RANDOX

CALIBRATION CERTIFICATE – Rx MONACO

Date: 05 Oct 2020

Sri Vinayaga Microlab, Palani.

Dear Sir / Madam,

SUB: Calibration Certificate for the Instrument Rx Monaco

The Rx Monaco, fully automated biochemistry analyzer bearing serial no. S140T240CS0138MA was installed on 05 Mar 2015 and calibrated today and valid for one year from the date of its calibration.

Next calibration is due on 05 Oct 2021.

The following were the calibration details for the instrument:

Test Parameter	Target Value	Obtained Value
Input Voltage	230 -240 V AC	230V
Incubator Temperature	37° C ± 0.1 max	37.0°C
Reagent Tray Temperature	5- 15 ° C	8.2°C
Detector Performance Check @ all Wavelengths	8000-18000	Within Range
12V Lamp Supply	12 ± 0.3 volts	12.0V
5V Supply	5 ± 0.3 volts	5.02V
24V Supply	24 ± 0.3 volts	24.1V
Water Blank	(±800) of the Water Blank value	Within Range

The results obtained are as per specifications & tolerance ranges.

The above calibration was done with a Flike-Mastech Digital Multimeter & Fluke Digital Thermometer.

For RANDOX LABORATORIES INDIA (P) LTD.,

Edward Solomon.J

Customer Support Engineer.

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VAIDYANATHESHWARA INSTRUMENTS
COMMITTED TO THE CUSTOMER SINCE - 1996

CALIBRATION CERTIFICATE

NABL CERTIFICATE CC-2473
No. 301/A, 9th Main Road, 3rd Cross, Rajiv Gandhi Nagar, J.B. Kaval, Nandhini Layout Post, Bangalore - 560 096.
Telefax : 080-23377266, Mob : 9986586789 / 9448080177 / 9964308118 | Email : viplgroup64@gmail.com Web : www.viplgroup.com

NABL Accredited Calibration Lab as per ISO/IEC 17025 : 2017

1 Name and Address of Customer

M/s: Randox Laboratories (India) Pvt. Ltd.,
Plot No. 191-195 & 246-250, Bommasandra,
Jigani Link Road, Indl. Area, Rajapura Hobli, Jigani,
Anekal Taluk, Bangalore - 562 105.

2 Customer Reference

2.1 ULR No	: CC247320200001258F
2.2 SRF No.	: 1022
2.3 Certificate No.	: VI/20-21/1022-01
2.4 Format No.	: VI-FRM-ET-008
2.5 Receipt Date	: 20-06-2020
2.6 DC No.& Date	: GBLM2021/400003 & 18-06-2020
2.7 Issue Date	: 22-06-2020

3 Details Of Device Under Calibration(DUC).

3.1 Nomenclature	: **Digital Multimeter**
3.2 Make / Model	: Mastech / MAS830L
3.3 Sl.No.	: 404994
3.4 DUC Condition	: Satisfactory
3.5 Calibration Procedure No.	: SOP-37-08
3.6 No.of Pages	: 3
3.7 Calibration Date	: 22-06-2020
3.8 Calibration Due	: 21-06-2021
3.9 Calibration done at	: VI Electrical Lab
3.10 Discipline	: Electro-Technical

4 Environmental Condition

Temperature 26.3 °C Humidity 51 %RH

5 Standards Used for calibration

Sl. No.	Nomenclature	Make & Model	Sl. No	Basic Accuracy	Certificate No.	Validity
1	Calibrator	Fluke & 5522A	3289904	±11 ppm	CR/PCAL/50761/1	23-09-2020

6 Note:

6.1. The Calibration Certificate relates only to the above DUC.
6.2. Publication or reproduction of this Certificate in any form other than by complete set of the whole report & in the language, written, is not permitted without the written consent of VI Lab.
6.3. Corrections/erasing, invalidate the Calibration Certificate.
6.4. Calibration of the DUC are traceable to National standards/International Standards
6.5. Any error in this Certificate should be brought to our knowledge within 30 days from the date of this Cert.
6.6. Results Reported are valid at the time of and under the stated conditions of measurements.
6.7. The usage of NABL Symbol is as per NABL guidelines given in NABL-133

Calibrated By **Checked By** **Authorised By**

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Results:

Sl. No.	Parameter	Range	STD Input	DUC Reading	Error Claimed (±)	Error Observed	Measurement Uncertainty (±)	K Factor
1	DC Voltage	200mV	20 mV	20.2 mV	0.4 mV	0.2 mV	0.0008 mV	2.0
2			100	100.4	0.8	0.4	0.0039	2.0
3			180	180.5	1.2	0.5	0.0070	2.0
4		2 V	0.2 V	0.201 V	0.004 V	0.001 V	0.000003 V	2.0
5			1.0	1.005	0.008	0.005	0.000016	2.0
6			1.8	1.806	0.012	0.006	0.000029	2.0
7		20 V	2V	2.01 V	0.04 V	0.01 V	0.000032 V	2.0
8			10	10.03	0.08	0.03	0.000160	2.0
9			18	18.05	0.12	0.05	0.000288	2.0
10		200 V	20 V	20.1 V	0.4 V	0.1 V	0.00046 V	2.0
11			100	100.4	0.8	0.4	0.00230	2.0
12			180	180.6	1.2	0.6	0.00414	2.0
13		600 V	60 V	61 V	5 V	1 V	0.00138 V	2.0
14			300	302	7	2	0.00690	2.0
15			540	542	9	2	0.01242	2.0
16	Resistance	200 Ω	20 Ω	19.9 Ω	0.7 Ω	-0.1 Ω	0.0008 Ω	2.0
17			100	99.7	1.3	-0.3	0.0040	2.0
18			180	180.7	1.9	0.7	0.0072	2.0
19		2 kΩ	0.2 kΩ	0.198 kΩ	0.004 kΩ	-0.002 kΩ	0.00001 kΩ	2.0
20			1.0	1.004	0.010	0.004	0.00004	2.0
21			1.8	1.807	0.016	0.007	0.00006	2.0
22		20 kΩ	2 kΩ	2.01 kΩ	0.04 kΩ	0.01 kΩ	0.00007 kΩ	2.0
23			10	10.02	0.10	0.02	0.00035	2.0
24			18	18.05	0.16	0.05	0.00063	2.0
25		200 kΩ	20 kΩ	20.2 kΩ	0.4 kΩ	0.2 kΩ	0.00070 kΩ	2.0
26			100	99.7	1.0	-0.3	0.00350	2.0
27			180	179.4	1.6	-0.6	0.00630	2.0
28		2 MΩ	0.2 MΩ	0.202 MΩ	0.007 MΩ	0.002 MΩ	0.00001 MΩ	2.0
29			1	1.004	0.015	0.004	0.00004	2.0
30			1.8	1.806	0.023	0.006	0.00007	2.0

Calibrated By
Asha S

Checked By
Guruprasad S C

Authorised By
Gangadhar C K

C

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Results Continued....

Sl. No.	Parameter	Range	STD Input	DUC Reading	Error Claimed (±)	Error Observed	Measurement Uncertainty (±)	K Factor
31	DC Current	200 µA	20 µA	20.2 µA	0.5 µA	0.2 µA	0.0054 µA	2.0
32			100	100.4	1.3	0.4	0.0270	2.0
33			180	180.5	2.1	0.5	0.0486	2.0
34		2 mA	0.2 mA	0.201 mA	0.005 mA	0.001 mA	0.00003 mA	2.0
35			1	1.003	0.013	0.003	0.00016	2.0
36			1.8	1.805	0.021	0.005	0.00029	2.0
37		20 mA	2 mA	2.02 mA	0.07 mA	0.02 mA	0.0002 mA	2.0
38			10	10.05	0.15	0.05	0.0011	2.0
39			18	18.07	0.23	0.07	0.0020	2.0
40		200 mA	20 mA	20.1 mA	0.8 mA	0.1 mA	0.0054 mA	2.0
41			100	100.3	2.0	0.3	0.0270	2.0
42			180	180.4	3.2	0.4	0.0486	2.0
43		10A	1 A	1.03 A	0.13 A	0.03 A	0.0006 A	2.0
44			5	4.95	0.25	-0.05	0.0055	2.0
45			9	9.08	0.37	0.08	0.0099	2.0
46	AC Voltage @ 50 Hz	200 V	20 V	20.2 V	1.2 V	0.2 V	0.0086 V	2.0
47			100	100.4	2.2	0.4	0.0230	2.0
48			180	180.5	3.2	0.5	0.0414	2.0
49		600 V	60 V	61 V	11 V	1 V	0.0138 V	2.0
50			300	298	14	-2	0.0690	2.0
51			540	543	16	3	0.1890	2.0

Note:-

Diode & Continuity functions are checked & found satisfactory.

Conclusion Remarks:-

1. Measured readings are reported.
2. Measurement uncertainty reported is at 95.45 % confidence level.

Calibrated By
Asha S
Asha S
(Calibration Engineer)

Checked By
Guruprasad S C
(Lab In-Charge)

Authorised By
Gangadhar C.K

VAIDYANATHESHWARA INSTRUMENTS NATIONAL ACCREDIATED LABORATORY NABL 080-23377266