

CENTRIFUGE CALIBRATION REPORT

DEPARTMENT	INSTRUMENT NAME	INSTRUMENT ID	MODEL NO	REPORT NO
<i>Sexology</i>	<i>Rotary Shakes</i>	<i>SER/001</i>	<i>R.S-12R</i>	<i>CAL/RSR/Jan-23/01</i>
Cal Done Date	<i>18/01/2023</i>	Cal Due Date	<i>18/07/2023</i>	
Ownership	SRL <input checked="" type="checkbox"/>	LOAN	<input checked="" type="checkbox"/>	RR <input checked="" type="checkbox"/>
Acceptable rpm/time limit	± 5 %	Operating Range	From rpm To	rpm

Sr. No.	Set Value	Measured Value (Avg. of 5 reading)	SD	Error	Exp. Uncert.
1	100	100.8	0.836	0.245	1.482
2	120	119.4	0.894	-1.152	1.509
3	180	181.2	1.303	0.653	1.731

Sr. No.	Set Value	Measured Value (Avg. of 5 reading)	SD	Error	Exp. Uncert.
1	60	60.24	0.114	0.006	0.145
2	300	300.38	0.178	-0.102	0.259
3	600	600.52	0.238	-0.067	0.421

Sr. No.	Set Value °c	Measured Value (Avg. of 5 reading)	SD	Error	Exp. Uncert.

The reported expanded uncertainty is based on a standard uncertainty multiplied by a coverage factor k=2, providing the level of confidence of approx. 95%.

Calibration status	Passed <input checked="" type="checkbox"/>	Failed <input type="checkbox"/>
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TEST EQUIPMENT NAME	Test equipment ID	Traceable Report No
TACHOMETER	<i>ENG/DTM-01</i>	<i>MTL/SR22/R02/01-23</i>
TIMER	<i>ENG/SW-01</i>	<i>MTL/SR22/R06/01-23</i>
THERMOMETER		

The above mentioned instrument has been calibrated using standards with accuracy guidelines traceable to the National Institute of Standards & Technology (NIST).

Engineer's Name	<i>Mirajul Islam</i>	Report Reviewed by	
Signature/Date	<i>18/1/23</i>	Signature/Date	<i>D. Sate</i>

SECTION HEAD SIGN:

Doc No.: ENG QC02(316)	Centrifuge Calibration Report			Page 1 of 1
Issue No.: 01	Issue Date: 01.12.2021	Amend No.: 00	Amend Date: 00	<i>Audh</i>
Issued By: Mr. Surendra Kumar Gupta (DGM-QA)				



MEASURE TECHNO LAB

2, B.T. ROAD (JAYANTI CINEMA COMPLEX), BARRACKPORE,
KOLKATA - 700120, W.B.



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NABL ACCREDITED LABORATORY
Certificate No. CC - 2343

CALIBRATION CERTIFICATE OF DIGITAL TACHOMETER

CALIBRATION CERTIFICATE NO.: MTL / SRL / R02 / 01 - 23

ULR - CC25452300001407F

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1.0 Service Request No.: MTL / 14 / 01 / 22 - 23

1.1 Issued to: M/s. SRL Limited,
P.S. Srijan Tech Park, Ground Floor,
DN - 52, Sector V, Salt Lake,
Kolkata - 700091, W.B.

1.2 Description & Identification of Item to be Calibrated:	a) Name:	Digital Tachometer	b) Code No.:	ENG / DTM - 01
	c) Sl. No.:	AB.16577	d) Make:	Lutron
	e) Model / Type:	DT - 2236	f) Range:	5 rpm to 99999 rpm
	g) Sensor:	N.A.	h) Resolution:	0.1 rpm upto 999.9 rpm then 1 rpm
	i) End User:	Engineering Department	j) Accuracy:	N.S.

k) Calibration done at: On Site / \sqrt In House

1.3 Date of receipt of Item : 13-01-23 1.4 Physical Condition of DUC : OK

1.5 Date of calibration : 14-01-23 1.6 Recommended date of next calibration : 14-01-24

1.7 Date of Issue : 16-01-23

1.8 Environmental Conditions During Calibration: Temperature: 20 °C \pm 2 °C
Humidity: 50 % RH \pm 10 % RH

1.9 Method of Calibration: SOP / RPM / 01

2.0 Traceability :

a) Standards used for calibration are traceable to National standards through NABL Accredited Laboratory.

b) The following standards / Equipment have been used.

i) Digital Tachometer Cal. Certificate No. JRPM - CCTR - A&S - 2022 - 0025 (JRPM, Chennai) (Cal. Date: 09/07/22, Due Date: 08/07/23)

2.1 Result :

Mechanical Calibration

Sl. No.	Parameter/ Range	Nominal Value on DUC rpm	Std. Value Average of Five Readings rpm	Error rpm	Measurement Expanded Uncertainty \pm rpm
1.		100.1	100.11	-0.01	
2.		499.9	499.85	0.05	
3.		1000	1000.5	-0.5	
4.	Rotation	4999	4999.6	-0.6	
5.	5 rpm to 99999 rpm	9987	9986	1	0.28 upto 100 rpm then
6.		19999	19995	4	1.28 upto 10000 rpm
7.		29988	29992	-4	then 14 upto 30000 rpm
8.		59983	59980	3	then 10.43
9.		89485	89487	-2	

Remarks: i) This result has an expanded uncertainty with a coverage factor k=2 at approximately 95% confidence level.

ii) The calibration certificate issued for this instrument is to be used for scientific or industrial purposes only.

iii) Error = DUC Reading - Standard Reading.

DUC - Device Under Calibration
Std. - Standard

N.S. - Not Specified
rpm - Rotation Per Minute

N.A. - Not Applicable

Opinions and Interpretations

Calibrated	✓	Accepted / Valid for use
Limited Use		Rejected / Out of use

Calibration Engineer
Measure Techno Lab
R.K. Singh
Calibration Engineer

Checked / Approved by

