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

CAT. NO. HE1532 **GTIN:** 05055273203608 **SIZE:** 20 x 5ml
CAT. NO. HS2611 **GTIN:** 05055273203813 **SIZE:** 5 x 5ml
LOT NO. 1270UE **EXPIRY:** 2026-01-28

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.
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.
GLDH is stable for 2 day at 2 - 8°C.
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.

Due to the zinc content in some batches of rubber stoppers, the QC and calibrator material should be aliquoted into polypropylene tubes and stored at +2°C to +8°C to ensure stable zinc levels throughout the stability period.

PREPARATION FOR USE
The Human Assayed Multi-sera is supplied lyophilised.

1. 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.

2. Refer to the Control section of the individual analyser application.

3. 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
Due to the variation caused by test equipment, test reagents and laboratory technique, the quoted ranges are provided for guidance. It is recommended that these ranges are used until each laboratory has established its own ranges, based on individual laboratory requirements.

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 ±2S.D.

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

NOTES
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(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.

EC REP Randox Teoranta, Meenmore,
Dungloe, Donegal,
F94 TV06, Ireland

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METHOD

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	30.0	25.5	34.5	2.25	4.50	Bromocresol Green
	g/dl	3.00	2.55	3.45	0.23	0.45	
	g/l	28.0	23.8	32.2	2.10	4.20	Bromocresol Purple
	g/dl	2.80	2.38	3.22	0.21	0.42	
	g/l	29.1	24.8	33.4	2.15	4.30	Ortho Vitros Microslide Systems
	g/dl	2.91	2.48	3.34	0.22	0.43	
	g/l	27.4	23.3	31.5	2.05	4.10	Turbidimetric Assays
	g/dl	2.74	2.33	3.15	0.21	0.41	
Alkaline Phosphatase	U/l	273	232	314	20.50	41.00	Ortho Vitros Microslide Systems 37°C
	U/l	512	435	589	38.50	77.00	Diethanolamine buffer DEA 37°C
	U/l	399	339	459	30.00	60.00	Diethanolamine buffer DEA 30°C
	U/l	327	278	376	24.50	49.00	Diethanolamine buffer DEA 25°C
	U/l	346	294	398	26.00	52.00	AMP optimised to IFCC 37°C
	U/l	270	229	311	20.50	41.00	AMP optimised to IFCC 30°C
	U/l	221	188	254	16.50	33.00	AMP optimised to IFCC 25°C
	U/l	332	282	382	25.00	50.00	AMP non-optimised 37°C
	U/l	259	220	298	19.50	39.00	AMP non-optimised 30°C
	U/l	212	180	244	16.00	32.00	AMP non-optimised 25°C
	U/l	323	275	371	24.00	48.00	Colorimetric 37°C
	U/l	252	214	290	19.00	38.00	Colorimetric 30°C
	U/l	206	176	236	15.00	30.00	Colorimetric 25°C

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
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Email: applications@randox.com Website: www.randox.com

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Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
ALT (GPT)	U/l	135	108	162	13.50	27.00	Colorimetric 37°C
	U/l	100	80	120	10.00	20.00	Colorimetric 30°C
	U/l	76	61	91	7.50	15.00	Colorimetric 25°C
	U/l	138	111	165	13.50	27.00	Ortho Vitros Microslide Systems 37°C
	U/l	148	118	178	15.00	30.00	Tris buffer with P5P 37°C
	U/l	110	87	133	11.50	23.00	Tris buffer with P5P 30°C
	U/l	83	66	100	8.50	17.00	Tris buffer with P5P 25°C
	U/l	138	110	166	14.00	28.00	Tris buffer without P5P 37°C
	U/l	102	81	123	10.50	21.00	Tris buffer without P5P 30°C
	U/l	78	62	94	8.00	16.00	Tris buffer without P5P 25°C
	U/l	156	125	187	15.50	31.00	Tris buffer with P5P NVKC 37°C
	U/l	115	93	137	11.00	22.00	Tris buffer with P5P NVKC 30°C
	U/l	88	70	106	9.00	18.00	Tris buffer with P5P NVKC 25°C
	U/l	135	108	162	13.50	27.00	Ortho Vitros MicroSlide visible 37°C
Amylase Pancreatic	U/l	234	199	269	17.50	35.00	Immunoinhibition EPS substrate 37°C
	U/l	237	201	273	18.00	36.00	Roche EPS Liquid 37°C
	U/l	268	228	308	20.00	40.00	Randox Liquid Ethylidene pNPG7 37°C
Amylase Total	U/l	275	234	316	20.50	41.00	Siemens - blocked pNPG7 37°C
	U/l	221	188	254	16.50	33.00	Randox Lyo. Ethylidene pNPG7 37°C
	U/l	296	252	340	22.00	44.00	Randox Liquid Ethylidene pNPG7 37°C
	U/l	264	224	304	20.00	40.00	BM/Roche Colorimetric pNPG7 37°C
	U/l	261	222	300	19.50	39.00	Roche Integra 2-chloro-pNPG7 37°C
	U/l	172	146	198	13.00	26.00	Ortho Vitros Microslide Systems 37°C
	U/l	255	217	293	19.00	38.00	Other Roche 2-chloro-pNPG7 37°C
	U/l	259	220	298	19.50	39.00	Roche liquid stable pNPG7 37°C

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

Analyte	unit	Target	Range low	Range high	1SD	2SD	methods
Amylase Total	U/l	316	269	363	23.50	47.00	Siemens 2-chloro-pNPG3 37°C
	U/l	275	233	317	21.00	42.00	Beckman Coulter - blocked pNPG7 37°C
	U/l	271	231	311	20.00	40.00	Beckman Synchron AMY7 37°C
	U/l	293	249	337	22.00	44.00	Abbott Architect Non-IFCC Cal. 37°C
	U/l	334	284	384	25.00	50.00	Abbott Architect IFCC Cal. 37°C
	U/l	259	220	298	19.50	39.00	Beckman CNPG3 (Extinction Coeff) 37°C
Apolipoprotein A-1	g/l	1.15	0.94	1.36	0.10	0.21	Immunoturbidimetric
	mg/dl	115	94.3	136	10.35	20.70	
Apolipoprotein B	g/l	0.64	0.52	0.75	0.06	0.12	Immunoturbidimetric
	mg/dl	63.8	52.3	75.3	5.75	11.50	
Acid Phosphatase (Total)	U/l	50.0	33.5	66.5	8.25	16.50	1-Naphthyl Phosphate substrate Kinetic 37°C
AST (GOT)	U/l	180	144	216	18.00	36.00	Ortho Vitros Microslide visible slide 37°C
	U/l	182	145	219	18.50	37.00	Tris buffer with P5P 37°C
	U/l	123	98	148	12.50	25.00	Tris buffer with P5P 30°C
	U/l	87	69	105	9.00	18.00	Tris buffer with P5P 25°C
	U/l	136	109	163	13.50	27.00	Tris buffer without P5P 37°C
	U/l	92	74	110	9.00	18.00	Tris buffer without P5P 30°C
	U/l	65	52	78	6.50	13.00	Tris buffer without P5P 25°C
	U/l	177	141	213	18.00	36.00	Tris buffer with P5P NVKC 37°C
	U/l	120	95	145	12.50	25.00	Tris buffer with P5P NVKC 30°C
	U/l	84	67	101	8.50	17.00	Tris buffer with P5P NVKC 25°C
Bile Acids	µmol/l	41.9	33.5	50.3	4.20	8.40	4th Generation Colorimetric
	µmol/l	42.7	34.2	51.2	4.25	8.50	5th Generation Colorimetric
Bicarbonate	mmol/l	14.0	11.1	16.9	1.45	2.90	Colorimetric
	mmol/l	13.7	10.9	16.5	1.40	2.80	Enzymatic

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METHOD

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

Analyte	unit	Target	Range low	Range high	1SD	2SD	methods
Bilirubin Direct	µmol/l	27.3	21.5	33.1	2.90	5.80	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.60	1.26	1.94	0.17	0.34	
	µmol/l	30.0	23.7	36.3	3.15	6.30	Diazo with Sulphanilic Acid
	mg/dl	1.76	1.39	2.13	0.19	0.37	
	µmol/l	30.1	23.7	36.5	3.20	6.40	Diazo with Dichloroaniline (DCA)
	mg/dl	1.76	1.39	2.13	0.19	0.37	
	µmol/l	29.9	23.6	36.2	3.15	6.30	Oxidation to Biliverdin/Vanadate
	mg/dl	1.75	1.38	2.12	0.19	0.37	
	µmol/l	31.2	24.6	37.8	3.30	6.60	Modified Jendrassik
	mg/dl	1.83	1.44	2.22	0.20	0.39	
Bilirubin Total	µmol/l	81.9	64.7	99.1	8.60	17.20	Vitros 250/500/700/950 Total Bilirubin
	mg/dl	4.79	3.78	5.80	0.51	1.01	
	µmol/l	89.8	70.9	109	9.45	18.90	Diazo with Dichloroaniline (DCA)
	mg/dl	5.25	4.15	6.35	0.55	1.10	
	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	79.8	63.0	96.6	8.40	16.80	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.67	3.69	5.65	0.49	0.98	
	µmol/l	86.9	68.6	105	9.15	18.30	Nitrobenzenediazonium salt
	mg/dl	5.08	4.01	6.15	0.54	1.07	
	µmol/l	83.5	65.9	101	8.80	17.60	Diazonium ion
	mg/dl	4.88	3.86	5.90	0.51	1.02	
	µmol/l	97.0	76.6	117	10.20	20.40	Oxidation to Biliverdin/Vanadate
	mg/dl	5.67	4.48	6.86	0.60	1.19	
	µmol/l	96.6	76.3	117	10.15	20.30	Modified Jendrassik
	mg/dl	5.65	4.46	6.84	0.60	1.19	

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Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
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	
	mmol/l	3.00	2.70	3.30	0.15	0.30	Ortho Vitros Microslide Systems
	mg/dl	12.0	10.8	13.2	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	3.10	2.79	3.41	0.16	0.31	Methylthymol blue
	mg/dl	12.4	11.2	13.6	0.60	1.20	
	mmol/l	3.06	2.75	3.37	0.16	0.31	Arsenazo III
	mg/dl	12.3	11.0	13.6	0.65	1.30	
	mmol/l	3.07	2.77	3.37	0.15	0.30	NM-BAPTA
	mg/dl	12.3	11.1	13.5	0.60	1.20	
	mmol/l	1.05	0.95	1.16	0.05	0.11	Ionised calcium
	mg/dl	4.21	3.79	4.63	0.21	0.42	
Cholesterol	mmol/l	6.84	5.95	7.73	0.45	0.89	Ortho Vitros Microslide Systems
	mg/dl	264	230	298	17.00	34.00	
	mmol/l	7.18	6.25	8.11	0.47	0.93	Cholesterol Oxidase - Abell Kendall
	mg/dl	277	241	313	18.00	36.00	
	mmol/l	7.21	6.27	8.15	0.47	0.94	Cholesterol Oxidase - IDMS
	mg/dl	278	242	314	18.00	36.00	
	mmol/l	7.19	6.25	8.13	0.47	0.94	Cholesterol Dehydrogenase
	mg/dl	278	241	315	18.50	37.00	
Chloride	mmol/l	117	108	126	4.50	9.00	Colorimetric
	mmol/l	114	105	123	4.50	9.00	Ortho Vitros Microslide Systems

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			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Chloride	mmol/l	112	103	121	4.50	9.00	ISE indirect
	mmol/l	112	103	121	4.50	9.00	ISE direct
Cholinesterase	U/l	5402	4321	6483	540.50	1081.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	423	347	499	38.00	76.00	Ortho Vitros Microslide Systems 37°C
	U/l	520	426	614	47.00	94.00	CK-NAC serum start (DGKC) 37°C
	U/l	326	267	385	29.50	59.00	CK-NAC serum start (DGKC) 30°C
	U/l	221	181	261	20.00	40.00	CK-NAC serum start (DGKC) 25°C
	U/l	535	439	631	48.00	96.00	CK-NAC substrate start (DGKC) 37°C
	U/l	335	275	395	30.00	60.00	CK-NAC substrate start (DGKC) 30°C
	U/l	227	187	267	20.00	40.00	CK-NAC substrate start (DGKC) 25°C
	U/l	519	425	613	47.00	94.00	CK-NAC (IFCC) 37°C
	U/l	325	266	384	29.50	59.00	CK-NAC (IFCC) 30°C
	U/l	221	181	261	20.00	40.00	CK-NAC (IFCC) 25°C
Copper	µmol/l	25.8	20.6	31.0	2.60	5.20	Atomic absorption
	µg/dl	164	131	197	16.50	33.00	
	µmol/l	25.3	20.2	30.4	2.55	5.10	Colorimetric
	µg/dl	161	128	194	16.50	33.00	
Cortisol	nmol/l	945	709	1181	118.00	236.00	Roche Cobas e402/e801
	µg/dl	34.0	25.5	42.5	4.25	8.50	
Creatinine	µmol/l	385	308	462	38.50	77.00	Alkaline picrate with deproteinization
	mg/dl	4.35	3.48	5.22	0.44	0.87	
	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	404	324	484	40.00	80.00	Enzymatic UV method
	mg/dl	4.57	3.66	5.48	0.46	0.91	

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Creatinine	µmol/l	401	321	481	40.00	80.00	Creatinine PAP method
	mg/dl	4.53	3.63	5.43	0.45	0.90	
	µmol/l	396	317	475	39.50	79.00	Jaffe rate blanked
	mg/dl	4.47	3.58	5.36	0.45	0.89	
	µmol/l	392	314	470	39.00	78.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.43	3.55	5.31	0.44	0.88	
	µmol/l	386	309	463	38.50	77.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.36	3.49	5.23	0.44	0.87	
	µmol/l	397	318	476	39.50	79.00	Vitros IDMS Traceable
	mg/dl	4.49	3.59	5.39	0.45	0.90	
	µmol/l	391	313	469	39.00	78.00	IDMS traceable
	mg/dl	4.42	3.54	5.30	0.44	0.88	
D-3-Hydroxybutyrate	mmol/l	1.10	0.93	1.27	0.08	0.17	Tris buffer 100mmol pH 8.5
Digoxin	nmol/l	3.74	2.99	4.49	0.38	0.75	Immunoturbidimetric
	ng/ml	2.92	2.34	3.50	0.29	0.58	
Folate	nmol/l	7.05	5.36	8.74	0.85	1.69	Roche Cobas e402/e801
	ng/ml	3.11	2.36	3.86	0.38	0.75	
Free T4	pmol/l	54.2	40.7	67.7	6.75	13.50	Abbott Architect
	ng/dl	4.23	3.17	5.29	0.53	1.06	
	pg/ml	42.3	31.7	52.9	5.30	10.60	Abbott Architect
	pmol/l	66.3	49.7	82.9	8.30	16.60	Siemens Centaur XP/XPT/Classic
	ng/dl	5.17	3.88	6.46	0.65	1.29	
	pg/ml	51.7	38.8	64.6	6.45	12.90	Siemens Centaur XP/XPT/Classic
	pmol/l	61.0	45.8	76.2	7.60	15.20	Beckman Access
	ng/dl	4.76	3.57	5.95	0.60	1.19	
	pg/ml	47.6	35.7	59.5	5.95	11.90	Beckman Access

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Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Free T4	pmol/l	77.3	58.0	96.6	9.65	19.30	Roche Cobas 4000/E411
	ng/dl	6.03	4.52	7.54	0.76	1.51	
	pg/ml	60.3	45.2	75.4	7.55	15.10	Roche Cobas 4000/E411
	pmol/l	81.8	61.3	102	10.25	20.50	Roche Cobas e601/602
	ng/dl	6.38	4.78	7.98	0.80	1.60	
	pg/ml	63.8	47.8	79.8	8.00	16.00	Roche Cobas e601/602
	pmol/l	74.8	56.1	93.5	9.35	18.70	Biomerieux Vidas FT4N Kit
	ng/dl	5.83	4.38	7.28	0.73	1.45	
	pg/ml	58.3	43.8	72.8	7.25	14.50	Biomerieux Vidas FT4N Kit
	pmol/l	81.6	61.2	102	10.20	20.40	Roche Cobas e402/e801
	ng/dl	6.36	4.77	7.95	0.80	1.59	
	pg/ml	63.6	47.7	79.5	7.95	15.90	Roche Cobas e402/e801
Gentamicin	µmol/l	19.0	15.2	22.8	1.90	3.80	Gravimetric
	µg/ml	9.08	7.27	10.9	0.91	1.81	
gamma-GT	U/l	154	131	177	11.50	23.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	121	103	139	9.00	18.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	95	81	109	7.00	14.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	194	165	223	14.50	29.00	Ortho Vitros Microslide Systems 37°C
	U/l	163	138	188	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	128	109	147	9.50	19.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	101	85	117	8.00	16.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
	U/l	173	147	199	13.00	26.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	136	116	156	10.00	20.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	107	91	123	8.00	16.00	Randox Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

METHOD

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
GLDH	U/l	30	24	36	3.00	6.00	Triethanolamine buffer 50 mmol 37°C
	U/l	23	18	28	2.50	5.00	Triethanolamine buffer 50 mmol 30°C
	U/l	19	15	23	2.00	4.00	Triethanolamine buffer 50 mmol 25°C
Glucose	mmol/l	14.9	12.7	17.1	1.10	2.20	Ortho Vitros Microslide Systems
	mg/dl	268	229	307	19.50	39.00	
	mmol/l	15.4	13.1	17.7	1.15	2.30	Glucose dehydrogenase
	mg/dl	278	236	320	21.00	42.00	
	mmol/l	15.7	13.3	18.1	1.20	2.40	Hexokinase
	mg/dl	283	240	326	21.50	43.00	
	mmol/l	15.8	13.4	18.2	1.20	2.40	Glucose oxidase
	mg/dl	285	241	329	22.00	44.00	
alpha-HBDH	U/l	367	290	444	38.50	77.00	Oxobutyrate < 10 mmol/l 37°C
	U/l	277	219	335	29.00	58.00	Oxobutyrate < 10 mmol/l 30°C
	U/l	208	164	252	22.00	44.00	Oxobutyrate < 10 mmol/l 25°C
HDL - Cholesterol	mmol/l	2.47	2.10	2.84	0.19	0.37	Direct HDL PPD
	mg/dl	95.3	81.1	110	7.10	14.20	
	mmol/l	2.55	2.17	2.93	0.19	0.38	Direct HDL Immunoseparation
	mg/dl	98.4	83.8	113	7.30	14.60	
	mmol/l	2.42	2.06	2.78	0.18	0.36	Vitros Magnetic HDL
	mg/dl	93.4	79.5	107	6.95	13.90	
	mmol/l	2.80	2.38	3.22	0.21	0.42	Direct HDL PEGME
	mg/dl	108	91.9	124	8.05	16.10	
	mmol/l	2.35	1.99	2.71	0.18	0.36	Direct Clearance Method
	mg/dl	90.7	76.8	105	6.95	13.90	
	mmol/l	2.49	2.12	2.86	0.19	0.37	Vitros dHDL PTA/MgCl2 direct precipitation
	mg/dl	96.1	81.8	110	7.15	14.30	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

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METHOD

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
HDL - Cholesterol	mmol/l	2.43	2.07	2.79	0.18	0.36	HDL - Ultra
	mg/dl	93.8	79.9	108	6.95	13.90	
	mmol/l	2.93	2.49	3.37	0.22	0.44	Direct HDL Roche 4th Generation
	mg/dl	113	96.1	130	8.45	16.90	
Immunoglobulin A	g/l	1.84	1.38	2.30	0.230	0.460	Immunoturbidimetric
	mg/dl	184	138	230	23.0	46.0	
Immunoglobulin G	g/l	6.08	4.99	7.17	0.545	1.09	Immunoturbidimetric
	mg/dl	608	499	717	54.5	109	
Immunoglobulin M	g/l	1.00	0.800	1.20	0.100	0.200	Immunoturbidimetric
	mg/dl	100	80.0	120	10.0	20.0	
Iron	µmol/l	36.9	30.2	43.6	3.35	6.70	Colorimetric with ppt.
	µg/dl	206	169	243	18.50	37.00	
	µmol/l	37.0	30.4	43.6	3.30	6.60	Colorimetric without ppt.
	µg/dl	207	170	244	18.50	37.00	
	µmol/l	34.4	28.2	40.6	3.10	6.20	Ortho Vitros Microslide Systems
	µg/dl	192	158	226	17.00	34.00	
Lactate	mmol/l	5.34	4.38	6.30	0.48	0.96	Ion selective electrode
	mg/dl	48.1	39.5	56.7	4.30	8.60	
	mmol/l	5.32	4.36	6.28	0.48	0.96	Colorimetric Lactate Oxidase
	mg/dl	47.9	39.3	56.5	4.30	8.60	
	mmol/l	4.87	3.99	5.75	0.44	0.88	Ortho Vitros Microslide Systems
	mg/dl	43.9	35.9	51.9	4.00	8.00	
	mmol/l	5.01	4.11	5.91	0.45	0.90	Enzymatic Electrode
	mg/dl	45.1	37.0	53.2	4.05	8.10	

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Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
LD (LDH)	U/l	331	281	381	25.00	50.00	L->P 37°C
	U/l	239	203	275	18.00	36.00	L->P 30°C
	U/l	168	142	194	13.00	26.00	L->P 25°C
	U/l	737	626	848	55.50	111.00	P->L Scandinavian & Dutch 37°C
	U/l	532	452	612	40.00	80.00	P->L Scandinavian & Dutch 30°C
	U/l	374	317	431	28.50	57.00	P->L Scandinavian & Dutch 25°C
	U/l	696	592	800	52.00	104.00	P->L German methods 37°C
	U/l	503	427	579	38.00	76.00	P->L German methods 30°C
	U/l	353	300	406	26.50	53.00	P->L German methods 25°C
	U/l	710	604	816	53.00	106.00	P->L SFBC 37°C
	U/l	513	436	590	38.50	77.00	P->L SFBC 30°C
	U/l	360	306	414	27.00	54.00	P->L SFBC 25°C
	U/l	346	294	398	26.00	52.00	L->P IFCC 37°C
	U/l	250	212	288	19.00	38.00	L->P IFCC 30°C
	U/l	175	149	201	13.00	26.00	L->P IFCC 25°C
	U/l	361	307	415	27.00	54.00	Ortho Vitros IFCC Traceable 37°C
Lipase	U/l	76	61	91	7.50	15.00	Other Colorimetric 37°C
	U/l	833	668	998	82.50	165.00	Ortho Vitros Microslide Systems 37°C
	U/l	78	62	94	8.00	16.00	Roche Colorimetric 37°C
	U/l	98	79	117	9.50	19.00	Randox Colorimetric 37°C
Lithium	mmol/l	2.10	1.85	2.35	0.13	0.25	Ion selective electrode
	mg/dl	1.46	1.28	1.64	0.09	0.18	
	mmol/l	1.98	1.75	2.21	0.12	0.23	Spectrophotometric
	mg/dl	1.37	1.22	1.52	0.08	0.15	
Magnesium	mmol/l	1.79	1.58	2.00	0.11	0.21	Arsenazo III
	mg/dl	4.35	3.84	4.86	0.26	0.51	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

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METHOD

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Magnesium	mmol/l	1.86	1.64	2.08	0.11	0.22	Ortho Vitros Microslide Systems
	mg/dl	4.52	3.99	5.05	0.27	0.53	
	mmol/l	1.81	1.60	2.02	0.11	0.21	Calmagite
	mg/dl	4.40	3.89	4.91	0.26	0.51	
	mmol/l	1.83	1.61	2.05	0.11	0.22	Xylidyl Blue
	mg/dl	4.45	3.91	4.99	0.27	0.54	
	mmol/l	1.89	1.66	2.12	0.12	0.23	Methylthymol blue
	mg/dl	4.59	4.03	5.15	0.28	0.56	
	mmol/l	1.84	1.62	2.06	0.11	0.22	Chlorphosphonazo III
	mg/dl	4.47	3.94	5.00	0.27	0.53	
	mmol/l	1.83	1.61	2.05	0.11	0.22	Enzymatic
	mg/dl	4.45	3.91	4.99	0.27	0.54	
NEFA	mmol/l	0.56	0.45	0.68	0.06	0.11	Colorimetric
Osmolality	mOsm/kg	352	282	422	35.00	70.00	Calculated
	mOsm/kg	375	300	450	37.50	75.00	Freezing point depression
Paracetamol	mmol/l	0.60	0.48	0.71	0.06	0.12	Gravimetric
	mg/l	90.0	72.0	108	9.00	18.00	
Phosphate Inorganic	mmol/l	2.37	2.01	2.73	0.18	0.36	Ortho Vitros Microslide Systems
	mg/dl	7.35	6.23	8.47	0.56	1.12	
	mmol/l	2.34	1.99	2.69	0.18	0.35	Phosphomolybdate enzymatic
	mg/dl	7.25	6.17	8.33	0.54	1.08	
	mmol/l	2.35	2.00	2.70	0.18	0.35	Phosphomolybdate UV
	mg/dl	7.29	6.20	8.38	0.55	1.09	
Potassium	mmol/l	5.95	5.47	6.43	0.24	0.48	Ortho Vitros Microslide Systems

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METHOD

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Potassium	mmol/l	5.97	5.49	6.45	0.24	0.48	ISE method - direct
	mmol/l	6.06	5.58	6.54	0.24	0.48	ISE method - indirect
	mmol/l	6.22	5.72	6.72	0.25	0.50	Enzymatic
Protein Total	g/l	47.0	37.6	56.4	4.70	9.40	Ortho Vitros Microslide Systems
	g/dl	4.70	3.76	5.64	0.47	0.94	
	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	
	g/l	45.5	36.4	54.6	4.55	9.10	Biuret reaction kinetic
	g/dl	4.55	3.64	5.46	0.46	0.91	
PSA Total	ng/ml =	21.6	16.2	27.0	2.70	5.40	Beckman Access standardised to Hybritech
	ng/ml =	22.0	16.5	27.5	2.75	5.50	bioMerieux VIDAS TPSA
	ng/ml =	18.1	13.6	22.6	2.25	4.50	Siemens Centaur XP/XPT/Classic
	ng/ml =	16.3	12.2	20.4	2.05	4.10	Abbott Architect
	ng/ml =	20.5	15.4	25.6	2.55	5.10	Cobas E411
	ng/ml =	20.0	15.0	25.0	2.50	5.00	Roche Cobas 6000/8000
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	156	148	164	4.00	8.00	ISE method - direct
	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
	mmol/l	161	153	169	4.00	8.00	Enzymatic
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 =	1.05	0.84	1.26	0.10	0.21	Abbott Architect
	µU/ml =	1.32	1.05	1.59	0.14	0.27	bioMerieux VIDAS TSH

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

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METHOD

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Thyroid Stimulating Hormone	µU/ml =	1.47	1.18	1.76	0.15	0.29	Roche Cobas 4000/E411
	µU/ml =	1.48	1.18	1.78	0.15	0.30	Roche Cobas e601/602
	µU/ml =	1.17	0.94	1.40	0.12	0.23	Siemens Centaur XP/XPT/Classic TSH3-Ultra
	µU/ml =	1.22	0.98	1.46	0.12	0.24	Beckman DxI 600/800 Access (3rd IS)
	µU/ml =	1.48	1.18	1.78	0.15	0.30	Roche Cobas e402/e801
TIBC	µmol/l	39.6	31.3	47.9	4.15	8.30	Removal of excess free iron
	µg/dl	221	175	267	23.00	46.00	
	µmol/l	41.4	32.7	50.1	4.35	8.70	FE+UIBC(saturation with iron)
	µg/dl	231	183	279	24.00	48.00	
	µmol/l	43.9	34.7	53.1	4.60	9.20	Direct Colorimetric
	µg/dl	245	194	296	25.50	51.00	
	µmol/l	43.2	34.1	52.3	4.55	9.10	Calculated from Transferrin
	µg/dl	241	191	291	25.00	50.00	
	µmol/l	51.2	40.4	62.0	5.40	10.80	Randox Direct
	µg/dl	286	226	346	30.00	60.00	
Tobramycin	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	
Total T3	nmol/l	2.63	1.97	3.29	0.33	0.66	Abbott Architect
	ng/ml	1.71	1.28	2.14	0.22	0.43	
	ng/dl	171	128	214	21.50	43.00	Abbott Architect
	nmol/l	3.89	2.92	4.86	0.49	0.97	Roche Cobas 4000/E411
	ng/ml	2.53	1.90	3.16	0.32	0.63	
	ng/dl	253	190	316	31.50	63.00	Roche Cobas 4000/E411
Total T4	nmol/l	227	170	284	28.50	57.00	Abbott Architect
	µg/dl	17.7	13.3	22.1	2.20	4.40	
	ng/ml	177	133	221	22.00	44.00	Abbott Architect

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METHOD

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Total T4	nmol/l	208	156	260	26.00	52.00	Roche Cobas 4000/E411
	µg/dl	16.2	12.2	20.2	2.00	4.00	
	ng/ml	162	122	202	20.00	40.00	Roche Cobas 4000/E411
	nmol/l	198	149	247	24.50	49.00	Roche Cobas e601/602
	µg/dl	15.4	11.6	19.2	1.90	3.80	
	ng/ml	154	116	192	19.00	38.00	Roche Cobas e601/602
Transferrin	g/l	1.77	1.42	2.12	0.18	0.35	Immunoturbidimetric
	mg/dl	177	142	212	17.50	35.00	
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	Lipase/GPO-PAP 0.11mmol/l correction
	mg/dl	258	216	300	21.00	42.00	
	mmol/l	2.90	2.44	3.36	0.23	0.46	L/G Kinase EP. no correction
	mg/dl	257	216	298	20.50	41.00	
	mmol/l	2.92	2.45	3.39	0.24	0.47	L/G kinase EP. 0.11 mmol/l correction
	mg/dl	258	217	299	20.50	41.00	
	mmol/l	2.90	2.43	3.37	0.24	0.47	Lipase/Glycerol Dehydrogenase
	mg/dl	257	215	299	21.00	42.00	
	mmol/l	3.26	2.74	3.78	0.26	0.52	Ortho Vitros Microslide Systems
	mg/dl	289	242	336	23.50	47.00	
UIBC	µmol/l	6.90	5.66	8.14	0.62	1.24	TIBC - FE
	µg/dl	38.6	31.6	45.6	3.50	7.00	
Uric Acid (Urate)	mmol/l	0.52	0.45	0.59	0.03	0.07	Ortho Vitros Microslide Systems
	mg/dl	8.70	7.58	9.82	0.56	1.12	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
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	0.48	0.62	0.04	0.07	Spectrophotometric at 280-290
	mg/dl	9.26	8.05	10.5	0.61	1.21	
	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.09	7.90	10.3	0.60	1.19	
Urea	mmol/l	18.3	15.5	21.1	1.40	2.80	Ortho Vitros Microslide Systems
	mg/dl	110	93.2	127	8.40	16.80	
	mmol/l	18.9	16.1	21.7	1.40	2.80	Urease end point
	mg/dl	114	96.8	131	8.60	17.20	
	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	
	mmol/l	18.6	15.8	21.4	1.40	2.80	Urease - hypochlorite
	mg/dl	112	95.0	129	8.50	17.00	
Vitamin B12	pmol/l	220	176	264	22.00	44.00	Roche Cobas e402/e801
	pg/ml	298	238	358	30.00	60.00	
Zinc	µmol/l	34.3	27.4	41.2	3.45	6.90	Colorimetric with deproteinisation
	µg/dl	224	179	269	22.50	45.00	

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METHOD (Elec.)

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
alpha-1-globulin		7.6	5.8	9.4	0.91	1.82	% of total Protein (Beckman Capillary)
alpha-2-globulin		11.2	8.5	13.9	1.35	2.69	% of total Protein (Beckman Capillary)
Albumin (electrophoresis)		56.0	50.5	61.5	2.75	5.50	% of total Protein (Beckman Capillary)
beta-globulin		12.4	9.4	15.4	1.49	2.98	% of total Protein (Beckman Capillary)
gamma-globulin		12.8	9.7	15.9	1.54	3.07	% of total Protein (Beckman Capillary)

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	28.8	24.5	33.1	2.15	4.30	Bromocresol Green
	g/dl	2.88	2.45	3.31	0.22	0.43	
	g/l	28.6	24.3	32.9	2.15	4.30	Bromocresol Purple
	g/dl	2.86	2.43	3.29	0.22	0.43	
Alkaline Phosphatase	U/l	332	282	382	25.00	50.00	AMP optimised to IFCC 37°C
	U/l	332	282	382	25.00	50.00	AMP non-optimised 37°C
ALT (GPT)	U/l	142	113	171	14.50	29.00	Tris buffer without P5P 37°C
Amylase Pancreatic	U/l	234	199	269	17.50	35.00	Immunoinhibition EPS substrate 37°C
Amylase Total	U/l	291	248	334	21.50	43.00	Abbott Architect Non-IFCC Cal. 37°C
	U/l	333	283	383	25.00	50.00	Abbott Architect IFCC Cal. 37°C
AST (GOT)	U/l	133	106	160	13.50	27.00	Tris buffer without P5P 37°C
Bile Acids	µmol/l	43.8	35.0	52.6	4.40	8.80	Enzymatic Colorimetric
Bicarbonate	mmol/l	12.6	9.97	15.2	1.32	2.63	Enzymatic
Bilirubin Direct	µmol/l	30.3	23.9	36.7	3.20	6.40	Diazo with Sulphanilic Acid
	mg/dl	1.77	1.40	2.14	0.19	0.37	
	µmol/l	30.3	23.9	36.7	3.20	6.40	Diazo with Dichloroaniline (DCA)
	mg/dl	1.77	1.40	2.14	0.19	0.37	
Bilirubin Total	µmol/l	90.3	71.3	109	9.50	19.00	Diazo with Dichloroaniline (DCA)
	mg/dl	5.28	4.17	6.39	0.56	1.11	
	µmol/l	90.5	71.5	110	9.50	19.00	Diazo with Sulphanilic Acid
	mg/dl	5.29	4.18	6.40	0.56	1.11	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Bilirubin Total	µmol/l	88.8	70.2	107	9.30	18.60	Diazonium ion
	mg/dl	5.19	4.11	6.27	0.54	1.08	
Calcium	mmol/l	3.02	2.72	3.32	0.15	0.30	Arsenazo III
	mg/dl	12.1	10.9	13.3	0.60	1.20	
Cholesterol	mmol/l	7.16	6.23	8.09	0.47	0.93	Cholesterol Oxidase - Abell Kendall
	mg/dl	276	240	312	18.00	36.00	
Chloride	mmol/l	113	104	122	4.50	9.00	ISE indirect
Cholinesterase	U/l	6003	4802	7204	600.50	1201.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	520	426	614	47.00	94.00	CK-NAC (IFCC) 37°C
	U/l	540	442	638	49.00	98.00	Abbott CK-NAC (IFCC) 37°C
Copper	µmol/l	20.3	16.3	24.3	2.00	4.00	Colorimetric
	µg/dl	129	104	154	12.50	25.00	
Creatinine	µmol/l	409	327	491	41.00	82.00	Alkaline picrate no deproteinization
	mg/dl	4.62	3.70	5.54	0.46	0.92	
	µmol/l	407	326	488	40.50	81.00	Enzymatic UV method
	mg/dl	4.60	3.68	5.52	0.46	0.92	
gamma-GT	U/l	160	136	184	12.00	24.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	158	134	182	12.00	24.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	15.7	13.3	18.1	1.20	2.40	Hexokinase
	mg/dl	283	240	326	21.50	43.00	
	mmol/l	15.8	13.4	18.2	1.20	2.40	Glucose oxidase
	mg/dl	285	241	329	22.00	44.00	
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	2.42	2.06	2.78	0.18	0.36	Direct Clearance Method
	mg/dl	93.4	79.5	107	6.95	13.90	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
HDL - Cholesterol	mmol/l	2.42	2.06	2.78	0.18	0.36	HDL - Ultra
	mg/dl	93.4	79.5	107	6.95	13.90	
Iron	µmol/l	38.1	31.3	44.9	3.40	6.80	Colorimetric with ppt.
	µg/dl	213	175	251	19.00	38.00	
	µmol/l	38.0	31.2	44.8	3.40	6.80	Colorimetric without ppt.
	µg/dl	212	174	250	19.00	38.00	
Lactate	mmol/l	5.56	4.56	6.56	0.50	1.00	Colorimetric Lactate Oxidase
	mg/dl	50.1	41.1	59.1	4.50	9.00	
LD (LDH)	U/l	334	284	384	25.00	50.00	L->P 37°C
	U/l	332	282	382	25.00	50.00	L->P IFCC 37°C
Lipase	U/l	72	58	86	7.00	14.00	Other Colorimetric 37°C
Lithium	mmol/l	1.97	1.74	2.20	0.12	0.23	Spectrophotometric
	mg/dl	1.37	1.21	1.53	0.08	0.16	
Magnesium	mmol/l	1.80	1.59	2.01	0.11	0.21	Arsenazo III
	mg/dl	4.37	3.86	4.88	0.26	0.51	
	mmol/l	1.83	1.61	2.05	0.11	0.22	Enzymatic
	mg/dl	4.45	3.91	4.99	0.27	0.54	
Osmolality	mOsm/kg	360	288	432	36.00	72.00	Calculated
Phosphate Inorganic	mmol/l	2.34	1.99	2.69	0.18	0.35	Phosphomolybdate enzymatic
	mg/dl	7.25	6.17	8.33	0.54	1.08	
	mmol/l	2.34	1.99	2.69	0.18	0.35	Phosphomolybdate UV
	mg/dl	7.25	6.17	8.33	0.54	1.08	
Potassium	mmol/l	6.03	5.55	6.51	0.24	0.48	ISE method - indirect
Protein Total	g/l	46.8	37.5	56.1	4.65	9.30	Biuret reaction end point
	g/dl	4.68	3.75	5.61	0.47	0.93	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Protein Total	g/l	46.6	37.3	55.9	4.65	9.30	Biuret reaction kinetic
	g/dl	4.66	3.73	5.59	0.47	0.93	
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
TIBC	µmol/l	42.8	33.8	51.8	4.50	9.00	FE+UIBC(saturation with iron)
	µg/dl	239	189	289	25.00	50.00	
	µmol/l	42.9	33.9	51.9	4.50	9.00	Calculated from Transferrin
	µg/dl	240	190	290	25.00	50.00	
Triglycerides	mmol/l	2.92	2.45	3.39	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	258	217	299	20.50	41.00	
	mmol/l	2.92	2.46	3.38	0.23	0.46	L/G Kinase EP. no correction
	mg/dl	258	218	298	20.00	40.00	
	mmol/l	2.90	2.43	3.37	0.24	0.47	Lipase/Glycerol Dehydrogenase
	mg/dl	257	215	299	21.00	42.00	
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	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.21	8.01	10.4	0.60	1.20	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.17	7.98	10.4	0.60	1.19	
	mmol/l	0.54	0.47	0.62	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.14	7.95	10.3	0.60	1.19	
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	

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Beckman Coulter AU Series®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			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	
Alkaline Phosphatase	U/l	387	329	445	29.00	58.00	AMP optimised to IFCC 37°C
	U/l	522	444	600	39.00	78.00	Diethanolamine buffer DEA 37°C
ALT (GPT)	U/l	138	110	166	14.00	28.00	Beckman (Extinction Coefficient) 37°C
	U/l	146	117	175	14.50	29.00	Tris buffer without P5P 37°C
Amylase Total	U/l	256	218	294	19.00	38.00	Beckman CNPG3 (Extinction Coeff) 37°C
	U/l	275	234	316	20.50	41.00	Beckman Coulter - blocked pNPG7 37°C
	U/l	262	223	301	19.50	39.00	Other 2-chloro-pNPG3 37°C
AST (GOT)	U/l	137	110	164	13.50	27.00	Beckman (Extinction Coefficient) 37°C
	U/l	146	117	175	14.50	29.00	Tris buffer without P5P 37°C
Bile Acids	µmol/l	41.2	33.0	49.4	4.10	8.20	Enzymatic Colorimetric
Bicarbonate	mmol/l	14.7	11.7	17.7	1.50	3.00	Enzymatic
Bilirubin Direct	µmol/l	22.0	17.4	26.6	2.30	4.60	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.29	1.02	1.56	0.14	0.27	
Bilirubin Total	µmol/l	88.1	69.6	107	9.25	18.50	Dichlorophenyl Diazonium (DPD)
	mg/dl	5.15	4.07	6.23	0.54	1.08	
	µmol/l	88.1	69.6	107	9.25	18.50	DPD (Beckman AU)
	mg/dl	5.15	4.07	6.23	0.54	1.08	
Calcium	mmol/l	3.07	2.76	3.38	0.16	0.31	Arsenazo III
	mg/dl	12.3	11.1	13.5	0.60	1.20	

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Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

Analyte	unit	Target	Range low	Range 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	
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	
	mmol/l	7.46	6.49	8.43	0.49	0.97	Cholesterol Oxidase - IDMS
	mg/dl	288	251	325	18.50	37.00	
Chloride	mmol/l	111	102	120	4.50	9.00	ISE indirect
CK Total	U/l	535	439	631	48.00	96.00	Beckman CK-NAC (Extinction Coeff) 37°C
	U/l	552	453	651	49.50	99.00	CK-NAC (IFCC) 37°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	414	331	497	41.50	83.00	Enzymatic UV method
	mg/dl	4.68	3.74	5.62	0.47	0.94	
	µmol/l	387	310	464	38.50	77.00	IDMS traceable
	mg/dl	4.37	3.50	5.24	0.44	0.87	
	µmol/l	387	310	464	38.50	77.00	Jaffe rate blanked
	mg/dl	4.37	3.50	5.24	0.44	0.87	
	µmol/l	385	308	462	38.50	77.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.35	3.48	5.22	0.44	0.87	
gamma-GT	U/l	166	141	191	12.50	25.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	165	140	190	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	15.8	13.4	18.2	1.20	2.40	Glucose oxidase
	mg/dl	285	241	329	22.00	44.00	
	mmol/l	15.8	13.4	18.2	1.20	2.40	Hexokinase
	mg/dl	285	241	329	22.00	44.00	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

Analyte	unit	Target	Range low	Range high	1SD	2SD	methods
HDL - Cholesterol	mmol/l	2.56	2.18	2.94	0.19	0.38	Direct Clearance Method
	mg/dl	98.8	84.1	114	7.35	14.70	
	mmol/l	2.55	2.17	2.93	0.19	0.38	Direct HDL Immunoseparation
	mg/dl	98.4	83.8	113	7.30	14.60	
	mmol/l	2.58	2.19	2.97	0.20	0.39	Direct HDL PPD
	mg/dl	99.6	84.5	115	7.55	15.10	
	mmol/l	2.63	2.24	3.02	0.20	0.39	HDL - Ultra
	mg/dl	102	86.5	118	7.75	15.50	
Iron	µmol/l	39.2	32.1	46.3	3.55	7.10	Colorimetric with ppt.
	µg/dl	219	179	259	20.00	40.00	
	µmol/l	37.3	30.6	44.0	3.35	6.70	Colorimetric without ppt.
	µg/dl	209	171	247	19.00	38.00	
Lactate	mmol/l	5.10	4.18	6.02	0.46	0.92	Colorimetric Lactate Oxidase
	mg/dl	46.0	37.7	54.3	4.15	8.30	
LD (LDH)	U/l	299	254	344	22.50	45.00	L to P Beckman (Extinction Coeff) 37°C
	U/l	342	291	393	25.50	51.00	L->P IFCC 37°C
	U/l	314	267	361	23.50	47.00	L->P 37°C
	U/l	740	629	851	55.50	111.00	P->L Scandinavian & Dutch 37°C
Lipase	U/l	81	65	97	8.00	16.00	Other Colorimetric 37°C
Lithium	mmol/l	2.01	1.77	2.25	0.12	0.24	Spectrophotometric
	mg/dl	1.40	1.23	1.57	0.09	0.17	
Magnesium	mmol/l	1.83	1.61	2.05	0.11	0.22	Xylidyl Blue
	mg/dl	4.45	3.91	4.99	0.27	0.54	
Osmolality	mOsm/kg	351	281	421	35.00	70.00	Calculated
Phosphate Inorganic	mmol/l	2.37	2.01	2.73	0.18	0.36	Phosphomolybdate UV
	mg/dl	7.35	6.23	8.47	0.56	1.12	

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Beckman Coulter AU Series®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Potassium	mmol/l	6.00	5.52	6.48	0.24	0.48	ISE method - indirect
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 - indirect
TIBC	µmol/l	42.7	33.7	51.7	4.50	9.00	FE+UIBC(saturation with iron)
	µg/dl	239	188	290	25.50	51.00	
Triglycerides	mmol/l	2.89	2.43	3.35	0.23	0.46	Lipase/GK UV no correction
	mg/dl	256	215	297	20.50	41.00	
	mmol/l	2.89	2.43	3.35	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	256	215	297	20.50	41.00	
Uric Acid (Urate)	mmol/l	0.56	0.49	0.64	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.44	8.22	10.7	0.61	1.22	
	mmol/l	0.57	0.49	0.64	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.51	8.27	10.8	0.62	1.24	
Urea	mmol/l	19.5	16.6	22.4	1.45	2.90	Urease end point
	mg/dl	117	99.8	134	8.60	17.20	
	mmol/l	19.6	16.7	22.5	1.45	2.90	Urease kinetic
	mg/dl	118	100	136	9.00	18.00	
	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	

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COBAS INTEGRA®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	30.9	26.3	35.5	2.30	4.60	Bromocresol Green
	g/dl	3.09	2.63	3.55	0.23	0.46	
Alkaline Phosphatase	U/l	325	276	374	24.50	49.00	Roche Integra AMP buffer 37°C
	U/l	253	215	291	19.00	38.00	Roche Integra AMP buffer 30°C
	U/l	208	176	240	16.00	32.00	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	132	106	158	13.00	26.00	Tris buffer without P5P 37°C
	U/l	98	78	118	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
Amylase Total	U/l	264	225	303	19.50	39.00	Roche Integra 2-chloro-pNPG7 37°C
	U/l	264	225	303	19.50	39.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	133	107	159	13.00	26.00	Tris buffer without P5P 37°C
	U/l	90	72	108	9.00	18.00	Tris buffer without P5P 30°C
	U/l	63	51	75	6.00	12.00	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	14.1	11.1	17.1	1.50	3.00	Enzymatic
Bilirubin Direct	µmol/l	30.0	23.7	36.3	3.15	6.30	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.76	1.39	2.13	0.19	0.37	
	µmol/l	29.9	23.6	36.2	3.15	6.30	Diazo with Sulphanilic Acid
	mg/dl	1.75	1.38	2.12	0.19	0.37	
	µmol/l	29.8	23.6	36.0	3.10	6.20	Roche DPD JG standardised
	mg/dl	1.74	1.38	2.10	0.18	0.36	
	µmol/l	25.9	20.4	31.4	2.75	5.50	Roche DPD Doumas standardised
	mg/dl	1.52	1.19	1.85	0.17	0.33	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

RANDOX

COBAS INTEGRA®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
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	
	µmol/l	81.7	64.5	98.9	8.60	17.20	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.78	3.77	5.79	0.51	1.01	
	µmol/l	80.6	63.6	97.6	8.50	17.00	Diazonium ion
	mg/dl	4.72	3.72	5.72	0.50	1.00	
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	
	mmol/l	3.05	2.75	3.35	0.15	0.30	NM-BAPTA
	mg/dl	12.2	11.0	13.4	0.60	1.20	
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	
	mmol/l	7.07	6.15	7.99	0.46	0.92	Cholesterol Oxidase - IDMS
	mg/dl	273	237	309	18.00	36.00	
Chloride	mmol/l	113	104	122	4.50	9.00	ISE indirect
CK Total	U/l	510	418	602	46.00	92.00	CK-NAC (IFCC) 37°C
	U/l	319	262	376	28.50	57.00	CK-NAC (IFCC) 30°C
	U/l	217	178	256	19.50	39.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	380	304	456	38.00	76.00	Alkaline picrate no deproteinization
	mg/dl	4.29	3.44	5.14	0.43	0.85	
	µmol/l	406	325	487	40.50	81.00	Roche Creatinine Plus
	mg/dl	4.59	3.67	5.51	0.46	0.92	
	µmol/l	384	307	461	38.50	77.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.34	3.47	5.21	0.44	0.87	

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Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
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COBAS INTEGRA®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Creatinine	µmol/l	380	304	456	38.00	76.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.29	3.44	5.14	0.43	0.85	
gamma-GT	U/l	151	129	173	11.00	22.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	119	102	136	8.50	17.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	93	80	106	6.50	13.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	165	140	190	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	130	110	150	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	102	86	118	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	Hexokinase
	mg/dl	287	243	331	22.00	44.00	
HDL - Cholesterol	mmol/l	3.02	2.56	3.48	0.23	0.46	Direct HDL Roche 4th Generation
	mg/dl	117	98.8	135	9.10	18.20	
Iron	µmol/l	38.0	31.2	44.8	3.40	6.80	Colorimetric with ppt.
	µg/dl	212	174	250	19.00	38.00	
	µmol/l	37.1	30.4	43.8	3.35	6.70	Colorimetric without ppt.
	µg/dl	207	170	244	18.50	37.00	
Lactate	mmol/l	5.31	4.36	6.26	0.48	0.95	Colorimetric Lactate Oxidase
	mg/dl	47.8	39.3	56.3	4.25	8.50	
LD (LDH)	U/l	354	301	407	26.50	53.00	L->P IFCC 37°C
	U/l	256	217	295	19.50	39.00	L->P IFCC 30°C
	U/l	179	153	205	13.00	26.00	L->P IFCC 25°C
Lipase	U/l	74	60	88	7.00	14.00	Roche Colorimetric 37°C
Magnesium	mmol/l	1.83	1.61	2.05	0.11	0.22	Xylidyl Blue
	mg/dl	4.45	3.91	4.99	0.27	0.54	
	mmol/l	1.82	1.60	2.04	0.11	0.22	Chlorphosphonazo III
	mg/dl	4.42	3.89	4.95	0.27	0.53	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

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COBAS INTEGRA®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Phosphate Inorganic	mmol/l	2.42	2.06	2.78	0.18	0.36	Phosphomolybdate enzymatic
	mg/dl	7.50	6.39	8.61	0.56	1.11	
	mmol/l	2.41	2.05	2.77	0.18	0.36	Phosphomolybdate UV
	mg/dl	7.47	6.36	8.58	0.56	1.11	
Potassium	mmol/l	6.03	5.55	6.51	0.24	0.48	ISE method - indirect
Protein Total	g/l	43.2	34.6	51.8	4.30	8.60	Biuret reaction end point
	g/dl	4.32	3.46	5.18	0.43	0.86	
Sodium	mmol/l	156	149	163	3.50	7.00	ISE method - indirect
TIBC	µmol/l	39.9	31.6	48.2	4.15	8.30	FE+UIBC(saturation with iron)
	µg/dl	223	177	269	23.00	46.00	
Triglycerides	mmol/l	2.91	2.45	3.37	0.23	0.46	Lipase/GPO-PAP no correction
	mg/dl	258	217	299	20.50	41.00	
Uric Acid (Urate)	mmol/l	0.56	0.49	0.63	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.37	8.16	10.6	0.61	1.21	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.27	8.06	10.5	0.61	1.21	
Urea	mmol/l	18.9	16.1	21.7	1.40	2.80	Urease kinetic
	mg/dl	114	96.8	131	8.60	17.20	
	mmol/l	18.9	16.1	21.7	1.40	2.80	BUN
	mg/dl	53.0	45.1	60.9	3.95	7.90	

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Elitech/Vitalab Selectra Series

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	31.9	27.1	36.7	2.40	4.80	Bromocresol Green
	g/dl	3.19	2.71	3.67	0.24	0.48	
Alkaline Phosphatase	U/l	472	401	543	35.50	71.00	Diethanolamine buffer DEA 37°C
ALT (GPT)	U/l	141	112	170	14.50	29.00	Tris buffer without P5P 37°C
AST (GOT)	U/l	152	121	183	15.50	31.00	Tris buffer without P5P 37°C
Cholesterol	mmol/l	7.36	6.41	8.31	0.48	0.95	Cholesterol Oxidase - Abell Kendall
	mg/dl	284	247	321	18.50	37.00	
Creatinine	µmol/l	364	291	437	36.50	73.00	Alkaline picrate no deproteinization
	mg/dl	4.11	3.29	4.93	0.41	0.82	
Glucose	mmol/l	16.1	13.6	18.6	1.25	2.50	Glucose oxidase
	mg/dl	290	245	335	22.50	45.00	
Phosphate Inorganic	mmol/l	2.39	2.03	2.75	0.18	0.36	Phosphomolybdate UV
	mg/dl	7.41	6.29	8.53	0.56	1.12	
Triglycerides	mmol/l	2.80	2.35	3.25	0.23	0.45	Lipase/GPO-PAP no correction
	mg/dl	248	208	288	20.00	40.00	
Urea	mmol/l	18.1	15.4	20.8	1.35	2.70	Urease kinetic
	mg/dl	109	92.6	125	8.20	16.40	
	mmol/l	18.1	15.4	20.8	1.35	2.70	BUN
	mg/dl	50.8	43.2	58.4	3.80	7.60	

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

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	28.6	24.3	32.9	2.15	4.30	Bromocresol Green
	g/dl	2.86	2.43	3.29	0.22	0.43	
Alkaline Phosphatase	U/l	340	289	391	25.50	51.00	AMP optimised to IFCC 37°C
	U/l	265	225	305	20.00	40.00	AMP optimised to IFCC 30°C
	U/l	217	185	249	16.00	32.00	AMP optimised to IFCC 25°C
ALT (GPT)	U/l	154	123	185	15.50	31.00	Tris buffer without P5P 37°C
	U/l	114	91	137	11.50	23.00	Tris buffer without P5P 30°C
	U/l	87	69	105	9.00	18.00	Tris buffer without P5P 25°C
AST (GOT)	U/l	158	126	190	16.00	32.00	Tris buffer without P5P 37°C
	U/l	107	85	129	11.00	22.00	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	88.9	70.2	108	9.35	18.70	Diazo with Sulphanilic Acid
	mg/dl	5.20	4.11	6.29	0.55	1.09	
	µmol/l	86.9	68.6	105	9.15	18.30	Nitrobenzenediazonium salt
	mg/dl	5.08	4.01	6.15	0.54	1.07	
Calcium	mmol/l	3.20	2.88	3.52	0.16	0.32	Arsenazo III
	mg/dl	12.8	11.5	14.1	0.65	1.30	
Cholesterol	mmol/l	7.11	6.19	8.03	0.46	0.92	Cholesterol Oxidase - Abell Kendall
	mg/dl	274	239	309	17.50	35.00	
Chloride	mmol/l	114	105	123	4.50	9.00	ISE direct
CK Total	U/l	518	425	611	46.50	93.00	CK-NAC (IFCC) 37°C
	U/l	324	266	382	29.00	58.00	CK-NAC (IFCC) 30°C
	U/l	220	181	259	19.50	39.00	CK-NAC (IFCC) 25°C

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Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
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Konelab 20/30/60®/Thermo Scientific Indiko Plus ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			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	15.6	13.2	18.0	1.20	2.40	Hexokinase
	mg/dl	281	238	324	21.50	43.00	
	mmol/l	15.4	13.0	17.8	1.20	2.40	Glucose oxidase
	mg/dl	278	234	322	22.00	44.00	
Iron	µmol/l	38.9	31.9	45.9	3.50	7.00	Colorimetric without ppt.
	µg/dl	217	178	256	19.50	39.00	
Magnesium	mmol/l	1.86	1.64	2.08	0.11	0.22	Xylidyl Blue
	mg/dl	4.52	3.99	5.05	0.27	0.53	
Phosphate Inorganic	mmol/l	2.32	1.97	2.67	0.18	0.35	Phosphomolybdate UV
	mg/dl	7.19	6.11	8.27	0.54	1.08	
Potassium	mmol/l	5.89	5.42	6.36	0.24	0.47	ISE method - direct
Protein Total	g/l	46.2	36.9	55.5	4.65	9.30	Biuret reaction end point
	g/dl	4.62	3.69	5.55	0.47	0.93	
Sodium	mmol/l	153	145	161	4.00	8.00	ISE method - direct
Triglycerides	mmol/l	2.97	2.50	3.44	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	263	221	305	21.00	42.00	
Uric Acid (Urate)	mmol/l	0.57	0.50	0.65	0.04	0.08	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.63	8.37	10.9	0.63	1.26	
Urea	mmol/l	18.1	15.4	20.8	1.35	2.70	Urease kinetic
	mg/dl	109	92.6	125	8.20	16.40	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
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Konelab 20/30/60®/Thermo Scientific Indiko Plus ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Urea	mmol/l	18.1	15.4	20.8	1.35	2.70	BUN
	mg/dl	50.8	43.2	58.4	3.80	7.60	

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Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
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Ortho VITROS®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	29.1	24.8	33.4	2.15	4.30	Ortho Vitros Microslide Systems
	g/dl	2.91	2.48	3.34	0.22	0.43	
Alkaline Phosphatase	U/l	273	232	314	20.50	41.00	Ortho Vitros Microslide Systems 37°C
ALT (GPT)	U/l	138	111	165	13.50	27.00	Ortho Vitros Microslide Systems 37°C
	U/l	135	108	162	13.50	27.00	Ortho Vitros MicroSlide visible 37°C
Amylase Total	U/l	172	146	198	13.00	26.00	Ortho Vitros Microslide Systems 37°C
AST (GOT)	U/l	180	144	216	18.00	36.00	Ortho Vitros Microslide visible slide 37°C
Bilirubin Total	µmol/l	81.9	64.7	99.1	8.60	17.20	Vitros 250/500/700/950 Total Bilirubin
	mg/dl	4.79	3.78	5.80	0.51	1.01	
Bilirubin, Unconjugated Vitros BU	µmol/l	79.0	62.4	95.6	8.30	16.60	BuBc Vitros Slide
	mg/dl	4.62	3.65	5.59	0.49	0.97	
Calcium	mmol/l	3.00	2.70	3.30	0.15	0.30	Ortho Vitros Microslide Systems
	mg/dl	12.0	10.8	13.2	0.60	1.20	
Cholesterol	mmol/l	6.84	5.95	7.73	0.45	0.89	Ortho Vitros Microslide Systems
	mg/dl	264	230	298	17.00	34.00	
Chloride	mmol/l	114	105	123	4.50	9.00	Ortho Vitros Microslide Systems
CK Total	U/l	423	347	499	38.00	76.00	Ortho Vitros Microslide Systems 37°C
Creatinine	µmol/l	397	318	476	39.50	79.00	Vitros IDMS Traceable
	mg/dl	4.49	3.59	5.39	0.45	0.90	
gamma-GT	U/l	194	165	223	14.50	29.00	Ortho Vitros Microslide Systems 37°C
Glucose	mmol/l	14.9	12.7	17.1	1.10	2.20	Ortho Vitros Microslide Systems
	mg/dl	268	229	307	19.50	39.00	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
HDL - Cholesterol	mmol/l	2.49	2.12	2.86	0.19	0.37	Vitros dHDL PTA/MgCl2 direct precipitation
	mg/dl	96.1	81.8	110	7.15	14.30	
Iron	µmol/l	34.4	28.2	40.6	3.10	6.20	Ortho Vitros Microslide Systems
	µg/dl	192	158	226	17.00	34.00	
Lactate	mmol/l	4.87	3.99	5.75	0.44	0.88	Ortho Vitros Microslide Systems
	mg/dl	43.9	35.9	51.9	4.00	8.00	
LD (LDH)	U/l	361	307	415	27.00	54.00	Ortho Vitros IFCC Traceable 37°C
Lipase	U/l	833	668	998	82.50	165.00	Ortho Vitros Microslide Systems 37°C
Magnesium	mmol/l	1.86	1.64	2.08	0.11	0.22	Ortho Vitros Microslide Systems
	mg/dl	4.52	3.99	5.05	0.27	0.53	
Phosphate Inorganic	mmol/l	2.37	2.01	2.73	0.18	0.36	Ortho Vitros Microslide Systems
	mg/dl	7.35	6.23	8.47	0.56	1.12	
Potassium	mmol/l	5.95	5.47	6.43	0.24	0.48	Ortho Vitros Microslide Systems
Protein Total	g/l	47.0	37.6	56.4	4.70	9.40	Ortho Vitros Microslide Systems
	g/dl	4.70	3.76	5.64	0.47	0.94	
Sodium	mmol/l	155	147	163	4.00	8.00	Ortho Vitros Microslide Systems
Triglycerides	mmol/l	3.26	2.74	3.78	0.26	0.52	Ortho Vitros Microslide Systems
	mg/dl	289	242	336	23.50	47.00	
Uric Acid (Urate)	mmol/l	0.52	0.45	0.59	0.03	0.07	Ortho Vitros Microslide Systems
	mg/dl	8.70	7.58	9.82	0.56	1.12	
Urea	mmol/l	18.3	15.5	21.1	1.40	2.80	Ortho Vitros Microslide Systems
	mg/dl	110	93.2	127	8.40	16.80	
	mmol/l	18.3	15.6	21.0	1.35	2.70	BUN
	mg/dl	51.4	43.7	59.1	3.85	7.70	

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Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
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Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	31.0	26.3	35.7	2.35	4.70	Bromocresol Green
	g/dl	3.10	2.63	3.57	0.24	0.47	
	g/l	26.8	22.8	30.8	2.00	4.00	Turbidimetric Assays
	g/dl	2.68	2.28	3.08	0.20	0.40	
Alkaline Phosphatase	U/l	322	274	370	24.00	48.00	Roche Integra AMP buffer 37°C
	U/l	251	213	289	19.00	38.00	Roche Integra AMP buffer 30°C
	U/l	206	175	237	15.50	31.00	Roche Integra AMP buffer 25°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 Pancreatic	U/l	239	203	275	18.00	36.00	Roche EPS Liquid 37°C
Amylase Total	U/l	258	219	297	19.50	39.00	Roche Integra 2-chloro-pNPG7 37°C
	U/l	257	218	296	19.50	39.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	136	109	163	13.50	27.00	Tris buffer without P5P 37°C
	U/l	92	74	110	9.00	18.00	Tris buffer without P5P 30°C
	U/l	65	52	78	6.50	13.00	Tris buffer without P5P 25°C
Bile Acids	µmol/l	40.2	32.2	48.2	4.00	8.00	Enzymatic Colorimetric
Bicarbonate	mmol/l	14.2	11.2	17.2	1.50	3.00	Colorimetric
	mmol/l	13.6	10.7	16.5	1.45	2.90	Enzymatic
Bilirubin Direct	µmol/l	29.2	23.0	35.4	3.10	6.20	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.71	1.35	2.07	0.18	0.36	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Bilirubin Direct	µmol/l	30.7	24.3	37.1	3.20	6.40	Diazo with Sulphanilic Acid
	mg/dl	1.80	1.42	2.18	0.19	0.38	
	µmol/l	29.2	23.1	35.3	3.05	6.10	Roche DPD JG standardised
	mg/dl	1.71	1.35	2.07	0.18	0.36	
Bilirubin Total	µmol/l	77.9	61.6	94.2	8.15	16.30	Diazo with Sulphanilic Acid
	mg/dl	4.56	3.60	5.52	0.48	0.96	
	µmol/l	79.1	62.5	95.7	8.30	16.60	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.63	3.66	5.60	0.49	0.97	
	µmol/l	78.6	62.1	95.1	8.25	16.50	Diazonium ion
	mg/dl	4.60	3.63	5.57	0.49	0.97	
Calcium	mmol/l	3.07	2.77	3.37	0.15	0.30	Cresolphthalein complexone
	mg/dl	12.3	11.1	13.5	0.60	1.20	
	mmol/l	3.08	2.77	3.39	0.16	0.31	NM-BAPTA
	mg/dl	12.3	11.1	13.5	0.60	1.20	
Cholesterol	mmol/l	7.16	6.23	8.09	0.47	0.93	Cholesterol Oxidase - Abell Kendall
	mg/dl	276	240	312	18.00	36.00	
	mmol/l	7.21	6.28	8.14	0.47	0.93	Cholesterol Oxidase - IDMS
	mg/dl	278	242	314	18.00	36.00	
Chloride	mmol/l	110	101	119	4.50	9.00	ISE indirect
Cholinesterase	U/l	5066	4053	6079	506.50	1013.00	Colorimetric Butyrylthiocholine 37°C
CK Total	U/l	529	434	624	47.50	95.00	CK-NAC substrate start (DGKC) 37°C
	U/l	331	272	390	29.50	59.00	CK-NAC substrate start (DGKC) 30°C
	U/l	225	184	266	20.50	41.00	CK-NAC substrate start (DGKC) 25°C
	U/l	512	420	604	46.00	92.00	CK-NAC (IFCC) 37°C
	U/l	321	263	379	29.00	58.00	CK-NAC (IFCC) 30°C
	U/l	218	179	257	19.50	39.00	CK-NAC (IFCC) 25°C

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Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Creatinine	µmol/l	398	319	477	39.50	79.00	Alkaline picrate no deproteinization
	mg/dl	4.50	3.60	5.40	0.45	0.90	
	µmol/l	409	327	491	41.00	82.00	Roche Creatinine Plus
	mg/dl	4.62	3.70	5.54	0.46	0.92	
	µmol/l	394	315	473	39.50	79.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.45	3.56	5.34	0.45	0.89	
	µmol/l	393	314	472	39.50	79.00	Jaffe rate blanked compensated (-18 µmol/l)
	mg/dl	4.44	3.55	5.33	0.45	0.89	
D-3-Hydroxybutyrate	mmol/l	1.08	0.92	1.24	0.08	0.16	Tris buffer 100mmol pH 8.5
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	166	141	191	12.50	25.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	131	111	151	10.00	20.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	102	87	117	7.50	15.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
GLDH	U/l	28	22	34	3.00	6.00	Triethanolamine buffer 50 mmol 37°C
	U/l	22	17	27	2.50	5.00	Triethanolamine buffer 50 mmol 30°C
	U/l	17	14	20	1.50	3.00	Triethanolamine buffer 50 mmol 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	
HDL - Cholesterol	mmol/l	2.93	2.49	3.37	0.22	0.44	Direct HDL Roche 4th Generation
	mg/dl	113	96.1	130	8.45	16.90	
Iron	µmol/l	37.0	30.3	43.7	3.35	6.70	Colorimetric with ppt.
	µg/dl	207	169	245	19.00	38.00	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
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Email: applications@randox.com Website: www.randox.com

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Roche Cobas 6000 c501 e601

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Iron	µmol/l	36.9	30.2	43.6	3.35	6.70	Colorimetric without ppt.
	µg/dl	206	169	243	18.50	37.00	
Lactate	mmol/l	5.30	4.35	6.25	0.48	0.95	Colorimetric Lactate Oxidase
	mg/dl	47.8	39.2	56.4	4.30	8.60	
LD (LDH)	U/l	345	294	396	25.50	51.00	L->P 37°C
	U/l	249	212	286	18.50	37.00	L->P 30°C
	U/l	175	149	201	13.00	26.00	L->P 25°C
	U/l	349	297	401	26.00	52.00	L->P IFCC 37°C
	U/l	252	214	290	19.00	38.00	L->P IFCC 30°C
	U/l	177	151	203	13.00	26.00	L->P IFCC 25°C
Lipase	U/l	78	63	93	7.50	15.00	Roche Colorimetric 37°C
Lithium	mmol/l	1.99	1.75	2.23	0.12	0.24	Spectrophotometric
	mg/dl	1.38	1.22	1.54	0.08	0.16	
Magnesium	mmol/l	1.84	1.62	2.06	0.11	0.22	Xylidyl Blue
	mg/dl	4.47	3.94	5.00	0.27	0.53	
	mmol/l	1.85	1.63	2.07	0.11	0.22	Chlorphosphonazo III
	mg/dl	4.50	3.96	5.04	0.27	0.54	
Osmolality	mOsm/kg	345	276	414	34.50	69.00	Calculated
Phosphate Inorganic	mmol/l	2.32	1.97	2.67	0.18	0.35	Phosphomolybdate enzymatic
	mg/dl	7.19	6.11	8.27	0.54	1.08	
	mmol/l	2.34	1.99	2.69	0.18	0.35	Phosphomolybdate UV
	mg/dl	7.25	6.17	8.33	0.54	1.08	
Potassium	mmol/l	6.11	5.62	6.60	0.25	0.49	ISE method - indirect
Protein Total	g/l	44.9	36.0	53.8	4.45	8.90	Biuret reaction end point
	g/dl	4.49	3.60	5.38	0.45	0.89	

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Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Protein Total	g/l	45.1	36.1	54.1	4.50	9.00	Biuret reaction kinetic
	g/dl	4.51	3.61	5.41	0.45	0.90	
PSA Total	ng/ml =	19.5	14.7	24.3	2.40	4.80	Roche Cobas 6000/8000
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
Thyroid Stimulating Hormone	µU/ml =	1.55	1.24	1.86	0.16	0.31	Roche Cobas e601/602
TIBC	µmol/l	39.2	30.9	47.5	4.15	8.30	FE+UIBC(saturation with iron)
	µg/dl	219	173	265	23.00	46.00	
	µmol/l	44.9	35.5	54.3	4.70	9.40	Calculated from Transferrin
	µg/dl	251	198	304	26.50	53.00	
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	
	mmol/l	2.92	2.45	3.39	0.24	0.47	L/G Kinase EP. no correction
	mg/dl	258	217	299	20.50	41.00	
Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.03	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.00	7.85	10.2	0.58	1.15	
	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	8.99	7.81	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	8.99	7.81	10.2	0.59	1.18	
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	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	31.7	26.9	36.5	2.40	4.80	Bromocresol Green
	g/dl	3.17	2.69	3.65	0.24	0.48	
Alkaline Phosphatase	U/l	326	277	375	24.50	49.00	Roche Integra AMP buffer 37°C
	U/l	254	216	292	19.00	38.00	Roche Integra AMP buffer 30°C
	U/l	208	177	239	15.50	31.00	Roche Integra AMP buffer 25°C
ALT (GPT)	U/l	132	106	158	13.00	26.00	Tris buffer without P5P 37°C
	U/l	98	78	118	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
Amylase Total	U/l	265	225	305	20.00	40.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	135	108	162	13.50	27.00	Tris buffer without P5P 37°C
	U/l	91	73	109	9.00	18.00	Tris buffer without P5P 30°C
	U/l	64	51	77	6.50	13.00	Tris buffer without P5P 25°C
Bilirubin Direct	µmol/l	30.5	24.1	36.9	3.20	6.40	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.78	1.41	2.15	0.19	0.37	
	µmol/l	30.4	24.0	36.8	3.20	6.40	Roche DPD JG standardised
	mg/dl	1.78	1.40	2.16	0.19	0.38	
Bilirubin Total	µmol/l	79.9	63.1	96.7	8.40	16.80	Diazo with Sulphanilic Acid
	mg/dl	4.67	3.69	5.65	0.49	0.98	
	µmol/l	80.0	63.2	96.8	8.40	16.80	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.68	3.70	5.66	0.49	0.98	
	µmol/l	82.0	64.8	99.2	8.60	17.20	Diazonium ion
	mg/dl	4.80	3.79	5.81	0.51	1.01	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Calcium	mmol/l	3.08	2.78	3.38	0.15	0.30	NM-BAPTA
	mg/dl	12.3	11.1	13.5	0.60	1.20	
Cholesterol	mmol/l	7.05	6.13	7.97	0.46	0.92	Cholesterol Oxidase - Abell Kendall
	mg/dl	272	237	307	17.50	35.00	
	mmol/l	7.02	6.11	7.93	0.46	0.91	Cholesterol Oxidase - IDMS
	mg/dl	271	236	306	17.50	35.00	
CK Total	U/l	499	410	588	44.50	89.00	CK-NAC (IFCC) 37°C
	U/l	312	257	367	27.50	55.00	CK-NAC (IFCC) 30°C
	U/l	212	174	250	19.00	38.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	402	321	483	40.50	81.00	Roche Creatinine Plus
	mg/dl	4.54	3.63	5.45	0.46	0.91	
Glucose	mmol/l	16.0	13.6	18.4	1.20	2.40	Hexokinase
	mg/dl	288	245	331	21.50	43.00	
HDL - Cholesterol	mmol/l	2.97	2.53	3.41	0.22	0.44	Direct HDL Roche 4th Generation
	mg/dl	115	97.7	132	8.65	17.30	
LD (LDH)	U/l	347	295	399	26.00	52.00	L->P IFCC 37°C
	U/l	251	213	289	19.00	38.00	L->P IFCC 30°C
	U/l	176	150	202	13.00	26.00	L->P IFCC 25°C
Phosphate Inorganic	mmol/l	2.45	2.08	2.82	0.19	0.37	Phosphomolybdate UV
	mg/dl	7.60	6.45	8.75	0.58	1.15	
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	
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	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Uric Acid (Urate)	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.26	8.05	10.5	0.61	1.21	
	mmol/l	0.55	0.47	0.62	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.16	7.96	10.4	0.60	1.20	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.27	8.06	10.5	0.61	1.21	
Urea	mmol/l	18.8	16.0	21.6	1.40	2.80	Urease kinetic
	mg/dl	113	96.2	130	8.40	16.80	
	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	

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Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	30.9	26.2	35.6	2.35	4.70	Bromocresol Green
	g/dl	3.09	2.62	3.56	0.24	0.47	
Alkaline Phosphatase	U/l	319	271	367	24.00	48.00	Roche Integra AMP buffer 37°C
	U/l	249	211	287	19.00	38.00	Roche Integra AMP buffer 30°C
	U/l	204	173	235	15.50	31.00	Roche Integra AMP buffer 25°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	261	222	300	19.50	39.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	135	108	162	13.50	27.00	Tris buffer without P5P 37°C
	U/l	91	73	109	9.00	18.00	Tris buffer without P5P 30°C
	U/l	64	51	77	6.50	13.00	Tris buffer without P5P 25°C
Bicarbonate	mmol/l	13.2	10.4	16.0	1.40	2.80	Enzymatic
Bilirubin Direct	µmol/l	28.4	22.4	34.4	3.00	6.00	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.66	1.31	2.01	0.18	0.35	
	µmol/l	29.6	23.3	35.9	3.15	6.30	Diazo with Sulphanilic Acid
	mg/dl	1.73	1.36	2.10	0.19	0.37	
	µmol/l	28.9	22.9	34.9	3.00	6.00	Roche DPD JG standardised
	mg/dl	1.69	1.34	2.04	0.18	0.35	
Bilirubin Total	µmol/l	81.5	64.4	98.6	8.55	17.10	Diazo with Sulphanilic Acid
	mg/dl	4.77	3.77	5.77	0.50	1.00	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Bilirubin Total	µmol/l	79.5	62.8	96.2	8.35	16.70	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.65	3.67	5.63	0.49	0.98	
	µmol/l	78.7	62.2	95.2	8.25	16.50	Diazonium ion
	mg/dl	4.60	3.64	5.56	0.48	0.96	
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	3.09	2.78	3.40	0.16	0.31	NM-BAPTA
	mg/dl	12.4	11.1	13.7	0.65	1.30	
Cholesterol	mmol/l	7.23	6.29	8.17	0.47	0.94	Cholesterol Oxidase - Abell Kendall
	mg/dl	279	243	315	18.00	36.00	
	mmol/l	7.21	6.27	8.15	0.47	0.94	Cholesterol Oxidase - IDMS
	mg/dl	278	242	314	18.00	36.00	
Chloride	mmol/l	109	101	117	4.00	8.00	ISE indirect
CK Total	U/l	517	424	610	46.50	93.00	CK-NAC (IFCC) 37°C
	U/l	324	265	383	29.50	59.00	CK-NAC (IFCC) 30°C
	U/l	220	180	260	20.00	40.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	393	315	471	39.00	78.00	Alkaline picrate no deproteinization
	mg/dl	4.44	3.56	5.32	0.44	0.88	
	µmol/l	414	331	497	41.50	83.00	Roche Creatinine Plus
	mg/dl	4.68	3.74	5.62	0.47	0.94	
	µmol/l	396	317	475	39.50	79.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.47	3.58	5.36	0.45	0.89	
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

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
gamma-GT	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	15.7	13.4	18.0	1.15	2.30	Hexokinase
	mg/dl	283	241	325	21.00	42.00	
	mmol/l	15.8	13.4	18.2	1.20	2.40	Glucose oxidase
	mg/dl	285	241	329	22.00	44.00	
HDL - Cholesterol	mmol/l	2.90	2.46	3.34	0.22	0.44	Direct HDL Roche 4th Generation
	mg/dl	112	95.0	129	8.50	17.00	
Iron	µmol/l	36.3	29.8	42.8	3.25	6.50	Colorimetric with ppt.
	µg/dl	203	167	239	18.00	36.00	
	µmol/l	36.4	29.9	42.9	3.25	6.50	Colorimetric without ppt.
	µg/dl	203	167	239	18.00	36.00	
Lactate	mmol/l	5.34	4.38	6.30	0.48	0.96	Colorimetric Lactate Oxidase
	mg/dl	48.1	39.5	56.7	4.30	8.60	
LD (LDH)	U/l	350	298	402	26.00	52.00	L->P IFCC 37°C
	U/l	253	215	291	19.00	38.00	L->P IFCC 30°C
	U/l	177	151	203	13.00	26.00	L->P IFCC 25°C
Lipase	U/l	79	63	95	8.00	16.00	Roche Colorimetric 37°C
Magnesium	mmol/l	1.84	1.62	2.06	0.11	0.22	Xylidyl Blue
	mg/dl	4.47	3.94	5.00	0.27	0.53	
	mmol/l	1.85	1.63	2.07	0.11	0.22	Chlorphosphonazo III
	mg/dl	4.50	3.96	5.04	0.27	0.54	
Phosphate Inorganic	mmol/l	2.35	2.00	2.70	0.18	0.35	Phosphomolybdate UV
	mg/dl	7.29	6.20	8.38	0.55	1.09	

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Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Potassium	mmol/l	6.09	5.60	6.58	0.25	0.49	ISE method - indirect
Protein Total	g/l	45.2	36.1	54.3	4.55	9.10	Biuret reaction end point
	g/dl	4.52	3.61	5.43	0.46	0.91	
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
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	2.92	2.46	3.38	0.23	0.46	Lipase/Glycerol Dehydrogenase
	mg/dl	258	218	298	20.00	40.00	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	9.19	8.00	10.4	0.60	1.19	
	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.19	8.00	10.4	0.60	1.19	
	mmol/l	0.54	0.47	0.62	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.14	7.95	10.3	0.60	1.19	
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	

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Roche Cobas c701 / c702 / c711

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			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	
	g/l	27.7	23.5	31.9	2.10	4.20	Bromocresol Purple
	g/dl	2.77	2.35	3.19	0.21	0.42	
	g/l	28.5	24.2	32.8	2.15	4.30	Turbidimetric Assays
	g/dl	2.85	2.42	3.28	0.22	0.43	
Alkaline Phosphatase	U/l	311	264	358	23.50	47.00	Roche Integra AMP buffer 37°C
	U/l	242	206	278	18.00	36.00	Roche Integra AMP buffer 30°C
	U/l	199	169	229	15.00	30.00	Roche Integra AMP buffer 25°C
	U/l	299	254	344	22.50	45.00	Colorimetric 37°C
	U/l	233	198	268	17.50	35.00	Colorimetric 30°C
	U/l	191	162	220	14.50	29.00	Colorimetric 25°C
ALT (GPT)	U/l	135	108	162	13.50	27.00	Colorimetric 37°C
	U/l	100	80	120	10.00	20.00	Colorimetric 30°C
	U/l	76	61	91	7.50	15.00	Colorimetric 25°C
	U/l	136	108	164	14.00	28.00	Tris buffer without P5P 37°C
	U/l	101	80	122	10.50	21.00	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	232	197	267	17.50	35.00	Roche EPS Liquid 37°C
Amylase Total	U/l	258	220	296	19.00	38.00	Roche liquid stable pNPG7 37°C
AST (GOT)	U/l	136	109	163	13.50	27.00	Tris buffer without P5P 37°C
	U/l	92	74	110	9.00	18.00	Tris buffer without P5P 30°C
	U/l	65	52	78	6.50	13.00	Tris buffer without P5P 25°C

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Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Bile Acids	µmol/l	42.5	34.0	51.0	4.25	8.50	Enzymatic Colorimetric
Bicarbonate	mmol/l	13.4	10.7	16.1	1.35	2.70	Enzymatic
Bilirubin Direct	µmol/l	30.4	24.0	36.8	3.20	6.40	Dichlorophenyl Diazonium (DPD)
	mg/dl	1.78	1.40	2.16	0.19	0.38	
	µmol/l	29.1	23.0	35.2	3.05	6.10	Diazo with Sulphanilic Acid
	mg/dl	1.70	1.35	2.05	0.18	0.35	
	µmol/l	29.8	23.5	36.1	3.15	6.30	Roche DPD JG standardised
	mg/dl	1.74	1.37	2.11	0.19	0.37	
	µmol/l	26.8	21.2	32.4	2.80	5.60	Oxidation to Biliverdin/Vanadate
	mg/dl	1.57	1.24	1.90	0.17	0.33	
Bilirubin Total	µmol/l	79.8	63.0	96.6	8.40	16.80	Dichlorophenyl Diazonium (DPD)
	mg/dl	4.67	3.69	5.65	0.49	0.98	
	µmol/l	80.8	63.8	97.8	8.50	17.00	Diazonium ion
	mg/dl	4.73	3.73	5.73	0.50	1.00	
Calcium	mmol/l	3.03	2.73	3.33	0.15	0.30	Cresolphthalein complexone
	mg/dl	12.1	10.9	13.3	0.60	1.20	
	mmol/l	3.05	2.75	3.35	0.15	0.30	NM-BAPTA
	mg/dl	12.2	11.0	13.4	0.60	1.20	
Cholesterol	mmol/l	7.13	6.20	8.06	0.47	0.93	Cholesterol Oxidase - Abell Kendall
	mg/dl	275	239	311	18.00	36.00	
	mmol/l	7.11	6.18	8.04	0.47	0.93	Cholesterol Oxidase - IDMS
	mg/dl	274	239	309	17.50	35.00	
Chloride	mmol/l	107	98.5	116	4.25	8.50	ISE indirect

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			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
CK Total	U/l	514	421	607	46.50	93.00	CK-NAC (IFCC) 37°C
	U/l	322	264	380	29.00	58.00	CK-NAC (IFCC) 30°C
	U/l	218	179	257	19.50	39.00	CK-NAC (IFCC) 25°C
Creatinine	µmol/l	405	324	486	40.50	81.00	Roche Creatinine Plus
	mg/dl	4.58	3.66	5.50	0.46	0.92	
	µmol/l	399	319	479	40.00	80.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.51	3.60	5.42	0.46	0.91	
gamma-GT	U/l	144	123	165	10.50	21.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 37°C
	U/l	113	97	129	8.00	16.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 30°C
	U/l	89	76	102	6.50	13.00	Gamma glutamyl.-3-carboxy-4-nitroanilide 25°C
	U/l	161	137	185	12.00	24.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	127	108	146	9.50	19.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 30°C
	U/l	99	85	113	7.00	14.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 25°C
Glucose	mmol/l	15.6	13.2	18.0	1.20	2.40	Hexokinase
	mg/dl	281	238	324	21.50	43.00	
HDL - Cholesterol	mmol/l	2.90	2.46	3.34	0.22	0.44	Direct HDL Roche 4th Generation
	mg/dl	112	95.0	129	8.50	17.00	
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	35.3	28.9	41.7	3.20	6.40	Colorimetric without ppt.
	µg/dl	197	162	232	17.50	35.00	
Lactate	mmol/l	5.26	4.31	6.21	0.48	0.95	Colorimetric Lactate Oxidase
	mg/dl	47.4	38.8	56.0	4.30	8.60	
LD (LDH)	U/l	342	290	394	26.00	52.00	L->P IFCC 37°C
	U/l	247	209	285	19.00	38.00	L->P IFCC 30°C
	U/l	173	147	199	13.00	26.00	L->P IFCC 25°C

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Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Lithium	mmol/l	1.98	1.74	2.22	0.12	0.24	Spectrophotometric
	mg/dl	1.37	1.21	1.53	0.08	0.16	
Magnesium	mmol/l	1.84	1.62	2.06	0.11	0.22	Xylidyl Blue
	mg/dl	4.47	3.94	5.00	0.27	0.53	
Phosphate Inorganic	mmol/l	2.33	1.98	2.68	0.18	0.35	Phosphomolybdate UV
	mg/dl	7.22	6.14	8.30	0.54	1.08	
Potassium	mmol/l	5.91	5.44	6.38	0.24	0.47	ISE method - indirect
Protein Total	g/l	44.7	35.7	53.7	4.50	9.00	Biuret reaction end point
	g/dl	4.47	3.57	5.37	0.45	0.90	
Sodium	mmol/l	154	146	162	4.00	8.00	ISE method - indirect
TIBC	µmol/l	40.7	32.1	49.3	4.30	8.60	FE+UIBC(saturation with iron)
	µg/dl	228	179	277	24.50	49.00	
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	2.79	2.35	3.23	0.22	0.44	L/G Kinase EP. no correction
	mg/dl	247	208	286	19.50	39.00	
Uric Acid (Urate)	mmol/l	0.53	0.46	0.60	0.03	0.07	Uricase peroxidase with ascorbate oxidase
	mg/dl	8.92	7.76	10.1	0.58	1.16	
	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	
	mmol/l	0.53	0.46	0.60	0.03	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	8.85	7.71	9.99	0.57	1.14	
Urea	mmol/l	19.1	16.2	22.0	1.45	2.90	Urease kinetic
	mg/dl	115	97.4	133	8.80	17.60	

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			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Urea	mmol/l	19.1	16.2	22.0	1.45	2.90	BUN
	mg/dl	53.6	45.6	61.6	4.00	8.00	

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			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	30.5	25.9	35.1	2.30	4.60	Bromocresol Green
	g/dl	3.05	2.59	3.51	0.23	0.46	
Alkaline Phosphatase	U/l	530	450	610	40.00	80.00	Diethanolamine buffer DEA 37°C
	U/l	348	296	400	26.00	52.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	151	120	182	15.50	31.00	Tris buffer without P5P 37°C
Amylase Pancreatic	U/l	268	228	308	20.00	40.00	Randox Liquid Ethylidene pNPG7 37°C
Amylase Total	U/l	296	251	341	22.50	45.00	Randox Liquid Ethylidene pNPG7 37°C
AST (GOT)	U/l	151	121	181	15.00	30.00	Tris buffer without P5P 37°C
Bile Acids	µmol/l	42.7	34.2	51.2	4.25	8.50	5th Generation Colorimetric
Bicarbonate	mmol/l	15.5	12.3	18.7	1.60	3.20	Enzymatic
Bilirubin Direct	µmol/l	29.2	23.1	35.3	3.05	6.10	Diazo with Sulphanilic Acid
	mg/dl	1.71	1.35	2.07	0.18	0.36	
	µmol/l	28.8	22.8	34.8	3.00	6.00	Oxidation to Biliverdin/Vanadate
	mg/dl	1.68	1.33	2.03	0.18	0.35	
Bilirubin Total	µmol/l	87.2	68.9	106	9.15	18.30	Diazo with Sulphanilic Acid
	mg/dl	5.10	4.03	6.17	0.54	1.07	
	µmol/l	95.6	75.5	116	10.05	20.10	Oxidation to Biliverdin/Vanadate
	mg/dl	5.59	4.42	6.76	0.59	1.17	
Calcium	mmol/l	3.11	2.80	3.42	0.16	0.31	Arsenazo III
	mg/dl	12.5	11.2	13.8	0.65	1.30	
Cholesterol	mmol/l	7.46	6.49	8.43	0.49	0.97	Cholesterol Oxidase - Abell Kendall
	mg/dl	288	251	325	18.50	37.00	

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			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Chloride	mmol/l	109	100	118	4.50	9.00	ISE direct
CK Total	U/l	568	466	670	51.00	102.00	CK-NAC substrate start (DGKC) 37°C
	U/l	588	482	694	53.00	106.00	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	332	266	398	33.00	66.00	Alkaline picrate no deproteinization
	mg/dl	3.75	3.01	4.49	0.37	0.74	
	µmol/l	408	327	489	40.50	81.00	Enzymatic UV method
	mg/dl	4.61	3.70	5.52	0.46	0.91	
gamma-GT	U/l	173	147	199	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°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	15.7	13.4	18.0	1.15	2.30	Glucose oxidase
	mg/dl	283	241	325	21.00	42.00	
Iron	µmol/l	38.6	31.7	45.5	3.45	6.90	Colorimetric without ppt.
	µg/dl	216	177	255	19.50	39.00	
Lactate	mmol/l	5.30	4.35	6.25	0.48	0.95	Colorimetric Lactate Oxidase
	mg/dl	47.8	39.2	56.4	4.30	8.60	
LD (LDH)	U/l	695	590	800	52.50	105.00	P->L German methods 37°C
	U/l	337	286	388	25.50	51.00	L->P IFCC 37°C
Lipase	U/l	98	78	118	10.00	20.00	Randox Colorimetric 37°C
Magnesium	mmol/l	1.83	1.61	2.05	0.11	0.22	Xylidyl Blue
	mg/dl	4.45	3.91	4.99	0.27	0.54	
Phosphate Inorganic	mmol/l	2.40	2.04	2.76	0.18	0.36	Phosphomolybdate UV
	mg/dl	7.44	6.32	8.56	0.56	1.12	
Potassium	mmol/l	5.98	5.50	6.46	0.24	0.48	ISE method - direct

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
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Email: applications@randox.com Website: www.randox.com

RANDOX

RX SERIES®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Potassium	mmol/l	6.22	5.72	6.72	0.25	0.50	Enzymatic
Protein Total	g/l	47.7	38.2	57.2	4.75	9.50	Biuret reaction end point
	g/dl	4.77	3.82	5.72	0.48	0.95	
Sodium	mmol/l	157	149	165	4.00	8.00	ISE method - direct
	mmol/l	161	153	169	4.00	8.00	Enzymatic
TIBC	µmol/l	51.2	40.4	62.0	5.40	10.80	Direct Colorimetric
	µg/dl	286	226	346	30.00	60.00	
Triglycerides	mmol/l	2.94	2.47	3.41	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	260	219	301	20.50	41.00	
Uric Acid (Urate)	mmol/l	0.57	0.49	0.64	0.04	0.07	Uricase Peroxidase with ascorbate oxidase @ 546nm
	mg/dl	9.51	8.28	10.7	0.62	1.23	
	mmol/l	0.60	0.52	0.67	0.04	0.08	Uricase peroxidase no ascorbate oxidase
	mg/dl	10.0	8.72	11.3	0.65	1.29	
Urea	mmol/l	18.8	16.0	21.6	1.40	2.80	Urease kinetic
	mg/dl	113	96.2	130	8.40	16.80	
	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	

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Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

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SIEMENS ADVIA 1200/1650/1800/2400®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	29.2	24.8	33.6	2.20	4.40	Bromocresol Green
	g/dl	2.92	2.48	3.36	0.22	0.44	
	g/l	27.1	23.1	31.1	2.00	4.00	Bromocresol Purple
	g/dl	2.71	2.31	3.11	0.20	0.40	
Alkaline Phosphatase	U/l	310	263	357	23.50	47.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	160	128	192	16.00	32.00	Tris buffer without P5P 37°C
Amylase Total	U/l	269	228	310	20.50	41.00	Siemens - blocked pNPG7 37°C
AST (GOT)	U/l	151	121	181	15.00	30.00	Tris buffer without P5P 37°C
Bile Acids	µmol/l	44.0	35.2	52.8	4.40	8.80	Enzymatic Colorimetric
Bicarbonate	mmol/l	15.2	12.1	18.3	1.55	3.10	Enzymatic
Bilirubin Direct	µmol/l	29.2	23.1	35.3	3.05	6.10	Oxidation to Biliverdin/Vanadate
	mg/dl	1.71	1.35	2.07	0.18	0.36	
Bilirubin Total	µmol/l	95.6	75.5	116	10.05	20.10	Oxidation to Biliverdin/Vanadate
	mg/dl	5.59	4.42	6.76	0.59	1.17	
Calcium	mmol/l	3.12	2.81	3.43	0.16	0.31	Cresolphthalein complexone
	mg/dl	12.5	11.3	13.7	0.60	1.20	
	mmol/l	3.00	2.70	3.30	0.15	0.30	Arsenazo III
	mg/dl	12.0	10.8	13.2	0.60	1.20	
Cholesterol	mmol/l	7.24	6.30	8.18	0.47	0.94	Cholesterol Oxidase - Abell Kendall
	mg/dl	279	243	315	18.00	36.00	
Chloride	mmol/l	113	104	122	4.50	9.00	ISE indirect

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SIEMENS ADVIA 1200/1650/1800/2400®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
CK Total	U/l	552	453	651	49.50	99.00	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	403	322	484	40.50	81.00	Enzymatic UV method
	mg/dl	4.55	3.64	5.46	0.46	0.91	
	µmol/l	378	303	453	37.50	75.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.27	3.42	5.12	0.43	0.85	
gamma-GT	U/l	148	126	170	11.00	22.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (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	
	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	2.13	1.81	2.45	0.16	0.32	Direct Clearance Method
	mg/dl	82.2	69.9	94.5	6.15	12.30	
Iron	µmol/l	36.8	30.1	43.5	3.35	6.70	Colorimetric without ppt.
	µg/dl	206	168	244	19.00	38.00	
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	680	578	782	51.00	102.00	P->L German methods 37°C
	U/l	346	294	398	26.00	52.00	L->P IFCC 37°C
Lipase	U/l	85	68	102	8.50	17.00	Other Colorimetric 37°C
Magnesium	mmol/l	1.76	1.55	1.97	0.11	0.21	Xylidyl Blue
	mg/dl	4.28	3.77	4.79	0.26	0.51	
Phosphate Inorganic	mmol/l	2.42	2.06	2.78	0.18	0.36	Phosphomolybdate UV
	mg/dl	7.50	6.39	8.61	0.56	1.11	
Potassium	mmol/l	6.09	5.60	6.58	0.25	0.49	ISE method - indirect
Protein Total	g/l	45.0	36.0	54.0	4.50	9.00	Biuret reaction end point
	g/dl	4.50	3.60	5.40	0.45	0.90	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
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SIEMENS ADVIA 1200/1650/1800/2400®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Sodium	mmol/l	159	151	167	4.00	8.00	ISE method - indirect
TIBC	µmol/l	44.5	35.1	53.9	4.70	9.40	Direct Colorimetric
	µg/dl	249	196	302	26.50	53.00	
	µmol/l	41.3	32.6	50.0	4.35	8.70	Calculated from Transferrin
	µg/dl	231	182	280	24.50	49.00	
Triglycerides	mmol/l	2.96	2.49	3.43	0.24	0.47	Lipase/GPO-PAP no correction
	mg/dl	262	220	304	21.00	42.00	
Uric Acid (Urate)	mmol/l	0.55	0.48	0.62	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.27	8.06	10.5	0.61	1.21	
Urea	mmol/l	19.5	16.6	22.4	1.45	2.90	Urease kinetic
	mg/dl	117	99.8	134	8.60	17.20	
	mmol/l	19.5	16.6	22.4	1.45	2.90	BUN
	mg/dl	54.7	46.5	62.9	4.10	8.20	

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Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
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Siemens Atellica Solution

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	29.7	25.2	34.2	2.25	4.50	Bromocresol Green
	g/dl	2.97	2.52	3.42	0.23	0.45	
	g/l	27.1	23.0	31.2	2.05	4.10	Bromocresol Purple
	g/dl	2.71	2.30	3.12	0.21	0.41	
Alkaline Phosphatase	U/l	322	274	370	24.00	48.00	AMP optimised to IFCC 37°C
ALT (GPT)	U/l	163	130	196	16.50	33.00	Tris buffer without P5P 37°C
Amylase Pancreatic	U/l	253	215	291	19.00	38.00	Immunoinhibition EPS substrate 37°C
Amylase Total	U/l	291	247	335	22.00	44.00	Siemens - blocked pNPG7 37°C
AST (GOT)	U/l	159	127	191	16.00	32.00	Tris buffer without P5P 37°C
Bicarbonate	mmol/l	14.8	11.7	17.9	1.55	3.10	Enzymatic
Bilirubin Direct	µmol/l	31.5	24.8	38.2	3.35	6.70	Oxidation to Biliverdin/Vanadate
	mg/dl	1.84	1.45	2.23	0.20	0.39	
Bilirubin Total	µmol/l	97.4	76.9	118	10.25	20.50	Oxidation to Biliverdin/Vanadate
	mg/dl	5.70	4.50	6.90	0.60	1.20	
Calcium	mmol/l	3.22	2.90	3.54	0.16	0.32	Cresolphthalein complexone
	mg/dl	12.9	11.6	14.2	0.65	1.30	
	mmol/l	3.07	2.76	3.38	0.16	0.31	Arsenazo III
	mg/dl	12.3	11.1	13.5	0.60	1.20	
Cholesterol	mmol/l	7.37	6.41	8.33	0.48	0.96	Cholesterol Oxidase - Abell Kendall
	mg/dl	284	247	321	18.50	37.00	
	mmol/l	7.39	6.43	8.35	0.48	0.96	Cholesterol Oxidase - IDMS
	mg/dl	285	248	322	18.50	37.00	

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ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Chloride	mmol/l	115	106	124	4.50	9.00	ISE indirect
CK Total	U/l	515	422	608	46.50	93.00	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	385	308	462	38.50	77.00	Alkaline picrate no deproteinization
	mg/dl	4.35	3.48	5.22	0.44	0.87	
	µmol/l	387	309	465	39.00	78.00	Jaffe rate blanked comp. (-26 µmol/l)
	mg/dl	4.37	3.49	5.25	0.44	0.88	
gamma-GT	U/l	151	129	173	11.00	22.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
Glucose	mmol/l	15.5	13.1	17.9	1.20	2.40	Hexokinase
	mg/dl	279	236	322	21.50	43.00	
	mmol/l	15.4	13.1	17.7	1.15	2.30	Glucose oxidase
	mg/dl	278	236	320	21.00	42.00	
HDL - Cholesterol	mmol/l	2.38	2.02	2.74	0.18	0.36	Direct Clearance Method
	mg/dl	91.9	78.0	106	6.95	13.90	
Iron	µmol/l	37.1	30.4	43.8	3.35	6.70	Colorimetric without ppt.
	µg/dl	207	170	244	18.50	37.00	
LD (LDH)	U/l	340	289	391	25.50	51.00	L->P IFCC 37°C
Lipase	U/l	84	67	101	8.50	17.00	Other Colorimetric 37°C
Lithium	mmol/l	2.01	1.76	2.26	0.13	0.25	Spectrophotometric
	mg/dl	1.40	1.22	1.58	0.09	0.18	
Magnesium	mmol/l	1.82	1.60	2.04	0.11	0.22	Xylidyl Blue
	mg/dl	4.42	3.89	4.95	0.27	0.53	
Phosphate Inorganic	mmol/l	2.45	2.08	2.82	0.19	0.37	Phosphomolybdate UV
	mg/dl	7.60	6.45	8.75	0.58	1.15	
Potassium	mmol/l	5.95	5.47	6.43	0.24	0.48	ISE method - indirect

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com

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Siemens Atellica Solution

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
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	
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
TIBC	µmol/l	47.7	37.6	57.8	5.05	10.10	Direct Colorimetric
	µg/dl	267	210	324	28.50	57.00	
Triglycerides	mmol/l	3.07	2.58	3.56	0.25	0.49	Lipase/GPO-PAP no correction
	mg/dl	272	228	316	22.00	44.00	
Uric Acid (Urate)	mmol/l	0.56	0.48	0.63	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.32	8.11	10.5	0.61	1.21	
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	

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Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
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SIEMENS DIMENSION EXL®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Albumin	g/l	28.0	23.8	32.2	2.10	4.20	Bromocresol Purple
	g/dl	2.80	2.38	3.22	0.21	0.42	
Alkaline Phosphatase	U/l	308	262	354	23.00	46.00	Siemens Dimension AMP buffer 37°C
ALT (GPT)	U/l	155	124	186	15.50	31.00	Tris buffer with P5P 37°C
	U/l	156	125	187	15.50	31.00	Tris buffer with P5P NVKC 37°C
	U/l	153	122	184	15.50	31.00	Siemens Dade Standard Non IFCC Correlated 37°C
Amylase Total	U/l	315	268	362	23.50	47.00	Siemens 2-chloro-pNPG3 37°C
AST (GOT)	U/l	170	136	204	17.00	34.00	Tris buffer with P5P 37°C
	U/l	177	141	213	18.00	36.00	Tris buffer with P5P NVKC 37°C
	U/l	172	138	206	17.00	34.00	Siemens Dade Standard Non IFCC Correlated 37°C
Bilirubin Direct	µmol/l	17.2	13.6	20.8	1.80	3.60	Diazo/Sulphanilic Siemens Dimension
	mg/dl	1.01	0.796	1.22	0.11	0.21	
Bilirubin Total	µmol/l	85.8	67.8	104	9.00	18.00	Diazo with Sulphanilic Acid
	mg/dl	5.02	3.97	6.07	0.53	1.05	
Calcium	mmol/l	3.03	2.73	3.33	0.15	0.30	Cresolphthalein complexone
	mg/dl	12.1	10.9	13.3	0.60	1.20	
Cholesterol	mmol/l	6.79	5.91	7.67	0.44	0.88	Dimension-Siemens reagents
	mg/dl	262	228	296	17.00	34.00	
Chloride	mmol/l	114	105	123	4.50	9.00	ISE indirect
CK Total	U/l	503	412	594	45.50	91.00	CK-NAC (IFCC) 37°C
Creatinine	µmol/l	400	320	480	40.00	80.00	Alkaline picrate no deproteinization
	mg/dl	4.52	3.62	5.42	0.45	0.90	

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SIEMENS DIMENSION EXL®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Creatinine	µmol/l	413	330	496	41.50	83.00	Jaffe rate blanked
	mg/dl	4.67	3.73	5.61	0.47	0.94	
gamma-GT	U/l	173	147	199	13.00	26.00	Gamma Glutamyl-3-Carboxy-4-nitroanilide (IFCC) 37°C
	U/l	198	169	227	14.50	29.00	Siemens Dimension (non IFCC) 37°C
Glucose	mmol/l	15.9	13.5	18.3	1.20	2.40	Hexokinase
	mg/dl	287	243	331	22.00	44.00	
HDL - Cholesterol	mmol/l	2.78	2.37	3.19	0.21	0.41	Direct HDL PEGME
	mg/dl	107	91.5	123	7.75	15.50	
Iron	µmol/l	35.5	29.1	41.9	3.20	6.40	Colorimetric without ppt.
	µg/dl	198	163	233	17.50	35.00	
LD (LDH)	U/l	340	289	391	25.50	51.00	L->P IFCC 37°C
Magnesium	mmol/l	1.91	1.68	2.14	0.12	0.23	Methylthymol blue
	mg/dl	4.64	4.08	5.20	0.28	0.56	
Phosphate Inorganic	mmol/l	2.49	2.11	2.87	0.19	0.38	Phosphomolybdate enzymatic
	mg/dl	7.72	6.54	8.90	0.59	1.18	
	mmol/l	2.37	2.02	2.72	0.18	0.35	Phosphomolybdate UV
	mg/dl	7.35	6.26	8.44	0.55	1.09	
Potassium	mmol/l	6.07	5.58	6.56	0.25	0.49	ISE method - indirect
Protein Total	g/l	46.5	37.2	55.8	4.65	9.30	Biuret reaction end point
	g/dl	4.65	3.72	5.58	0.47	0.93	
Sodium	mmol/l	158	150	166	4.00	8.00	ISE method - indirect
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	
Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.04	0.07	Uricase peroxidase no ascorbate oxidase
	mg/dl	9.07	7.90	10.2	0.59	1.17	

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SIEMENS DIMENSION EXL®

ASSAYED HUMAN SERA LEVEL 3 (HUM ASY CONTROL 3)

Lot. No. 1270UE Cat. No. HE1532 / HS2611

Size 20 x 5ml / 5 x 5ml Expiry 2026-01-28

			Range				
Analyte	**unit**	**Target**	**low**	**high**	**1SD**	**2SD**	**methods**
Uric Acid (Urate)	mmol/l	0.54	0.47	0.61	0.04	0.07	Spectrophotometric at 280-290
	mg/dl	9.14	7.96	10.3	0.59	1.18	
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	

Randox Laboratories Ltd., 55 Diamond Road, Crumlin, County Antrim, BT29 4QY, United Kingdom
Tel: +44 (0) 28 9442 2413 Fax: +44 (0) 28 9445 2912
Email: applications@randox.com Website: www.randox.com