobulin M	g/l	0.69	0.55	0.82	0.07	0.14	Immunoturbidimetric
	mg/dl	68.7	55.0	82.4	6.85	13.70	
Iron	μmol/l	35.4	29.0	41.8	3.20	6.40	Colorimetric with ppt.
	μg/dl	198	162	234	18.00	36.00	
	μmol/l	35.5	29.1	41.9	3.20	6.40	Colorimetric without ppt.
	μg/dl	198	163	233	17.50	35.00	
	μmol/l	33.3	27.3	39.3	3.00	6.00	Ortho Vitros Microslide Systems
	μg/dl	186	153	219	16.50	33.00	
Lactate	mmol/l	5.12	4.20	6.04	0.46	0.92	Ion selective electrode
	mg/dl	46.1	37.8	54.4	4.15	8.30	



## MEAN OF ALL INSTRUMENTS

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Lactate	mmol/l	5.28	4.33	6.23	0.48	0.95	Colorimetric Lactate Oxidase
	mg/dl	47.6	39.0	56.2	4.30	8.60	
	mmol/l	4.91	4.02	5.80	0.45	0.89	Ortho Vitros Microslide Systems
	mg/dl	44.2	36.2	52.2	4.00	8.00	
	mmol/l	5.27	4.32	6.22	0.48	0.95	Enzymatic Electrode
	mg/dl	47.5	38.9	56.1	4.30	8.60	
LAP	U/l	15	13	17	1.00	2.00	NAGEL 37°C
LD (LDH)	U/l	1028	874	1182	77.00	154.00	Ortho Vitros Microslide Systems 37°C
	U/l	337	287	387	25.00	50.00	L->P 37°C
	U/l	243	207	279	18.00	36.00	L->P 30°C
	U/l	171	146	196	12.50	25.00	L->P 25°C
	U/l	799	679	919	60.00	120.00	P->L Scandinavian & Dutch 37°C
	U/l	577	490	664	43.50	87.00	P->L Scandinavian & Dutch 30°C
	U/l	405	344	466	30.50	61.00	P->L Scandinavian & Dutch 25°C
	U/l	698	593	803	52.50	105.00	P->L German methods 37°C
	U/l	504	428	580	38.00	76.00	P->L German methods 30°C
	U/l	354	301	407	26.50	53.00	P->L German methods 25°C
	U/l	713	606	820	53.50	107.00	P->L SFBC 37°C
	U/l	515	438	592	38.50	77.00	P->L SFBC 30°C
	U/l	361	307	415	27.00	54.00	P->L SFBC 25°C
	U/l	368	313	423	27.50	55.00	L->P IFCC 37°C
	U/l	266	226	306	20.00	40.00	L->P IFCC 30°C
U/l	187	159	215	14.00	28.00	L->P IFCC 25°C	
U/l	424	360	488	32.00	64.00	Ortho Vitros IFCC Traceable 37°C	
Lipase	U/l	66	53	79	6.50	13.00	Other Colorimetric 37°C

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Lipase	U/l	783	628	938	77.50	155.00	Ortho Vitros Microslide Systems 37°C
	U/l	56	45	67	5.50	11.00	Roche Colorimetric 37°C
	U/l	91	73	109	9.00	18.00	Randox Colorimetric 37°C
Lithium	mmol/l	2.16	1.90	2.42	0.13	0.26	Ion selective electrode
	mg/dl	1.50	1.32	1.68	0.09	0.18	
	mmol/l	2.08	1.83	2.33	0.13	0.25	Spectrophotometric
	mg/dl	1.44	1.27	1.61	0.09	0.17	
	mmol/l	2.17	1.91	2.43	0.13	0.26	Randox Colorimetric
Magnesium	mmol/l	1.66	1.46	1.86	0.10	0.20	Arsenazo III
	mg/dl	4.03	3.55	4.51	0.24	0.48	
	mmol/l	1.73	1.52	1.94	0.11	0.21	Ortho Vitros Microslide Systems
	mg/dl	4.20	3.69	4.71	0.26	0.51	
	mmol/l	1.64	1.44	1.84	0.10	0.20	Calmagite
	mg/dl	3.99	3.50	4.48	0.25	0.49	
	mmol/l	1.67	1.47	1.87	0.10	0.20	Xylidyl Blue
	mg/dl	4.06	3.57	4.55	0.25	0.49	
	mmol/l	1.64	1.45	1.83	0.10	0.19	Methylthymol blue
	mg/dl	3.99	3.52	4.46	0.24	0.47	
	mmol/l	1.69	1.48	1.90	0.11	0.21	Chlorphosphonazo III
	mg/dl	4.11	3.60	4.62	0.26	0.51	
NEFA	mmol/l	1.66	1.46	1.86	0.10	0.20	Enzymatic
	mg/dl	4.03	3.55	4.51	0.24	0.48	
Osmolality	mOsm/kg	346	277	415	34.50	69.00	Calculated

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods	
Osmolality	mOsm/kg	379	303	455	38.00	76.00	Freezing point depression	
Paracetamol	mmol/l	0.61	0.49	0.74	0.06	0.12	Colorimetric	
	mg/l	92.9	74.3	112	9.30	18.60		
Phosphate Inorganic	mmol/l	2.18	1.85	2.51	0.17	0.33	Ortho Vitros Microslide Systems	
	mg/dl	6.76	5.74	7.78	0.51	1.02		
	mmol/l	2.19	1.86	2.52	0.17	0.33	Phosphomolybdate enzymatic	
	mg/dl	6.79	5.77	7.81	0.51	1.02		
Potassium	mmol/l	2.18	1.86	2.50	0.16	0.32	Phosphomolybdate UV	
	mg/dl	6.76	5.77	7.75	0.50	0.99		
	mmol/l	6.30	5.80	6.80	0.25	0.50		Ortho Vitros Microslide Systems
	mmol/l	6.53	6.01	7.05	0.26	0.52		Enzymatic
Protein Total	mmol/l	6.30	5.79	6.81	0.26	0.51	ISE method - direct	
	mmol/l	6.37	5.86	6.88	0.26	0.51	ISE method - indirect	
	g/l	44.9	35.9	53.9	4.50	9.00	Ortho Vitros Microslide Systems	
	g/dl	4.49	3.59	5.39	0.45	0.90		
PSA Total	g/l	43.9	35.1	52.7	4.40	8.80	Biuret reaction end point	
	g/dl	4.39	3.51	5.27	0.44	0.88	Biuret reaction kinetic	
	g/l	43.5	34.8	52.2	4.35	8.70		
	g/dl	4.35	3.48	5.22	0.44	0.87		
PSA Total	ng/ml =	40.1	30.1	50.1	5.00	10.00	Beckman Access standardised to Hybritech	
	ng/ml =	33.2	24.9	41.5	4.15	8.30	bioMerieux VIDAS TPSA	
	ng/ml =	30.5	22.9	38.1	3.80	7.60	Siemens Centaur XP/XPT/Classic	
	ng/ml =	28.4	21.3	35.5	3.55	7.10	Abbott Architect	
	ng/ml =	36.0	27.0	45.0	4.50	9.00	Cobas E411	
	ng/ml =	35.8	26.9	44.7	4.45	8.90	Roche Cobas 6000/8000	



## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Salicylate	mmol/l	0.87	0.70	1.04	0.09	0.17	Gravimetric
	mg/dl	12.0	9.59	14.4	1.21	2.41	
Sodium	mmol/l	155	147	163	4.00	8.00	Ortho Vitros Microslide Systems
	mmol/l	159	151	167	4.00	8.00	Enzymatic
	mmol/l	157	150	164	3.50	7.00	ISE method - direct
	mmol/l	159	151	167	4.00	8.00	ISE method - indirect
Theophylline	µmol/l	139	111	166	13.85	27.70	Gravimetric
	µg/ml	25.0	20.0	30.0	2.50	5.00	
Thyroid Stimulating Hormone	µU/ml =	0.96	0.76	1.15	0.10	0.19	Abbott Architect
	µU/ml =	1.44	1.15	1.73	0.15	0.29	Siemens Centaur XP/XPT/Classic
	µU/ml =	1.09	0.88	1.30	0.11	0.21	Beckman Access hyperTSH 3rd Generation
	µU/ml =	1.23	0.98	1.48	0.12	0.25	bioMerieux VIDAS TSH
	µU/ml =	1.31	1.05	1.57	0.13	0.26	bioMerieux VIDAS TSH3 Ultrasensitive
	µU/ml =	1.37	1.10	1.64	0.14	0.27	Roche Cobas E411
	µU/ml =	1.36	1.09	1.63	0.14	0.27	Roche Cobas 6000/8000
	µU/ml =	1.06	0.85	1.27	0.11	0.21	Beckman DxI800 Hyper TSH
TIBC	µmol/l	39.1	30.9	47.3	4.10	8.20	FE+UIBC(saturation with iron)
	µg/dl	219	173	265	23.00	46.00	
	µmol/l	41.2	32.6	49.8	4.30	8.60	Calculated from Transferrin
	µg/dl	230	182	278	24.00	48.00	
	µmol/l	50.3	39.7	60.9	5.30	10.60	Randox Direct
Tobramycin	µg/dl	281	222	340	29.50	59.00	
	µmol/l	15.6	12.5	18.7	1.55	3.10	Gravimetric
	µg/ml	7.30	5.85	8.75	0.73	1.45	



## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Total T3	nmol/l	3.08	2.31	3.85	0.39	0.77	Abbott Architect
	ng/ml	2.01	1.50	2.52	0.26	0.51	
	ng/dl	201	150	252	25.50	51.00	Abbott Architect
	nmol/l	4.53	3.40	5.66	0.57	1.13	Siemens Centaur XP/XPT/Classic
	ng/ml	2.95	2.21	3.69	0.37	0.74	
	ng/dl	295	221	369	37.00	74.00	Siemens Centaur XP/XPT/Classic
	nmol/l	4.16	3.12	5.20	0.52	1.04	Roche Cobas E411
	ng/ml	2.71	2.03	3.39	0.34	0.68	
	ng/dl	271	203	339	34.00	68.00	Roche Cobas E411
	nmol/l	4.08	3.06	5.10	0.51	1.02	Roche Cobas 6000/8000
ng/ml	2.66	1.99	3.33	0.34	0.67		
ng/dl	266	199	333	33.50	67.00	Roche Cobas 6000/8000	
Total T4	nmol/l	247	185	309	31.00	62.00	Abbott Architect
	µg/dl	19.3	14.4	24.2	2.45	4.90	
	ng/ml	193	144	242	24.50	49.00	Abbott Architect
	nmol/l	247	185	309	31.00	62.00	Siemens Centaur XP/XPT/Classic
	µg/dl	19.3	14.4	24.2	2.45	4.90	
	ng/ml	193	144	242	24.50	49.00	Siemens Centaur XP/XPT/Classic
	nmol/l	198	149	247	24.50	49.00	Roche Cobas E411
	µg/dl	15.4	11.6	19.2	1.90	3.80	
	ng/ml	154	116	192	19.00	38.00	Roche Cobas E411
	nmol/l	197	148	246	24.50	49.00	Roche Cobas 6000/8000
	µg/dl	15.4	11.5	19.3	1.95	3.90	
	ng/ml	154	115	193	19.50	39.00	Roche Cobas 6000/8000
	nmol/l	196	147	245	24.50	49.00	Microgenics DRI assay
	µg/dl	15.3	11.5	19.1	1.90	3.80	
ng/ml	153	115	191	19.00	38.00	Microgenics DRI assay	

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Transferrin	g/l	1.78	1.42	2.14	0.18	0.36	Immunoturbidimetric
	mg/dl	178	142	214	18.00	36.00	
Triglycerides	mmol/l	2.88	2.42	3.34	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	255	214	296	20.50	41.00	
	mmol/l	2.91	2.45	3.37	0.23	0.46	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	258	217	299	20.50	41.00	
	mmol/l	2.90	2.43	3.37	0.24	0.47	L/G Kinase EP. no correction
	mg/dl	257	215	299	21.00	42.00	
	mmol/l	2.86	2.40	3.32	0.23	0.46	Lipase/Glycerol Dehydrogenase
	mg/dl	253	212	294	20.50	41.00	
mmol/l	3.20	2.69	3.71	0.26	0.51	Ortho Vitros Microslide Systems	
mg/dl	283	238	328	22.50	45.00		
UIBC	μmol/l	14.8	12.1	17.5	1.35	2.70	TIBC - FE
	μg/dl	82.7	67.6	97.8	7.55	15.10	
Urea	mmol/l	18.4	15.7	21.1	1.35	2.70	Ortho Vitros Microslide Systems
	mg/dl	111	94.4	128	8.30	16.60	
	mmol/l	20.2	17.2	23.2	1.50	3.00	Urease end point
	mg/dl	121	103	139	9.00	18.00	
	mmol/l	19.9	16.9	22.9	1.50	3.00	Urease kinetic
	mg/dl	120	102	138	9.00	18.00	
	mmol/l	18.8	16.0	21.6	1.40	2.80	Urease hypochlorite
	mg/dl	113	96.2	130	8.40	16.80	
mmol/l	19.9	16.9	22.9	1.50	3.00	BUN	
mg/dl	55.9	47.5	64.3	4.20	8.40		

## MEAN OF ALL INSTRUMENTS

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Uric Acid (Urate)	mmol/l	0.52	0.45	0.59	0.03	0.07	Ortho Vitros Microslide Systems
	mg/dl	8.77	7.63	9.91	0.57	1.14	
	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase catalase 340nm
	mg/dl	9.39	8.16	10.6	0.62	1.23	
	mmol/l	0.56	0.48	0.63	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.32	8.11	10.5	0.61	1.21	
	mmol/l	0.55	0.48	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.29	8.08	10.5	0.61	1.21	
mmol/l	0.55	0.48	0.62	0.04	0.07	Spectrophotometric at 280-290	
mg/dl	9.27	8.06	10.5	0.61	1.21		
Vitamin B12	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.17	7.98	10.4	0.60	1.19	
Vitamin B12	pmol/l	249	199	298	24.80	49.60	Roche Cobas E411
	pg/ml	337	270	404	33.50	67.00	
Zinc	µmol/l	36.3	29.0	43.6	3.65	7.30	Colorimetric with deproteinisation
	µg/dl	237	189	285	24.00	48.00	

**MEAN OF ALL INSTRUMENTS (Elec.)****ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Albumin (electrophoresis)		55.2	49.7	60.7	2.75	5.50	% of total Protein (Beckman Capillary)
alpha-1-globulin		7.4	5.6	9.2	0.89	1.78	% of total Protein (Beckman Capillary)
alpha-2-globulin		11.7	8.9	14.5	1.41	2.81	% of total Protein (Beckman Capillary)
beta-globulin		13.9	10.6	17.2	1.65	3.30	% of total Protein (Beckman Capillary)
gamma-globulin		11.8	9.0	14.6	1.42	2.83	% of total Protein (Beckman Capillary)


**MINDRAY BS-200/300/400**
**ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	29.6	25.2	34.0	2.20	4.40	Bromocresol Green
	g/dl	2.96	2.52	3.40	0.22	0.44	
ALT (GPT)	U/l	147	118	176	14.50	29.00	Tris buffer without P5P 37°C
	U/l	109	87	131	11.00	22.00	Tris buffer without P5P 30°C
	U/l	83	66	100	8.50	17.00	Tris buffer without P5P 25°C
AST (GOT)	U/l	160	128	192	16.00	32.00	Tris buffer without P5P 37°C
	U/l	108	87	129	10.50	21.00	Tris buffer without P5P 30°C
	U/l	76	61	91	7.50	15.00	Tris buffer without P5P 25°C
Bilirubin Total	µmol/l	82.2	65.0	99.4	8.60	17.20	Diazo with Sulphanilic Acid
	mg/dl	4.81	3.80	5.82	0.51	1.01	
Calcium	mmol/l	3.16	2.84	3.48	0.16	0.32	Arsenazo III
	mg/dl	12.7	11.4	14.0	0.65	1.30	
Cholesterol	mmol/l	7.14	6.21	8.07	0.47	0.93	Cholesterol Oxidase - Abell Kendall
	mg/dl	276	240	312	18.00	36.00	
CK Total	U/l	530	435	625	47.50	95.00	CK-NAC (IFCC) 37°C
	U/l	332	272	392	30.00	60.00	CK-NAC (IFCC) 30°C
	U/l	225	185	265	20.00	40.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	363	291	435	36.00	72.00	Alkaline picrate no deproteinization
	mg/dl	4.10	3.29	4.91	0.41	0.81	
	µmol/l	368	294	442	37.00	74.00	Enzymatic UV method
	mg/dl	4.16	3.32	5.00	0.42	0.84	


**MINDRAY BS-200/300/400**
**ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Creatinine	µmol/l	401	321	481	40.00	80.00	Jaffe rate blanked
	mg/dl	4.53	3.63	5.43	0.45	0.90	
gamma-GT	U/l	173	147	199	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	136	116	156	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	107	91	123	8.00	16.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.9	13.5	18.3	1.20	2.40	Glucose oxidase
	mg/dl	287	243	331	22.00	44.00	
HDL - Cholesterol	mmol/l	2.40	2.04	2.76	0.18	0.36	Direct HDL Immunoseparation
	mg/dl	92.6	78.7	107	6.95	13.90	
	mmol/l	2.27	1.93	2.61	0.17	0.34	Direct Clearance Method
	mg/dl	87.6	74.5	101	6.55	13.10	
Iron	µmol/l	35.7	29.3	42.1	3.20	6.40	Colorimetric without ppt.
	µg/dl	200	164	236	18.00	36.00	
LD (LDH)	U/l	764	650	878	57.00	114.00	P->L German methods 37°C
	U/l	552	469	635	41.50	83.00	P->L German methods 30°C
	U/l	387	330	444	28.50	57.00	P->L German methods 25°C
	U/l	703	597	809	53.00	106.00	P->L SFBC 37°C
	U/l	508	431	585	38.50	77.00	P->L SFBC 30°C
	U/l	356	303	409	26.50	53.00	P->L SFBC 25°C
	U/l	374	318	430	28.00	56.00	L->P IFCC 37°C
	U/l	270	230	310	20.00	40.00	L->P IFCC 30°C
	U/l	190	161	219	14.50	29.00	L->P IFCC 25°C
Magnesium	mmol/l	1.59	1.40	1.78	0.10	0.19	Xylidyl Blue
	mg/dl	3.86	3.40	4.32	0.23	0.46	
Phosphate Inorganic	mmol/l	2.15	1.83	2.47	0.16	0.32	Phosphomolybdate UV
	mg/dl	6.67	5.67	7.67	0.50	1.00	

## MINDRAY BS-200/300/400

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Protein Total	g/l	47.1	37.7	56.5	4.70	9.40	Biuret reaction end point
	g/dl	4.71	3.77	5.65	0.47	0.94	
Triglycerides	mmol/l	2.81	2.36	3.26	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	249	209	289	20.00	40.00	
Urea	mmol/l	20.5	17.4	23.6	1.55	3.10	Urease kinetic
	mg/dl	123	105	141	9.00	18.00	
	mmol/l	20.5	17.4	23.6	1.55	3.10	BUN
	mg/dl	57.5	48.9	66.1	4.30	8.60	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.22	8.03	10.4	0.60	1.19	
	mmol/l	0.57	0.49	0.64	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.49	8.25	10.7	0.62	1.24	
	mmol/l	0.53	0.46	0.60	0.03	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	8.92	7.76	10.1	0.58	1.16	




**Ortho VITROS®**
**ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	27.3	23.2	31.4	2.05	4.10	Ortho Vitros Microslide Systems
	g/dl	2.73	2.32	3.14	0.21	0.41	
Alkaline Phosphatase	U/l	245	208	282	18.50	37.00	Ortho Vitros Microslide Systems 37°C
ALT (GPT)	U/l	149	119	179	15.00	30.00	Ortho Vitros Microslide Systems 37°C
	U/l	148	118	178	15.00	30.00	Ortho Vitros MicroSlide visible 37°C
Amylase Total	U/l	189	160	218	14.50	29.00	Ortho Vitros Microslide Systems 37°C
AST (GOT)	U/l	207	165	249	21.00	42.00	Ortho Vitros Microslide visible slide 37°C
Bicarbonate	mmol/l	14.6	11.6	17.6	1.50	3.00	Ortho Vitros Microslide Systems
Bilirubin Total	µmol/l	75.5	59.7	91.3	7.90	15.80	Vitros 250/500/700/950 Total Bilirubin
	mg/dl	4.42	3.49	5.35	0.47	0.93	
Bilirubin, Unconjugated Vitros BU	µmol/l	71.6	56.6	86.6	7.50	15.00	BuBc Vitros Slide
	mg/dl	4.19	3.31	5.07	0.44	0.88	
Calcium	mmol/l	3.13	2.81	3.45	0.16	0.32	Ortho Vitros Microslide Systems
	mg/dl	12.5	11.3	13.7	0.60	1.20	
Chloride	mmol/l	121	111	131	5.00	10.00	Ortho Vitros Microslide Systems
	mg/dl	258	224	292	17.00	34.00	
Cholesterol	mmol/l	6.68	5.81	7.55	0.44	0.87	Ortho Vitros Microslide Systems
Cholinesterase	U/l	4836	3869	5803	483.50	967.00	Ortho Vitros Microslide Systems 37°C
CK Total	U/l	435	357	513	39.00	78.00	Ortho Vitros Microslide Systems 37°C
Creatinine	µmol/l	391	313	469	39.00	78.00	Vitros IDMS Traceable
	mg/dl	4.42	3.54	5.30	0.44	0.88	


**Ortho VITROS®**
**ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
gamma-GT	U/l	200	170	230	15.00	30.00	Ortho Vitros Microslide Systems 37°C
Glucose	mmol/l	14.4	12.2	16.6	1.10	2.20	Ortho Vitros Microslide Systems
	mg/dl	259	220	298	19.50	39.00	
HDL - Cholesterol	mmol/l	2.25	1.91	2.59	0.17	0.34	Vitros dHDL PTA/MgCl <sub>2</sub> direct precipitation
	mg/dl	86.9	73.7	100	6.60	13.20	
Iron	µmol/l	33.3	27.3	39.3	3.00	6.00	Ortho Vitros Microslide Systems
	µg/dl	186	153	219	16.50	33.00	
Lactate	mmol/l	4.91	4.02	5.80	0.45	0.89	Ortho Vitros Microslide Systems
	mg/dl	44.2	36.2	52.2	4.00	8.00	
LD (LDH)	U/l	1028	874	1182	77.00	154.00	Ortho Vitros Microslide Systems 37°C
	U/l	424	360	488	32.00	64.00	
Lipase	U/l	783	628	938	77.50	155.00	Ortho Vitros Microslide Systems 37°C
Magnesium	mmol/l	1.73	1.52	1.94	0.11	0.21	Ortho Vitros Microslide Systems
	mg/dl	4.20	3.69	4.71	0.26	0.51	
Phosphate Inorganic	mmol/l	2.18	1.85	2.51	0.17	0.33	Ortho Vitros Microslide Systems
	mg/dl	6.76	5.74	7.78	0.51	1.02	
Potassium	mmol/l	6.30	5.80	6.80	0.25	0.50	Ortho Vitros Microslide Systems
Protein Total	g/l	44.9	35.9	53.9	4.50	9.00	Ortho Vitros Microslide Systems
	g/dl	4.49	3.59	5.39	0.45	0.90	
Sodium	mmol/l	155	147	163	4.00	8.00	Ortho Vitros Microslide Systems
Triglycerides	mmol/l	3.20	2.69	3.71	0.26	0.51	Ortho Vitros Microslide Systems
	mg/dl	283	238	328	22.50	45.00	
Urea	mmol/l	18.4	15.7	21.1	1.35	2.70	Ortho Vitros Microslide Systems
	mg/dl	111	94.4	128	8.30	16.60	
	mmol/l	18.4	15.6	21.2	1.40	2.80	BUN
	mg/dl	51.6	43.9	59.3	3.85	7.70	

**Ortho VITROS®**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Uric Acid (Urate)	mmol/l	0.52	0.45	0.59	0.03	0.07	Ortho Vitros Microslide Systems
	mg/dl	8.77	7.63	9.91	0.57	1.14	

## Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Albumin	g/l	29.8	25.3	34.3	2.25	4.50	Bromocresol Green
	g/dl	2.98	2.53	3.43	0.23	0.45	
	g/l	26.8	22.7	30.9	2.05	4.10	Bromocresol Purple
	g/dl	2.68	2.27	3.09	0.21	0.41	
	g/l	25.3	21.5	29.1	1.90	3.80	Turbidimetric Assays
	g/dl	2.53	2.15	2.91	0.19	0.38	
Alkaline Phosphatase	U/l	269	228	310	20.50	41.00	Roche Integra AMP buffer 37°C
	U/l	210	178	242	16.00	32.00	Roche Integra AMP buffer 30°C
	U/l	172	146	198	13.00	26.00	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	137	109	165	14.00	28.00	Tris buffer without P5P 37°C
	U/l	101	81	121	10.00	20.00	Tris buffer without P5P 30°C
	U/l	77	61	93	8.00	16.00	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	250	213	287	18.50	37.00	Roche EPS Liquid 37°C
Amylase Total	U/l	272	231	313	20.50	41.00	BM/Roche Colorimetric pNPG7 37°C
	U/l	274	233	315	20.50	41.00	Roche Integra 2-chloro-pNPG7 37°C
	U/l	274	233	315	20.50	41.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	157	126	188	15.50	31.00	Tris buffer without P5P 37°C
	U/l	106	85	127	10.50	21.00	Tris buffer without P5P 30°C
	U/l	75	60	90	7.50	15.00	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	12.9	10.2	15.6	1.35	2.70	Colorimetric
	mmol/l	13.1	10.4	15.8	1.35	2.70	Enzymatic

## Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Bile Acids	µmol/l	45.0	36.0	54.0	4.50	9.00	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	28.3	22.4	34.2	2.95	5.90	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.66	1.31	2.01	0.18	0.35	
	µmol/l	28.3	22.3	34.3	3.00	6.00	Diazo with Sulphanilic Acid
	mg/dl	1.66	1.30	2.02	0.18	0.36	
Bilirubin Total	µmol/l	28.3	22.4	34.2	2.95	5.90	Roche JG factored
	mg/dl	1.66	1.31	2.01	0.18	0.35	
	µmol/l	74.6	58.9	90.3	7.85	15.70	Diazo with Sulphanilic Acid
	mg/dl	4.36	3.45	5.27	0.46	0.91	
Bilirubin Total	µmol/l	74.7	59.0	90.4	7.85	15.70	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.37	3.45	5.29	0.46	0.92	
	µmol/l	74.9	59.2	90.6	7.85	15.70	Diazonium ion
	mg/dl	4.38	3.46	5.30	0.46	0.92	
Calcium	mmol/l	3.12	2.80	3.44	0.16	0.32	Cresolphthalein complexone
	mg/dl	12.5	11.2	13.8	0.65	1.30	
	mmol/l	3.11	2.80	3.42	0.16	0.31	NM-BAPTA
Calcium	mg/dl	12.5	11.2	13.8	0.65	1.30	
Chloride	mmol/l	117	108	126	4.50	9.00	ISE indirect
Cholesterol	mmol/l	6.89	6.00	7.78	0.45	0.89	Cholesterol Oxidase - Abell Kendall
	mg/dl	266	232	300	17.00	34.00	
	mmol/l	6.89	5.99	7.79	0.45	0.90	Cholesterol Oxidase - IDMS
Cholesterol	mg/dl	266	231	301	17.50	35.00	
Cholinesterase	U/l	5158	4126	6190	516.00	1032.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	480	393	567	43.50	87.00	CK-NAC substrate start (DGKC) 37°C
	U/l	300	246	354	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

## Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
CK Total	U/l	487	399	575	44.00	88.00	CK-NAC (IFCC) 37°C
	U/l	305	250	360	27.50	55.00	CK-NAC (IFCC) 30°C
	U/l	207	170	244	18.50	37.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	398	318	478	40.00	80.00	Alkaline picrate no deproteinization
	mg/dl	4.50	3.59	5.41	0.46	0.91	
	µmol/l	392	314	470	39.00	78.00	Enzymatic UV method
	mg/dl	4.43	3.55	5.31	0.44	0.88	
	µmol/l	394	315	473	39.50	79.00	Roche Creatinine Plus
	mg/dl	4.45	3.56	5.34	0.45	0.89	
	µmol/l	394	315	473	39.50	79.00	Jaffe rate blanked
	mg/dl	4.45	3.56	5.34	0.45	0.89	
	µmol/l	386	309	463	38.50	77.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.36	3.49	5.23	0.44	0.87	
D-3-Hydroxybutyrate	mmol/l	1.14	0.97	1.31	0.09	0.17	Tris buffer 100mmol pH 8.5
Free T4	pmol/l	89.0	66.7	111	11.15	22.30	Roche Cobas 6000/8000
	ng/dl	6.94	5.20	8.68	0.87	1.74	
	pg/ml	69.4	52.0	86.8	8.70	17.40	Roche Cobas 6000/8000
gamma-GT	U/l	148	126	170	11.00	22.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	117	99	135	9.00	18.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	91	78	104	6.50	13.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C

## Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
gamma-GT	U/l	172	146	198	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	136	115	157	10.50	21.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	106	90	122	8.00	16.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
GLDH	U/l	31	25	37	3.00	6.00	Triethanolamine buffer 50 mmol 37°C
	U/l	24	19	29	2.50	5.00	Triethanolamine buffer 50 mmol 30°C
	U/l	19	16	22	1.50	3.00	Triethanolamine buffer 50 mmol 25°C
Glucose	mmol/l	15.1	12.8	17.4	1.15	2.30	Glucose dehydrogenase
	mg/dl	272	231	313	20.50	41.00	
	mmol/l	15.5	13.2	17.8	1.15	2.30	Hexokinase
	mg/dl	279	238	320	20.50	41.00	
HDL - Cholesterol	mmol/l	3.16	2.69	3.63	0.24	0.47	Direct HDL Roche 4th Generation
	mg/dl	122	104	140	9.00	18.00	
Iron	µmol/l	35.7	29.2	42.2	3.25	6.50	Colorimetric with ppt.
	µg/dl	200	163	237	18.50	37.00	
	µmol/l	35.7	29.3	42.1	3.20	6.40	Colorimetric without ppt.
	µg/dl	200	164	236	18.00	36.00	
Lactate	mmol/l	5.28	4.33	6.23	0.48	0.95	Colorimetric Lactate Oxidase
	mg/dl	47.6	39.0	56.2	4.30	8.60	
LD (LDH)	U/l	684	581	787	51.50	103.00	P->L German methods 37°C
	U/l	494	419	569	37.50	75.00	P->L German methods 30°C
	U/l	347	295	399	26.00	52.00	P->L German methods 25°C
	U/l	366	311	421	27.50	55.00	L->P IFCC 37°C
	U/l	264	225	303	19.50	39.00	L->P IFCC 30°C
	U/l	186	158	214	14.00	28.00	L->P IFCC 25°C
	Lipase	U/l	55	44	66	5.50	11.00

## Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Analyte	unit	Target	Range		1SD	2SD	methods
			low	high			
Lithium	mmol/l	2.09	1.84	2.34	0.13	0.25	Spectrophotometric
	mg/dl	1.45	1.28	1.62	0.09	0.17	
Magnesium	mmol/l	1.67	1.47	1.87	0.10	0.20	Xylidyl Blue
	mg/dl	4.06	3.57	4.55	0.25	0.49	
	mmol/l	1.68	1.48	1.88	0.10	0.20	Chlorphosphonazo III
	mg/dl	4.08	3.60	4.56	0.24	0.48	
Osmolality	mOsm/kg	343	275	411	34.00	68.00	Calculated
Phosphate Inorganic	mmol/l	2.16	1.83	2.49	0.17	0.33	Phosphomolybdate enzymatic
	mg/dl	6.70	5.67	7.73	0.52	1.03	
	mmol/l	2.17	1.84	2.50	0.17	0.33	Phosphomolybdate UV
	mg/dl	6.73	5.70	7.76	0.52	1.03	
Potassium	mmol/l	6.42	5.91	6.93	0.26	0.51	ISE method - indirect
Protein Total	g/l	43.9	35.1	52.7	4.40	8.80	Biuret reaction end point
	g/dl	4.39	3.51	5.27	0.44	0.88	
	g/l	44.1	35.3	52.9	4.40	8.80	Biuret reaction kinetic
	g/dl	4.41	3.53	5.29	0.44	0.88	
PSA Total	ng/ml =	35.8	26.9	44.7	4.45	8.90	Roche Cobas 6000/8000
Sodium	mmol/l	159	151	167	4.00	8.00	ISE method - indirect
Thyroid Stimulating Hormone	μU/ml =	1.36	1.09	1.63	0.14	0.27	Roche Cobas 6000/8000
TIBC	μmol/l	37.9	30.0	45.8	3.95	7.90	FE+UIBC(saturation with iron)
	μg/dl	212	168	256	22.00	44.00	
	μmol/l	43.8	34.6	53.0	4.60	9.20	Calculated from Transferrin
	μg/dl	245	193	297	26.00	52.00	
Total T3	nmol/l	4.08	3.06	5.10	0.51	1.02	Roche Cobas 6000/8000
	ng/ml	2.66	1.99	3.33	0.34	0.67	
	ng/dl	266	199	333	33.50	67.00	Roche Cobas 6000/8000



## Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Total T4	nmol/l	197	148	246	24.50	49.00	Roche Cobas 6000/8000
	µg/dl	15.4	11.5	19.3	1.95	3.90	
	ng/ml	154	115	193	19.50	39.00	Roche Cobas 6000/8000
Triglycerides	mmol/l	2.87	2.41	3.33	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	254	213	295	20.50	41.00	
	mmol/l	2.87	2.41	3.33	0.23	0.46	L/G Kinase EP. no correction
Urea	mg/dl	254	213	295	20.50	41.00	
	mmol/l	20.2	17.1	23.3	1.55	3.10	Urease end point
	mg/dl	121	103	139	9.00	18.00	
Urea	mmol/l	19.9	16.9	22.9	1.50	3.00	Urease kinetic
	mg/dl	120	102	138	9.00	18.00	
	mmol/l	19.9	16.9	22.9	1.50	3.00	BUN
Uric Acid (Urate)	mg/dl	55.9	47.5	64.3	4.20	8.40	
	mmol/l	0.54	0.47	0.62	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.14	7.95	10.3	0.60	1.19	
Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.04	7.86	10.2	0.59	1.18	
	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
mg/dl	9.02	7.85	10.2	0.59	1.17		

## Roche Cobas C111®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	29.3	24.9	33.7	2.20	4.40	Bromocresol Green
	g/dl	2.93	2.49	3.37	0.22	0.44	
Alkaline Phosphatase	U/l	277	235	319	21.00	42.00	Roche Integra AMP buffer 37°C
	U/l	216	183	249	16.50	33.00	Roche Integra AMP buffer 30°C
	U/l	177	150	204	13.50	27.00	Roche Integra AMP buffer 25°C
	U/l	283	241	325	21.00	42.00	AMP optimised to IFCC 37°C
	U/l	220	188	252	16.00	32.00	AMP optimised to IFCC 30°C
	U/l	181	154	208	13.50	27.00	AMP optimised to IFCC 25°C
	U/l	278	237	319	20.50	41.00	Colorimetric 37°C
	U/l	217	185	249	16.00	32.00	Colorimetric 30°C
ALT (GPT)	U/l	135	108	162	13.50	27.00	Tris buffer without P5P 37°C
	U/l	100	80	120	10.00	20.00	Tris buffer without P5P 30°C
	U/l	76	61	91	7.50	15.00	Tris buffer without P5P 25°C
Amylase Total	U/l	285	242	328	21.50	43.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	155	124	186	15.50	31.00	Tris buffer without P5P 37°C
	U/l	105	84	126	10.50	21.00	Tris buffer without P5P 30°C
	U/l	74	59	89	7.50	15.00	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	12.3	9.76	14.8	1.27	2.54	Enzymatic
Bilirubin Direct	µmol/l	29.4	23.2	35.6	3.10	6.20	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.72	1.36	2.08	0.18	0.36	

## Roche Cobas C111®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Bilirubin Direct	µmol/l	31.8	25.1	38.5	3.35	6.70	Diazo with Sulphanilic Acid
	mg/dl	1.86	1.47	2.25	0.20	0.39	
Bilirubin Total	µmol/l	74.9	59.2	90.6	7.85	15.70	Diazo with Sulphanilic Acid
	mg/dl	4.38	3.46	5.30	0.46	0.92	
	µmol/l	72.6	57.4	87.8	7.60	15.20	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.25	3.36	5.14	0.45	0.89	
Calcium	µmol/l	71.0	56.1	85.9	7.45	14.90	Diazonium ion
	mg/dl	4.15	3.28	5.02	0.44	0.87	
Calcium	mmol/l	3.14	2.82	3.46	0.16	0.32	Cresolphthalein complexone
	mg/dl	12.6	11.3	13.9	0.65	1.30	
	mmol/l	3.07	2.76	3.38	0.16	0.31	NM-BAPTA
	mg/dl	12.3	11.1	13.5	0.60	1.20	
Chloride	mmol/l	123	113	133	5.00	10.00	ISE indirect
Cholesterol	mmol/l	6.93	6.03	7.83	0.45	0.90	Cholesterol Oxidase - Abell Kendall
	mg/dl	267	233	301	17.00	34.00	
	mmol/l	6.97	6.06	7.88	0.46	0.91	Cholesterol Oxidase - IDMS
	mg/dl	269	234	304	17.50	35.00	
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
Creatinine	µmol/l	373	298	448	37.50	75.00	Alkaline picrate no deproteinization
	mg/dl	4.21	3.37	5.05	0.42	0.84	
	µmol/l	376	301	451	37.50	75.00	Roche Creatinine Plus
	mg/dl	4.25	3.40	5.10	0.43	0.85	
	µmol/l	347	278	416	34.50	69.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	3.92	3.14	4.70	0.39	0.78	

## Roche Cobas C111®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
gamma-GT	U/l	164	139	189	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	129	110	148	9.50	19.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	101	86	116	7.50	15.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.8	13.4	18.2	1.20	2.40	Hexokinase
	mg/dl	285	241	329	22.00	44.00	
HDL - Cholesterol	mmol/l	3.29	2.80	3.78	0.25	0.49	Direct HDL Roche 4th Generation
	mg/dl	127	108	146	9.50	19.00	
Lactate	mmol/l	5.28	4.33	6.23	0.48	0.95	Colorimetric Lactate Oxidase
	mg/dl	47.6	39.0	56.2	4.30	8.60	
LD (LDH)	U/l	377	320	434	28.50	57.00	L->P IFCC 37°C
	U/l	272	231	313	20.50	41.00	L->P IFCC 30°C
	U/l	191	162	220	14.50	29.00	L->P IFCC 25°C
Magnesium	mmol/l	1.69	1.49	1.89	0.10	0.20	Chlorophosphonazo III
	mg/dl	4.11	3.62	4.60	0.25	0.49	
Phosphate Inorganic	mmol/l	2.28	1.93	2.63	0.18	0.35	Phosphomolybdate UV
	mg/dl	7.07	5.98	8.16	0.55	1.09	
Potassium	mmol/l	6.29	5.79	6.79	0.25	0.50	ISE method - indirect
Protein Total	g/l	44.5	35.6	53.4	4.45	8.90	Biuret reaction end point
	g/dl	4.45	3.56	5.34	0.45	0.89	
Sodium	mmol/l	156	148	164	4.00	8.00	ISE method - indirect
Triglycerides	mmol/l	2.85	2.40	3.30	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	252	212	292	20.00	40.00	
	mmol/l	2.97	2.49	3.45	0.24	0.48	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	263	220	306	21.50	43.00	

## Roche Cobas C111®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Urea	mmol/l	19.2	16.3	22.1	1.45	2.90	Urease kinetic
	mg/dl	115	98.0	132	8.50	17.00	
	mmol/l	19.2	16.3	22.1	1.45	2.90	BUN
	mg/dl	53.9	45.8	62.0	4.05	8.10	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.24	8.03	10.5	0.61	1.21	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.21	8.01	10.4	0.60	1.20	
	mmol/l	0.55	0.47	0.62	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.16	7.96	10.4	0.60	1.20	

## Roche Cobas C311®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	29.5	25.1	33.9	2.20	4.40	Bromocresol Green
	g/dl	2.95	2.51	3.39	0.22	0.44	
	g/l	27.4	23.3	31.5	2.05	4.10	Bromocresol Purple
	g/dl	2.74	2.33	3.15	0.21	0.41	
Alkaline Phosphatase	U/l	264	225	303	19.50	39.00	Roche Integra AMP buffer 37°C
	U/l	206	175	237	15.50	31.00	Roche Integra AMP buffer 30°C
	U/l	169	144	194	12.50	25.00	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	136	109	163	13.50	27.00	Tris buffer without P5P 37°C
	U/l	101	81	121	10.00	20.00	Tris buffer without P5P 30°C
	U/l	77	61	93	8.00	16.00	Tris buffer without P5P 25°C
Amylase Pancreatic	U/l	268	228	308	20.00	40.00	Immunoinhibition EPS substrate 37°C
Amylase Total	U/l	276	234	318	21.00	42.00	Roche Integra 2-chloro-pNPG7 37°C
	U/l	277	235	319	21.00	42.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	157	125	189	16.00	32.00	Tris buffer without P5P 37°C
	U/l	106	85	127	10.50	21.00	Tris buffer without P5P 30°C
	U/l	75	60	90	7.50	15.00	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	12.9	10.2	15.6	1.35	2.70	Enzymatic
Bilirubin Direct	µmol/l	27.6	21.8	33.4	2.90	5.80	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.61	1.28	1.94	0.17	0.33	
	µmol/l	26.8	21.2	32.4	2.80	5.60	Diazo with Sulphanilic Acid
	mg/dl	1.57	1.24	1.90	0.17	0.33	

## Roche Cobas C311®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Bilirubin Direct	µmol/l	27.7	21.9	33.5	2.90	5.80	Roche JG factored
	mg/dl	1.62	1.28	1.96	0.17	0.34	
Bilirubin Total	µmol/l	73.9	58.4	89.4	7.75	15.50	Diazo with Sulphanilic Acid
	mg/dl	4.32	3.42	5.22	0.45	0.90	
	µmol/l	75.0	59.2	90.8	7.90	15.80	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.39	3.46	5.32	0.47	0.93	
Calcium	µmol/l	74.7	59.0	90.4	7.85	15.70	Diazonium ion
	mg/dl	4.37	3.45	5.29	0.46	0.92	
Calcium	mmol/l	3.10	2.79	3.41	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.4	11.2	13.6	0.60	1.20	
	mmol/l	3.12	2.81	3.43	0.16	0.31	NM-BAPTA
mg/dl	12.5	11.3	13.7	0.60	1.20		
Chloride	mmol/l	117	107	127	5.00	10.00	ISE indirect
Cholesterol	mmol/l	6.99	6.08	7.90	0.46	0.91	Cholesterol Oxidase - Abell Kendall
	mg/dl	270	235	305	17.50	35.00	
	mmol/l	6.98	6.07	7.89	0.46	0.91	Cholesterol Oxidase - IDMS
mg/dl	269	234	304	17.50	35.00		
CK Total	U/l	494	405	583	44.50	89.00	CK-NAC (IFCC) 37°C
	U/l	309	254	364	27.50	55.00	CK-NAC (IFCC) 30°C
	U/l	210	172	248	19.00	38.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	394	315	473	39.50	79.00	Alkaline picrate no deproteinization
	mg/dl	4.45	3.56	5.34	0.45	0.89	
	µmol/l	397	317	477	40.00	80.00	Roche Creatinine Plus
	mg/dl	4.49	3.58	5.40	0.46	0.91	
	µmol/l	388	311	465	38.50	77.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.38	3.51	5.25	0.44	0.87	

## Roche Cobas C311®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
gamma-GT	U/l	152	129	175	11.50	23.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	120	102	138	9.00	18.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	94	80	108	7.00	14.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	173	147	199	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	136	116	156	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	107	91	123	8.00	16.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.6	13.3	17.9	1.15	2.30	Hexokinase
	mg/dl	281	240	322	20.50	41.00	
	mmol/l	15.8	13.5	18.1	1.15	2.30	Glucose oxidase
	mg/dl	285	243	327	21.00	42.00	
HDL - Cholesterol	mmol/l	3.13	2.66	3.60	0.24	0.47	Direct HDL Roche 4th Generation
	mg/dl	121	103	139	9.00	18.00	
Iron	µmol/l	35.4	29.0	41.8	3.20	6.40	Colorimetric without ppt.
	µg/dl	198	162	234	18.00	36.00	
Lactate	mmol/l	5.35	4.38	6.32	0.49	0.97	Colorimetric Lactate Oxidase
	mg/dl	48.2	39.5	56.9	4.35	8.70	
LD (LDH)	U/l	670	569	771	50.50	101.00	P->L German methods 37°C
	U/l	484	411	557	36.50	73.00	P->L German methods 30°C
	U/l	340	288	392	26.00	52.00	P->L German methods 25°C
	U/l	370	315	425	27.50	55.00	L->P IFCC 37°C
	U/l	267	227	307	20.00	40.00	L->P IFCC 30°C
	U/l	188	160	216	14.00	28.00	L->P IFCC 25°C
Lipase	U/l	57	45	69	6.00	12.00	Roche Colorimetric 37°C
Magnesium	mmol/l	1.67	1.47	1.87	0.10	0.20	Xylidyl Blue
	mg/dl	4.06	3.57	4.55	0.25	0.49	



## Roche Cobas C311®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Magnesium	mmol/l	1.68	1.48	1.88	0.10	0.20	Chlorphosphonazo III
	mg/dl	4.08	3.60	4.56	0.24	0.48	
Phosphate Inorganic	mmol/l	2.19	1.86	2.52	0.17	0.33	Phosphomolybdate UV
	mg/dl	6.79	5.77	7.81	0.51	1.02	
Potassium	mmol/l	6.41	5.90	6.92	0.26	0.51	ISE method - indirect
Protein Total	g/l	44.2	35.4	53.0	4.40	8.80	Biuret reaction end point
	g/dl	4.42	3.54	5.30	0.44	0.88	
Sodium	mmol/l	159	151	167	4.00	8.00	ISE method - indirect
TIBC	µmol/l	38.7	30.6	46.8	4.05	8.10	FE+UIBC(saturation with iron)
	µg/dl	216	171	261	22.50	45.00	
Triglycerides	mmol/l	2.88	2.42	3.34	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	255	214	296	20.50	41.00	
	mmol/l	2.96	2.48	3.44	0.24	0.48	Lipase/Glycerol Dehydrogenase
	mg/dl	262	219	305	21.50	43.00	
Urea	mmol/l	19.9	16.9	22.9	1.50	3.00	Urease kinetic
	mg/dl	120	102	138	9.00	18.00	
	mmol/l	19.9	16.9	22.9	1.50	3.00	BUN
	mg/dl	55.9	47.5	64.3	4.20	8.40	
Uric Acid (Urate)	mmol/l	0.55	0.47	0.62	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.16	7.96	10.4	0.60	1.20	
	mmol/l	0.56	0.48	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.34	8.13	10.6	0.61	1.21	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.24	8.03	10.5	0.61	1.21	

## Roche Cobas c701 / c702 / c711

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	29.6	25.1	34.1	2.25	4.50	Bromocresol Green
	g/dl	2.96	2.51	3.41	0.23	0.45	
	g/l	26.1	22.2	30.0	1.95	3.90	Bromocresol Purple
	g/dl	2.61	2.22	3.00	0.20	0.39	
	g/l	28.0	23.8	32.2	2.10	4.20	Turbidimetric Assays
	g/dl	2.80	2.38	3.22	0.21	0.42	
Alkaline Phosphatase	U/l	255	217	293	19.00	38.00	Roche Integra AMP buffer 37°C
	U/l	199	169	229	15.00	30.00	Roche Integra AMP buffer 30°C
	U/l	163	139	187	12.00	24.00	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	137	110	164	13.50	27.00	Tris buffer without P5P 37°C
	U/l	101	81	121	10.00	20.00	Tris buffer without P5P 30°C
	U/l	77	62	92	7.50	15.00	Tris buffer without P5P 25°C
Amylase Total	U/l	276	235	317	20.50	41.00	BM/Roche Colorimetric pNPG7 37°C
	U/l	276	234	318	21.00	42.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	157	125	189	16.00	32.00	Tris buffer without P5P 37°C
	U/l	106	85	127	10.50	21.00	Tris buffer without P5P 30°C
	U/l	75	60	90	7.50	15.00	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	13.7	10.8	16.6	1.45	2.90	Enzymatic
Bile Acids	µmol/l	45.4	36.3	54.5	4.55	9.10	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	28.8	22.8	34.8	3.00	6.00	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.68	1.33	2.03	0.18	0.35	

## Roche Cobas c701 / c702 / c711

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Bilirubin Direct	µmol/l	28.8	22.8	34.8	3.00	6.00	Roche JG factored
	mg/dl	1.68	1.33	2.03	0.18	0.35	
	µmol/l	25.0	19.7	30.3	2.65	5.30	Oxidation to Biliverdin/Vanadate
	mg/dl	1.46	1.15	1.77	0.16	0.31	
Bilirubin Total	µmol/l	73.5	58.1	88.9	7.70	15.40	Diazo with Dichloroaniline (DCA)
	mg/dl	4.30	3.40	5.20	0.45	0.90	
	µmol/l	72.6	57.4	87.8	7.60	15.20	Diazo with Sulphanilic Acid
	mg/dl	4.25	3.36	5.14	0.45	0.89	
	µmol/l	73.4	58.0	88.8	7.70	15.40	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.29	3.39	5.19	0.45	0.90	
	µmol/l	74.4	58.7	90.1	7.85	15.70	Diazonium ion
	mg/dl	4.35	3.43	5.27	0.46	0.92	
Calcium	mmol/l	3.10	2.79	3.41	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.4	11.2	13.6	0.60	1.20	
	mmol/l	3.09	2.78	3.40	0.16	0.31	NM-BAPTA
	mg/dl	12.4	11.1	13.7	0.65	1.30	
Chloride	mmol/l	118	108	128	5.00	10.00	ISE indirect
Cholesterol	mmol/l	6.91	6.01	7.81	0.45	0.90	Cholesterol Oxidase - Abell Kendall
	mg/dl	267	232	302	17.50	35.00	
	mmol/l	6.85	5.96	7.74	0.45	0.89	Cholesterol Oxidase - IDMS
	mg/dl	264	230	298	17.00	34.00	
Cholinesterase	U/l	4886	3909	5863	488.50	977.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	489	401	577	44.00	88.00	CK-NAC (IFCC) 37°C
	U/l	306	251	361	27.50	55.00	CK-NAC (IFCC) 30°C
	U/l	208	170	246	19.00	38.00	CK-NAC (IFCC) 25°C

## Roche Cobas c701 / c702 / c711

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods	
Creatinine	µmol/l	394	315	473	39.50	79.00	Roche Creatinine Plus	
	mg/dl	4.45	3.56	5.34	0.45	0.89		
	µmol/l	382	305	459	38.50	77.00	Jaffe rate blanked	
	mg/dl	4.32	3.45	5.19	0.44	0.87		
	µmol/l	383	307	459	38.00	76.00	Jaffe rate blanked comp. (-26 µmol/l)	
	mg/dl	4.33	3.47	5.19	0.43	0.86		
	gamma-GT	U/l	147	125	169	11.00	22.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
		U/l	116	99	133	8.50	17.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
U/l		91	77	105	7.00	14.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C	
U/l		168	143	193	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C	
U/l		132	113	151	9.50	19.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C	
U/l		104	88	120	8.00	16.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C	
Glucose	mmol/l	15.5	13.2	17.8	1.15	2.30	Hexokinase	
	mg/dl	279	238	320	20.50	41.00		
HDL - Cholesterol	mmol/l	3.13	2.66	3.60	0.24	0.47	Direct HDL Roche 4th Generation	
	mg/dl	121	103	139	9.00	18.00		
Iron	µmol/l	35.0	28.7	41.3	3.15	6.30	Colorimetric without ppt.	
	µg/dl	196	160	232	18.00	36.00		
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	367	312	422	27.50	55.00	L->P IFCC 37°C	
	U/l	265	225	305	20.00	40.00	L->P IFCC 30°C	
	U/l	186	158	214	14.00	28.00	L->P IFCC 25°C	
Lipase	U/l	56	45	67	5.50	11.00	Roche Colorimetric 37°C	
Lithium	mmol/l	2.11	1.86	2.36	0.13	0.25	Spectrophotometric	
	mg/dl	1.47	1.29	1.65	0.09	0.18		

## Roche Cobas c701 / c702 / c711

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Magnesium	mmol/l	1.66	1.46	1.86	0.10	0.20	Xylidyl Blue
	mg/dl	4.03	3.55	4.51	0.24	0.48	
	mmol/l	1.65	1.45	1.85	0.10	0.20	Chlorphosphonazo III
	mg/dl	4.01	3.52	4.50	0.25	0.49	
Phosphate Inorganic	mmol/l	2.15	1.83	2.47	0.16	0.32	Phosphomolybdate UV
	mg/dl	6.67	5.67	7.67	0.50	1.00	
Potassium	mmol/l	6.42	5.90	6.94	0.26	0.52	ISE method - indirect
Protein Total	g/l	43.8	35.1	52.5	4.35	8.70	Biuret reaction end point
	g/dl	4.38	3.51	5.25	0.44	0.87	
Sodium	mmol/l	160	152	168	4.00	8.00	ISE method - indirect
TIBC	µmol/l	39.6	31.3	47.9	4.15	8.30	FE+UIBC(saturation with iron)
	µg/dl	221	175	267	23.00	46.00	
Triglycerides	mmol/l	2.86	2.40	3.32	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	253	212	294	20.50	41.00	
	mmol/l	2.86	2.40	3.32	0.23	0.46	L/G Kinase EP. no correction
	mg/dl	253	212	294	20.50	41.00	
Urea	mmol/l	19.6	16.6	22.6	1.50	3.00	Urease kinetic
	mg/dl	118	99.8	136	9.10	18.20	
	mmol/l	19.6	16.7	22.5	1.45	2.90	BUN
	mg/dl	55.0	46.8	63.2	4.10	8.20	
Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.09	7.91	10.3	0.59	1.18	
	mmol/l	0.53	0.46	0.60	0.03	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	8.95	7.80	10.1	0.58	1.15	

**Roche Cobas c701 / c702 / c711**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Uric Acid (Urate)	mmol/l	0.53	0.47	0.60	0.03	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	8.97	7.81	10.1	0.58	1.16	

## RX SERIES®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	29.3	24.9	33.7	2.20	4.40	Bromocresol Green
	g/dl	2.93	2.49	3.37	0.22	0.44	
Alkaline Phosphatase	U/l	515	438	592	38.50	77.00	Diethanolamine buffer DEA 37°C
	U/l	326	277	375	24.50	49.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	145	116	174	14.50	29.00	Tris buffer without P5P 37°C
Amylase Pancreatic	U/l	289	246	332	21.50	43.00	Randox Liquid Ethylidene pNPG7 37°C
Amylase Total	U/l	309	263	355	23.00	46.00	Randox Liquid Ethylidene pNPG7 37°C
AST (GOT)	U/l	164	131	197	16.50	33.00	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	15.0	11.9	18.1	1.55	3.10	Enzymatic
Bile Acids	µmol/l	45.8	36.6	55.0	4.60	9.20	5th Generation Colorimetric
Bilirubin Direct	µmol/l	27.7	21.9	33.5	2.90	5.80	Diazo with Sulphanilic Acid
	mg/dl	1.62	1.28	1.96	0.17	0.34	
	µmol/l	27.1	21.4	32.8	2.85	5.70	Oxidation to Biliverdin/Vanadate
	mg/dl	1.59	1.25	1.93	0.17	0.34	
Bilirubin Total	µmol/l	80.1	63.3	96.9	8.40	16.80	Diazo with Sulphanilic Acid
	mg/dl	4.69	3.70	5.68	0.50	0.99	
	µmol/l	89.5	70.7	108	9.40	18.80	Oxidation to Biliverdin/Vanadate
	mg/dl	5.24	4.14	6.34	0.55	1.10	
Calcium	mmol/l	3.08	2.78	3.38	0.15	0.30	Arsenazo III
	mg/dl	12.3	11.1	13.5	0.60	1.20	
Chloride	mmol/l	116	106	126	5.00	10.00	ISE direct

## RX SERIES®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Cholesterol	mmol/l	7.56	6.57	8.55	0.50	0.99	Cholesterol Oxidase - Abell Kendall
	mg/dl	292	254	330	19.00	38.00	
CK Total	U/l	540	443	637	48.50	97.00	CK-NAC substrate start (DGKC) 37°C
	U/l	588	482	694	53.00	106.00	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	339	271	407	34.00	68.00	Alkaline picrate no deproteinization
	mg/dl	3.83	3.06	4.60	0.39	0.77	
	µmol/l	390	312	468	39.00	78.00	Enzymatic UV method
	mg/dl	4.41	3.53	5.29	0.44	0.88	
gamma-GT	U/l	180	153	207	13.50	27.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	16.0	13.6	18.4	1.20	2.40	Hexokinase
	mg/dl	288	245	331	21.50	43.00	
	mmol/l	15.9	13.5	18.3	1.20	2.40	Glucose oxidase
	mg/dl	287	243	331	22.00	44.00	
Iron	µmol/l	38.3	31.4	45.2	3.45	6.90	Colorimetric without ppt.
	µg/dl	214	176	252	19.00	38.00	
Lactate	mmol/l	5.28	4.33	6.23	0.48	0.95	Colorimetric Lactate Oxidase
	mg/dl	47.6	39.0	56.2	4.30	8.60	
LD (LDH)	U/l	735	625	845	55.00	110.00	P->L German methods 37°C
	U/l	356	303	409	26.50	53.00	L->P IFCC 37°C
Lipase	U/l	90	72	108	9.00	18.00	Randox Colorimetric 37°C
Lithium	mmol/l	2.17	1.91	2.43	0.13	0.26	Colorimetric
	mg/dl	1.51	1.33	1.69	0.09	0.18	
Magnesium	mmol/l	1.65	1.45	1.85	0.10	0.20	Xylidyl Blue
	mg/dl	4.01	3.52	4.50	0.25	0.49	
Phosphate Inorganic	mmol/l	2.16	1.83	2.49	0.17	0.33	Phosphomolybdate UV
	mg/dl	6.70	5.67	7.73	0.52	1.03	



## RX SERIES®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Potassium	mmol/l	6.23	5.74	6.72	0.25	0.49	ISE method - direct
	mmol/l	6.53	6.01	7.05	0.26	0.52	Enzymatic
Protein Total	g/l	45.1	36.1	54.1	4.50	9.00	Biuret reaction end point
	g/dl	4.51	3.61	5.41	0.45	0.90	
Sodium	mmol/l	157	149	165	4.00	8.00	ISE method - direct
	mmol/l	159	151	167	4.00	8.00	Enzymatic
TIBC	μmol/l	50.3	39.7	60.9	5.30	10.60	Direct Colorimetric
	μg/dl	281	222	340	29.50	59.00	
Triglycerides	mmol/l	2.84	2.39	3.29	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	251	212	290	19.50	39.00	
Urea	mmol/l	19.9	16.9	22.9	1.50	3.00	Urease kinetic
	mg/dl	120	102	138	9.00	18.00	
	mmol/l	19.9	16.9	22.9	1.50	3.00	BUN
	mg/dl	55.9	47.5	64.3	4.20	8.40	
Uric Acid (Urate)	mmol/l	0.58	0.50	0.65	0.04	0.08	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.71	8.45	11.0	0.63	1.26	
	mmol/l	0.57	0.49	0.64	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.54	8.30	10.8	0.62	1.24	


**SIEMENS ATELLICA / ADVIA 1200/1650/1800/2400®**
**ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	28.2	24.0	32.4	2.10	4.20	Bromocresol Green
	g/dl	2.82	2.40	3.24	0.21	0.42	
	g/l	26.8	22.7	30.9	2.05	4.10	Bromocresol Purple
	g/dl	2.68	2.27	3.09	0.21	0.41	
Alkaline Phosphatase	U/l	293	249	337	22.00	44.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	157	125	189	16.00	32.00	Tris buffer without P5P 37°C
Amylase Total	U/l	294	250	338	22.00	44.00	Siemens - blocked pNPG7 37°C
AST (GOT)	U/l	172	138	206	17.00	34.00	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	14.4	11.4	17.4	1.50	3.00	Enzymatic
Bile Acids	µmol/l	49.0	39.2	58.8	4.90	9.80	Enzymatic Colorimetric
Bilirubin Direct	µmol/l	27.6	21.8	33.4	2.90	5.80	Oxidation to Biliverdin/Vanadate
	mg/dl	1.61	1.28	1.94	0.17	0.33	
Bilirubin Total	µmol/l	89.5	70.7	108	9.40	18.80	Oxidation to Biliverdin/Vanadate
	mg/dl	5.24	4.14	6.34	0.55	1.10	
Calcium	mmol/l	3.16	2.84	3.48	0.16	0.32	Cresolphthalein complexone
	mg/dl	12.7	11.4	14.0	0.65	1.30	
	mmol/l	3.01	2.71	3.31	0.15	0.30	Arsenazo III
	mg/dl	12.1	10.9	13.3	0.60	1.20	
Chloride	mmol/l	121	111	131	5.00	10.00	ISE indirect
Cholesterol	mmol/l	7.10	6.18	8.02	0.46	0.92	Cholesterol Oxidase - Abell Kendall
	mg/dl	274	239	309	17.50	35.00	


**SIEMENS ATELLICA / ADVIA 1200/1650/1800/2400®**
**ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Cholinesterase	U/l	5202	4162	6242	520.00	1040.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	514	421	607	46.50	93.00	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	376	301	451	37.50	75.00	Enzymatic UV method
	mg/dl	4.25	3.40	5.10	0.43	0.85	
	µmol/l	360	288	432	36.00	72.00	Jaffe rate blanked
	mg/dl	4.07	3.25	4.89	0.41	0.82	
gamma-GT	U/l	171	146	196	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	171	146	196	12.50	25.00	
Glucose	mmol/l	15.1	12.8	17.4	1.15	2.30	Hexokinase
	mg/dl	272	231	313	20.50	41.00	
	mmol/l	15.1	12.8	17.4	1.15	2.30	Glucose oxidase
	mg/dl	272	231	313	20.50	41.00	
HDL - Cholesterol	mmol/l	2.08	1.77	2.39	0.16	0.31	Direct Clearance Method
	mg/dl	80.3	68.3	92.3	6.00	12.00	
Iron	µmol/l	35.6	29.2	42.0	3.20	6.40	Colorimetric without ppt.
	µg/dl	199	163	235	18.00	36.00	
Lactate	mmol/l	5.20	4.26	6.14	0.47	0.94	Colorimetric Lactate Oxidase
	mg/dl	46.9	38.4	55.4	4.25	8.50	
LD (LDH)	U/l	710	603	817	53.50	107.00	P->L German methods 37°C
	U/l	365	310	420	27.50	55.00	L->P IFCC 37°C
Lipase	U/l	85	68	102	8.50	17.00	Other Colorimetric 37°C
Lithium	mmol/l	2.05	1.81	2.29	0.12	0.24	Spectrophotometric
	mg/dl	1.42	1.26	1.58	0.08	0.16	
Magnesium	mmol/l	1.65	1.45	1.85	0.10	0.20	Xylidyl Blue
	mg/dl	4.01	3.52	4.50	0.25	0.49	


**SIEMENS ATELLICA / ADVIA 1200/1650/1800/2400®**
**ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)**

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

**Range**

Analyte	unit	Target	low	high	1SD	2SD	methods
Phosphate Inorganic	mmol/l	2.22	1.89	2.55	0.17	0.33	Phosphomolybdate UV
	mg/dl	6.88	5.86	7.90	0.51	1.02	
Potassium	mmol/l	6.40	5.89	6.91	0.26	0.51	ISE method - indirect
Protein Total	g/l	43.0	34.4	51.6	4.30	8.60	Biuret reaction end point
	g/dl	4.30	3.44	5.16	0.43	0.86	
Sodium	mmol/l	159	151	167	4.00	8.00	ISE method - indirect
TIBC	μmol/l	46.6	36.8	56.4	4.90	9.80	FE+UIBC(saturation with iron)
	μg/dl	260	206	314	27.00	54.00	
	μmol/l	43.1	34.0	52.2	4.55	9.10	Direct Colorimetric
	μg/dl	241	190	292	25.50	51.00	
	μmol/l	38.0	30.0	46.0	4.00	8.00	Calculated from Transferrin
	μg/dl	212	168	256	22.00	44.00	
Triglycerides	mmol/l	2.91	2.44	3.38	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	258	216	300	21.00	42.00	
Urea	mmol/l	20.3	17.3	23.3	1.50	3.00	Urease kinetic
	mg/dl	122	104	140	9.00	18.00	
	mmol/l	20.3	17.3	23.3	1.50	3.00	BUN
	mg/dl	57.0	48.5	65.5	4.25	8.50	
Uric Acid (Urate)	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.41	8.20	10.6	0.61	1.21	

## SIEMENS DIMENSION EXL®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	27.0	23.0	31.0	2.00	4.00	Bromocresol Purple
	g/dl	2.70	2.30	3.10	0.20	0.40	
Alkaline Phosphatase	U/l	300	255	345	22.50	45.00	Siemens Dimension AMP buffer 37°C
	U/l	301	256	346	22.50	45.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	151	120	182	15.50	31.00	Tris buffer with P5P 37°C
	U/l	150	120	180	15.00	30.00	Tris buffer with P5P NVKC 37°C
	U/l	156	125	187	15.50	31.00	Siemens Dade Standard Non IFCC Correlated 37°C
Amylase Total	U/l	338	287	389	25.50	51.00	Siemens 2-chloro-pNPG3 37°C
AST (GOT)	U/l	194	156	232	19.00	38.00	Tris buffer with P5P 37°C
	U/l	199	159	239	20.00	40.00	Tris buffer with P5P NVKC 37°C
	U/l	199	159	239	20.00	40.00	Siemens Dade Standard Non IFCC Correlated 37°C
Bilirubin Direct	µmol/l	17.0	13.4	20.6	1.80	3.60	Diazo/Sulphanilic Siemens Dimension
	mg/dl	0.995	0.784	1.21	0.11	0.21	
Bilirubin Total	µmol/l	78.6	62.1	95.1	8.25	16.50	Diazo with Sulphanilic Acid
	mg/dl	4.60	3.63	5.57	0.49	0.97	
Calcium	mmol/l	3.08	2.77	3.39	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.3	11.1	13.5	0.60	1.20	
Chloride	mmol/l	120	110	130	5.00	10.00	ISE indirect
Cholesterol	mmol/l	6.65	5.78	7.52	0.44	0.87	Cholesterol Oxidase - Abell Kendall
	mg/dl	257	223	291	17.00	34.00	
	mmol/l	6.76	5.88	7.64	0.44	0.88	Dimension-Siemens reagents
	mg/dl	261	227	295	17.00	34.00	

## SIEMENS DIMENSION EXL®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
CK Total	U/l	488	400	576	44.00	88.00	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	386	309	463	38.50	77.00	Alkaline picrate no deproteinization
	mg/dl	4.36	3.49	5.23	0.44	0.87	
	µmol/l	392	314	470	39.00	78.00	Jaffe rate blanked
	mg/dl	4.43	3.55	5.31	0.44	0.88	
gamma-GT	U/l	181	154	208	13.50	27.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	192	164	220	14.00	28.00	Siemens Dimension (non IFCC) 37°C
Glucose	mmol/l	15.5	13.2	17.8	1.15	2.30	Hexokinase
	mg/dl	279	238	320	20.50	41.00	
HDL - Cholesterol	mmol/l	2.55	2.17	2.93	0.19	0.38	Direct HDL PEGME
	mg/dl	98.4	83.8	113	7.30	14.60	
Iron	µmol/l	34.0	27.9	40.1	3.05	6.10	Colorimetric without ppt.
	µg/dl	190	156	224	17.00	34.00	
LD (LDH)	U/l	354	301	407	26.50	53.00	Siemens Dimension L-P Non IFCC 37°C
	U/l	341	290	392	25.50	51.00	L->P IFCC 37°C
Lipase	U/l	258	207	309	25.50	51.00	Colorimetric Siemens Dimension (LIPL Kit) 37°C
Magnesium	mmol/l	1.67	1.47	1.87	0.10	0.20	Methylthymol blue
	mg/dl	4.06	3.57	4.55	0.25	0.49	
Phosphate Inorganic	mmol/l	2.25	1.91	2.59	0.17	0.34	Phosphomolybdate enzymatic
	mg/dl	6.98	5.92	8.04	0.53	1.06	
	mmol/l	2.21	1.88	2.54	0.17	0.33	Phosphomolybdate UV
	mg/dl	6.85	5.83	7.87	0.51	1.02	
Potassium	mmol/l	6.43	5.91	6.95	0.26	0.52	ISE method - indirect
Protein Total	g/l	45.5	36.4	54.6	4.55	9.10	Biuret reaction end point
	g/dl	4.55	3.64	5.46	0.46	0.91	

## SIEMENS DIMENSION EXL®

## ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

### Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Sodium	mmol/l	160	152	168	4.00	8.00	ISE method - indirect
Triglycerides	mmol/l	2.84	2.39	3.29	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	251	212	290	19.50	39.00	
	mmol/l	2.76	2.32	3.20	0.22	0.44	L/G Kinase EP. no correction
	mg/dl	244	205	283	19.50	39.00	
Urea	mmol/l	20.3	17.2	23.4	1.55	3.10	Urease kinetic
	mg/dl	122	103	141	9.50	19.00	
	mmol/l	20.3	17.3	23.3	1.50	3.00	BUN
	mg/dl	57.0	48.5	65.5	4.25	8.50	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.29	8.08	10.5	0.61	1.21	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Spectrophotometric at 280-290
	mg/dl	9.26	8.05	10.5	0.61	1.21	

## SIEMENS DIMENSION RxL/Max/Xpand®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Albumin	g/l	28.1	23.9	32.3	2.10	4.20	Bromocresol Green
	g/dl	2.81	2.39	3.23	0.21	0.42	
	g/l	27.2	23.2	31.2	2.00	4.00	Bromocresol Purple
	g/dl	2.72	2.32	3.12	0.20	0.40	
Alkaline Phosphatase	U/l	298	254	342	22.00	44.00	Siemens Dimension AMP buffer 37°C
	U/l	303	258	348	22.50	45.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	154	123	185	15.50	31.00	Tris buffer with P5P 37°C
	U/l	153	122	184	15.50	31.00	Siemens Dade Standard Non IFCC Correlated 37°C
Amylase Total	U/l	335	285	385	25.00	50.00	Siemens 2-chloro-pNPG3 37°C
AST (GOT)	U/l	193	154	232	19.50	39.00	Tris buffer with P5P 37°C
	U/l	206	164	248	21.00	42.00	Siemens Dade Standard Non IFCC Correlated 37°C
Bilirubin Direct	µmol/l	16.6	13.1	20.1	1.75	3.50	Diazo/Sulphanilic Siemens Dimension
	mg/dl	0.971	0.766	1.18	0.10	0.21	
Bilirubin Total	µmol/l	79.1	62.5	95.7	8.30	16.60	Diazo with Sulphanilic Acid
	mg/dl	4.63	3.66	5.60	0.49	0.97	
Calcium	mmol/l	3.07	2.76	3.38	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.3	11.1	13.5	0.60	1.20	
Chloride	mmol/l	118	109	127	4.50	9.00	ISE indirect
Cholesterol	mmol/l	6.75	5.87	7.63	0.44	0.88	Dimension-Siemens reagents
	mg/dl	261	227	295	17.00	34.00	
CK Total	U/l	488	400	576	44.00	88.00	CK-NAC (IFCC) 37°C



## SIEMENS DIMENSION RxL/Max/Xpand®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Creatinine	μmol/l	379	303	455	38.00	76.00	Alkaline picrate no deproteinization
	mg/dl	4.28	3.42	5.14	0.43	0.86	
	μmol/l	381	305	457	38.00	76.00	Enzymatic UV method
	mg/dl	4.31	3.45	5.17	0.43	0.86	
gamma-GT	U/l	204	173	235	15.50	31.00	Siemens Dimension (non IFCC) 37°C
Glucose	mmol/l	15.3	13.0	17.6	1.15	2.30	Hexokinase
	mg/dl	276	234	318	21.00	42.00	
HDL - Cholesterol	mmol/l	2.52	2.14	2.90	0.19	0.38	Direct HDL PPD
	mg/dl	97.3	82.6	112	7.35	14.70	
	mmol/l	2.53	2.15	2.91	0.19	0.38	Direct HDL PEGME
	mg/dl	97.7	83.0	112	7.35	14.70	
Iron	μmol/l	33.8	27.7	39.9	3.05	6.10	Colorimetric without ppt.
	μg/dl	189	155	223	17.00	34.00	
LD (LDH)	U/l	346	294	398	26.00	52.00	L->P IFCC 37°C
Lipase	U/l	259	207	311	26.00	52.00	Colorimetric Siemens Dimension (LIPL Kit) 37°C
Magnesium	mmol/l	1.63	1.43	1.83	0.10	0.20	Methylthymol blue
	mg/dl	3.96	3.47	4.45	0.25	0.49	
Phosphate Inorganic	mmol/l	2.21	1.88	2.54	0.17	0.33	Phosphomolybdate UV
	mg/dl	6.85	5.83	7.87	0.51	1.02	
Potassium	mmol/l	6.26	5.76	6.76	0.25	0.50	ISE method - indirect
Protein Total	g/l	45.9	36.7	55.1	4.60	9.20	Biuret reaction end point
	g/dl	4.59	3.67	5.51	0.46	0.92	
Sodium	mmol/l	157	149	165	4.00	8.00	ISE method - indirect
Triglycerides	mmol/l	2.83	2.38	3.28	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	250	211	289	19.50	39.00	

**SIEMENS DIMENSION RxL/Max/Xpand®**

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1103UE Cat. No. HE1532 / HS2611

Size 20 x 5 ml / 5 x 5 ml Expiry 2023-07-28

Range

Analyte	unit	Target	low	high	1SD	2SD	methods
Triglycerides	mmol/l	2.84	2.38	3.30	0.23	0.46	Lipase/Glycerol Dehydrogenase
	mg/dl	251	211	291	20.00	40.00	
Urea	mmol/l	20.7	17.6	23.8	1.55	3.10	Urease end point
	mg/dl	124	106	142	9.00	18.00	
	mmol/l	20.3	17.2	23.4	1.55	3.10	Urease kinetic
	mg/dl	122	103	141	9.50	19.00	
	mmol/l	20.3	17.3	23.3	1.50	3.00	BUN
	mg/dl	57.0	48.5	65.5	4.25	8.50	
Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.11	7.93	10.3	0.59	1.18	
	mmol/l	0.55	0.48	0.63	0.04	0.07	Spectrophotometric at 280-290
	mg/dl	9.31	8.10	10.5	0.61	1.21	