

CALIBRATION CERTIFICATE

Customer : Naalvar diagnostics	Date of Calibration : 10.01.2022
Neelakidangu Street,	Due Date : 09.01.2023
Karaikal-609602	Serial No : YX-79001078
PH-04368-224313	
Instrument : Fully Auto Chemistry Analyzer	
Model : BS240	
Manufacturer: SHENZHEN MINDRAY BIO-MEDICAL ELECTRONICS CO., LTD	

Golden Harvest Industries is an organization dealing in MINDRAY Auto Hematology Analyzers. It has a Technically Qualified Technical Team to ensure trouble free operation. The Described instrument has been checked and calibrated under the ambient conditions stated above.

Power Supply			
UPS Supply	Expected reading	Measured reading	Remarks
Earth to Phase	230 ± 10 VAC	226 VAC	With in Limits
Neutral to Phase	230 ± 10 VAC	226 VAC	
Earth to Neutral	0 - 5 VAC	0 VAC	

Power Supply Unit	Expected reading	Measured reading	Remarks
5V Output	5VDC ± 0.25V	5.02	Values are with in Limits
12V Output	12 VDC ± 1.2V	12.04	
12V Reagent Refrig.	12 VDC ± 1.2V	12.08	
24V Output	24 VDC ± 2.4V	24.10	

Software Communication	Status	Remarks
Operation Software Initialization Check	Normal	Nil
Communication between PC and Analyzer	Normal	Nil
Shutdown Check	Normal	Nil

Optical System Check	AD value	AD value range	Remarks
340 nm	50709	48000 to 54000	AD values are with in limit
405 nm	50770		
450 nm	50765		
510 nm	50750		
546 nm	50745		
578 nm	50755		
630 nm	50841		
670 nm	50785		

Temperature Check	Range	Measured Value	Remarks
Reaction Carousel Temperature	36.7 ° - 37.3 °C	37.0 °C	Values are within Range
Cuvette cleaning Fluid Temperature	39.0 ° - 49.0 °C	43.9 °C	
Cuvette wash solution Temperature	39.0 ° - 49.0 °C	44.1 °C	
Reagent Preheating Temperature	40.0 ° - 50.0 °C	45.0 °C	

Robotic Check	Status	Remarks
Sample / Reagent Probe Check	Normal	Nil
Sample / Reagent Syringe Check	Normal	Nil
Wash Unit Movement	Normal	Nil
Mixer Unit Check	Normal	Nil
Interior Washing Probe	Normal	Nil
Exterior Washing Probe	Normal	Nil
Exterior Washing Mixer	Normal	Nil
Reagent Unit	Normal	Nil
Reaction Unit	Normal	Nil
Reagent Preheater	Normal	Nil
Dust Filters	Cleaned	Nil

Fluidic Check	Status	Remarks
Wash Unit Detergent & Water Dispense	Normal	Nil
Wash Unit Sample & Water Aspiration	Normal	Nil
Interior Washing Probe	Normal	Nil
Exterior Washing Probe	Normal	Nil
Exterior Washing Mixer	Normal	Nil
Liquid Level Detection	Normal	Nil
Distilled Water filter	OK	Nil

The Calibration includes:

Adjustments: Checked the alignments for Sample/Reagent probe, Washing Unit, Mixer, Reaction Disk, Reagent/Sample Disk and their respective home positions.



Pneumatics: Checked the functions of Sample/Reagent Syringe and Distilled Water Supply Unit Pump and Solenoid Valves.

Temperature: Checked the temperature monitor for Pre-Heater, Reagent disk and Reaction Disk.

The above mentioned values are found to be with in the standard specified by SHENZHEN MINDRAY BIO-MEDICAL ELECTRONICS CO., LTD - CHINA.

REMARKS/DEVIATIONS IF ANY:

1. The recalibration interval should be determined based on the user's requirements.
2. The user should determine the stability of the instrument for its intended use.
3. The results stated in this certificate relate only to the instrument calibrated.

Authorized By
M. N. Ganesan
Zonal Manager – Technical Support



"NAALVAR DIAGNOSTICS" No: 22, Neelakedangu Street, Karaikal-609602

MONTH OF : MARCH 2022

FULLY BIO CHEMISTRY - MINDRAY-BS240 (RANDOX QC -NORMAL LOT NO : 1416UN)

TEST NAME /DATE	MEAN : 109 (100.9-117.1)	UREA MEAN: 42.2 (39.05-45.35)	CREATININE MEANE:1.62 (1.45-1.79)	T.BILIRUBIN MEAN:1.57 (1.41-1.73)	T.PROTEIN MEAN:5.92 (5.33-6.51)	ALBUMIN MEAN:4.23 (3.91-4.55)	URIC ACID MEAN:5.83 (5.45-6.21)	CHOLESTEROL MEANE:158 (147.5-168.5)	TRIGLYCERIDE MEAN:90.3 (83.15-97.45)	DONE BY
01-03-2022	109.8	42.8	1.6	1.57	5.93	4.22	5.89	151	89.7	KEERTHIGA
02-03-2022	105.6	44.9	1.59	1.45	6.12	4.03	5.98	159	85.4	KEERTHIGA
03-03-2022	116	40.1	1.52	1.7	5.5	4.29	5.59	150	87.3	KEERTHIGA
04-03-2022	112	42.8	1.49	1.74	5.95	4.46	5.99	160	92.8	DEEPA
05-03-2022	111.8	44.9	1.7	1.68	5.98	3.99	5.68	150.8	94.8	KEERTHIGA
06-03-2022	115	43.5	1.5	1.56	5.98	4.25	5.98	151.6	87.7	KEERTHIGA
07-03-2022	103.6	42.3	1.65	1.55	6.44	4.05	5.92	159.3	91.1	KEERTHIGA
08-03-2022	110.2	45.2	1.55	1.56	5.39	3.95	6.03	159.5	89.2	KEERTHIGA
09-03-2022	109	45.1	1.59	1.44	5.39	3.95	5.56	160.2	84.01	KEERTHIGA
10-03-2022	103.5	43.5	1.65	1.49	5.8	4.15	5.68	151.5	89.5	DEEPA
11-03-2022	110.5	41.5	1.55	1.66	6.23	4.36	5.96	156.8	85.96	KEERTHIGA
12-03-2022	116	45.2	1.74	1.59	6.32	3.99	5.69	157.5	95.5	KEERTHIGA
13-03-2022	101.2	42.5	1.49	1.69	5.36	3.96	5.54	165	89.56	KEERTHIGA
14-03-2022	116.9	45.32	1.77	1.71	6.49	4.51	6.12	167.9	97.35	KEERTHIGA
15-03-2022	109.5	42.2	1.62	1.55	5.93	4.23	5.89	156	90.5	KEERTHIGA
16-03-2022	104.5	40.2	1.48	1.56	5.96	4.08	5.96	153.8	85.9	DEEPA
17-03-2022	110.6	45.1	1.66	1.72	5.59	3.99	5.56	156	92.3	KEERTHIGA
18-03-2022	101.6	39.9	1.46	1.44	5.43	3.98	5.95	155.3	88.3	KEERTHIGA
19-03-2022	109	40.2	1.65	1.55	5.96	4.23	5.86	156	90.9	KEERTHIGA
20-03-2022	110.3	45.3	1.56	1.65	5.99	4.33	5.99	149	92.3	KEERTHIGA
21-03-2022	112.3	45.2	1.66	1.71	6.33	4.25	6.11	162	92.3	KEERTHIGA
22-03-2022	111	44.4	1.55	1.7	5.99	4.15	6.13	155.3	90.6	KEERTHIGA
23-03-2022	109	42.2	1.62	1.57	5.92	4.23	5.83	158	90.3	KEERTHIGA
24-03-2022	111	42.2	1.56	1.7	5.52	3.99	5.76	165.2	90.1	KEERTHIGA
25-03-2022	108.5	45.02	1.52	1.71	5.91	4.12	5.59	159.5	89.9	KEERTHIGA
26-03-2022	112.3	43.6	1.71	1.49	5.44	4.33	6.11	160.5	96.3	KEERTHIGA
27-03-2022	110.3	41.2	1.49	1.73	6.32	4.12	5.95	161	90.3	DEEPA
28-03-2022	111	45.2	1.56	1.52	6.35	4.11	5.9	160	92	KEERTHIGA
29-03-2022	110	42.3	1.49	1.66	6.31	4.22	6.19	155.5	93.3	KEERTHIGA
30-03-2022	112	43.6	1.65	1.71	5.99	4.16	5.99	159	95.3	KEERTHIGA
31-03-2022	109	43.3	1.55	1.69	6.33	4.11	5.88	159	93.6	KEERTHIGA

PREPARED BY : *Deepa*

APPROVED BY:



"NAALVAR DIAGNOSTICS" No: 22, Neelakedangu Street , Karaikal-609602

MONTH OF : MARCH 2022

FULLY BIO CHEMISTRY - MINDRAY-BS240 (RANDOX QC -HIGH LOT NO : 1195UE)

TEST NAME /DATE	GLUCOSE MEAN:279(2 58 -299)	UREA MEAN: 124 (115-133)	CREATININE MEANE:5.19 (4.67-5.71)	T.BILIRUBIN MEAN:5.79 (5.23-6.47)	T.PROTEIN MEAN4.58 (4.12-5.04)	ALBUMIN MEAN:2.9 (2.68-3.12)	URIC ACID MEAN:9.39 (8.77-10.01)	CHOLESTEROL MEANE: 280 (262-298)	TRIGLYCERIDE MEAN:263 (242-284)	DONE BY
01-03-2022	268	121	5.11	5.85	4.92	2.78	9.59	289	259	KEERTHIGA
02-03-2022	291	118	4.88	5.98	4.88	2.71	9.72	275	255	KEERTHIGA
03-03-2022	286	117	4.82	6.27	4.43	2.91	9.36	291	280	KEERTHIGA
04-03-2022	298	129	4.98	6.03	4.56	3.02	9.89	283	271	DEEPA
05-03-2022	279	127	5.8	6.37	4.87	3.12	8.86	272	260	KEERTHIGA
06-03-2022	275	128	5.56	6.24	4.88	2.8	9.76	277	278	KEERTHIGA
07-03-2022	265.3	124	5.22	5.66	5.02	3.06	9.92	292.3	259	KEERTHIGA
08-03-2022	284	123.6	5.55	6.32	4.36	2.74	10.01	285.4	266.8	KEERTHIGA
09-03-2022	278	125	5.22	5.99	4.99	2.91	9.22	289	265	KEERTHIGA
10-03-2022	265	122.5	4.89	5.6	4.18	2.99	9.25	276	258	DEEPA
11-03-2022	285	116	5.6	5.45	4.62	2.93	9.78	292	267	KEERTHIGA
12-03-2022	281	120	5.45	5.35	4.9	2.8	9.56	276	254	KEERTHIGA
13-03-2022	288.3	118.5	5.32	6.44	5.02	3.11	9.11	266	258	KEERTHIGA
14-03-2022	295	132	5.69	6.44	5.02	3.09	9.11	285	265	KEERTHIGA
15-03-2022	279	124.7	5.15	5.99	4.58	2.91	9.36	281	263	KEERTHIGA
16-03-2022	262	119	5.02	6.37	4.61	2.81	9.99	289	273	DEEPA
17-03-2022	277	115.2	4.77	6.31	5.01	3.11	8.99	287	281	KEERTHIGA
18-03-2022	271	115.9	5.66	6.44	4.44	3.02	8.99	265.3	255	KEERTHIGA
19-03-2022	288	125	5.23	5.69	4.68	2.9	9.36	284	269	KEERTHIGA
20-03-2022	266	116	5.23	5.32	4.19	2.69	8.97	269	265	KEERTHIGA
21-03-2022	273.6	122	5.52	5.32	5.02	2.99	9.36	292	255.3	KEERTHIGA
22-03-2022	285.5	121.5	5.33	6.11	4.55	2.93	9.66	291.5	280	KEERTHIGA
23-03-2022	277	120	5.71	6.22	5.02	3.11	9.11	293	271	KEERTHIGA
24-03-2022	296	122	4.99	6.31	4.63	2.99	9.85	285	255	KEERTHIGA
25-03-2022	288	121	5.55	5.55	4.95	3.1	9.12	277	258.6	KEERTHIGA
26-03-2022	295	119.5	5.22	6.42	4.95	2.91	9.55	288	254	KEERTHIGA
27-03-2022	296	115.3	5.22	6.22	4.92	2.99	9.66	269.3	254.6	DEEPA
28-03-2022	288	118	5.35	6.44	4.99	2.95	9.44	291	266	KEERTHIGA
29-03-2022	274	115	4.99	6.23	5.02	3.02	9.11	266	271	KEERTHIGA
30-03-2022	266	122	4.88	6.33	5.03	2.95	9.22	285	255.3	KEERTHIGA
31-03-2022	277	119	4.99	6.32	5.02	2.99	9.11	266	255	KEERTHIGA

PREPARED BY :

Deepa

APPROVED BY:

[Signature]



"NAALVAR DIAGNOSTICS" No: 22, Neelakedangu Street , Karaikal-609602

MONTH OF : APRIL 2022

FULLY BIO CHEMISTRY - MINDRAY-BS240 (RANDOX QC -NORMAL LOT NO : 1416UN)

TEST NAME /DATE	GLUCOSE MEAN : 109 (100.9-117.1)	UREA MEAN: 42.2 (39.05- 45.35)	CREATININE MEAN:1.62 (1.45-1.79)	T.BILIRUBIN MEAN:1.57 (1.41-1.73)	T.PROTEIN MEAN:5.92 (5.33-6.51)	ALBUMIN MEAN:4.23 (3.91-4.55)	URIC ACID MEAN:5.83 (5.45-6.21)	CHOLESTEROL MEAN:158 (147.5-168.5)	TRIGLYCERIDE MEAN:90.3 (83.15-97.45)	DONE BY
01-04-2022	105.2	42.3	1.66	1.44	5.55	3.99	5.69	149.9	85.2	KEERTHIGA
02-04-2022	111	39.9	1.46	1.55	5.66	3.95	5.65	148	89	KEERTHIGA
03-04-2022	106	39.9	1.59	1.7	5.66	3.92	5.96	155	84	KEERTHIGA
04-04-2022	117	45.3	1.71	1.73	6.5	4.55	6.21	168	97.3	KEERTHIGA
05-04-2022	101	41.1	1.55	1.49	6.33	4.26	5.49	165	85.3	KEERTHIGA
06-04-2022	105	45.2	1.55	1.66	6.33	4.11	6.03	165	96.3	KEERTHIGA
07-04-2022	116	41.2	1.74	1.71	6.26	4.22	6.11	155.3	85.6	KEERTHIGA
08-04-2022	109	39.9	1.45	1.53	5.34	4.13	5.8	149.1	90.3	DEEPA
09-04-2022	110	40.2	1.55	1.49	6.23	4.21	5.55	149.6	85.5	KEERTHIGA
10-04-2022	111	40.3	1.46	1.7	6.1	3.99	6.02	155	91.3	KEERTHIGA
11-04-2022	101	39.9	1.66	1.44	5.56	3.96	5.46	165	83.44	KEERTHIGA
12-04-2022	110.3	39.6	1.66	1.69	6.2	4.51	5.66	155	91.2	KEERTHIGA
13-04-2022	111	39.9	1.62	1.65	5.9	4.2	6.11	165	95.2	KEERTHIGA
14-04-2022	111	40.2	1.46	1.62	5.91	4.33	5.49	149	85	DEEPA
15-04-2022	115	41	1.55	1.49	5.66	3.99	5.95	159	91.2	DEEPA
16-04-2022	116	42.2	1.66	1.55	5.35	4.2	5.66	165	94.3	KEERTHIGA
17-04-2022	110	39.9	1.46	1.44	5.66	3.96	5.46	152	84.3	KEERTHIGA
18-04-2022	101	43.2	1.55	1.44	5.55	3.99	5.71	149	85.5	KEERTHIGA
19-04-2022	111	41.2	1.66	1.55	5.66	3.96	5.46	152.2	94.3	KEERTHIGA
20-04-2022	116	45.1	1.49	1.45	5.66	4.23	5.49	155.3	86.5	KEERTHIGA
21-04-2022	112	45.1	1.55	1.71	5.99	3.99	5.6	165	86.3	KEERTHIGA
22-04-2022	111.3	45.2	1.66	1.55	5.66	3.93	5.46	156	89.3	KEERTHIGA
23-04-2022	114	44.3	1.59	1.45	5.99	3.98	6.1	147.9	97.3	KEERTHIGA
24-04-2022	116	41.1	1.49	1.56	5.65	3.99	5.96	162.2	91.1	KEERTHIGA
25-04-2022	103.2	41.9	1.55	1.55	6.11	3.96	5.66	149.3	96.3	KEERTHIGA
26-04-2022	106	42.2	1.45	1.64	6.02	3.99	5.64	155	92.2	KEERTHIGA
27-04-2022	111	40.3	1.68	1.71	5.44	4.11	5.55	162	90.3	DEEPA
28-04-2022	112.3	41.2	1.76	1.69	5.5	4.16	6.21	165	86.3	KEERTHIGA
29-04-2022	117	39.9	1.77	1.66	5.66	4.4	6.03	149	83.9	KEERTHIGA
30-04-2022	116	40.2	1.69	1.65	5.55	4.33	5.9	156	86.3	KEERTHIGA

PREPARED BY: *Deepa*

APPROVED BY:

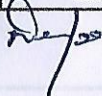


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MONTH OF : APRIL 2022

FULLY BIO CHEMISTRY - MINDRAY-BS240 (RANDOX QC -HIGH LOT NO : 1195UE)

TEST NAME /DATE	GLUCOSE MEAN:279(25 8 -299)	UREA MEAN: 124 (115-133)	CREATININE MEANE:5.19 (4.67-5.71)	T.BILIRUBIN MEAN:5.79 (5.23-6.47)	T.PROTEIN MEAN4.58 (4.12-5.04)	ALBUMIN MEAN:2.9 (2.68-3.12)	URIC ACID MEAN:9.39 (8.77-10.01)	CHOLESTEROL MEANE: 280 (262-298)	TRIGLYCERIDE MEAN:263 (242-284)	DONE BY
01-04-2022	288	119	5.22	5.77	4.45	2.94	8.86	269	248	KEERTHIGA
02-04-2022	296	118	5.62	5.29	4.19	2.69	8.78	288.3	266	KEERTHIGA
03-04-2022	259	116	5.02	5.26	4.13	2.69	8.9	266	249	KEERTHIGA
04-04-2022	288	133	5.71	5.26	5.04	3.11	9.11	284	281	KEERTHIGA
05-04-2022	293	125	5.22	5.99	5.02	3.06	8.88	266	255	KEERTHIGA
06-04-2022	279	116	4.69	6.11	5.01	3.11	9.66	269	259	KEERTHIGA
07-04-2022	296	131	5.22	6.42	4.99	3.02	9.66	293	281	KEERTHIGA
08-04-2022	277	120	4.68	5.23	5.01	2.79	8.74	280	267	DEEPA
09-04-2022	288	119	5.22	6.22	4.66	3.11	9.66	290	246	KEERTHIGA
10-04-2022	266	116	5.03	6.05	4.35	3.06	9.52	295	256	KEERTHIGA
11-04-2022	266	132	5.44	6.33	5.01	3.11	9.11	269	274	KEERTHIGA
12-04-2022	288	131.2	5.01	5.32	4.33	2.77	8.9	265	249.3	KEERTHIGA
13-04-2022	295	123	4.69	6.12	4.99	3.02	9.03	269	255	KEERTHIGA
14-04-2022	288	133	5.21	5.35	4.16	3.11	9.11	285	245	DEEPA
15-04-2022	279	122	5.11	5.66	4.33	2.98	9.3	269	266	DEEPA
16-04-2022	266	116	5.66	5.77	5.02	2.69	8.99	265	255.3	KEERTHIGA
17-04-2022	259	119	4.69	5.33	4.16	2.68	8.79	269	246	KEERTHIGA
18-04-2022	259	122	4.99	5.99	4.13	3.11	9.03	291	250.5	KEERTHIGA
19-04-2022	266.3	116	4.91	5.33	5.01	2.99	9.66	265	280	KEERTHIGA
20-04-2022	292	132	5.55	6.11	4.55	2.69	9.44	269.3	244	KEERTHIGA
21-04-2022	299	116	5.22	5.55	5.02	2.99	8.79	295	281	KEERTHIGA
22-04-2022	279.3	116	5.55	5.77	4.16	2.7	8.79	263.3	246	KEERTHIGA
23-04-2022	296	119	4.99	5.66	4.19	2.69	8.88	264	256	KEERTHIGA
24-04-2022	273	116	4.95	6.13	4.15	3.01	8.99	266	259.2	KEERTHIGA
25-04-2022	275	123	5.22	6.03	4.16	2.78	9.13	289	246	KEERTHIGA
26-04-2022	298	117	5.55	5.32	5.02	2.99	9.03	298	259	KEERTHIGA
27-04-2022	269	116	5.46	5.66	4.52	2.88	9.66	263	265	DEEPA
28-04-2022	266	119	5.11	6.4	4.44	2.98	10.1	278	255	KEERTHIGA
29-04-2022	277	131	5.42	6.11	5.01	3.11	9.33	269	268	KEERTHIGA
30-04-2022	274	124	5.35	6.02	4.35	2.77	9.55	277	255	KEERTHIGA

PREPARED BY : 

APPROVED BY: 