

CENTRIFUGE CALIBRATION REPORT

DEPARTMENT	INSTRUMENT NAME	INSTRUMENT ID	MODEL NO	REPORT NO
Hematology	Centrifuge	HEM/005	R8C	CHL/CEG/1 JOB-23/01
Cal Done Date	18/01/20	23	Cal Due Date	18/07/2023
Ownership	SRL <input checked="" type="checkbox"/>	LOAN	<input checked="" type="checkbox"/>	RR <input checked="" type="checkbox"/>
Acceptable rpm/time limit	± 5 %	Operating. Range	From 1000 rpm	To 4000 rpm

Sr. No.	Set Value	Measured Value (Avg. of 5 reading)	SD	Error	Exp. Uncert.
1	1000	1007	2.739	6.535	57.8
2	2000	2011.6	3.209	11.235	57.82
3	4000	4014.4	1.342	14.235	57.76

Sr. No.	Set Value	Measured Value (Avg. of 5 reading)	SD	Error	Exp. Uncert.
1	60	60.18	0.084	-0.054	0.112
2	300	300.18	0.084	-0.210	0.2
3	600	600.54	0.152	-0.047	0.379

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 Failed

TEST EQUIPMENT NAME	Test equipment ID	Traceable Report No
TACHOMETER	ENG/DTM-01	MTL/SRL2/K02/01-22
TIMER	ENG/SW-01	MTL/SRL2/R06/01-22
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>Mirajid Islam</i>	Report Reviewed by	
Signature/Date	<i>[Signature]</i> 18/1/23	Signature/Date	<i>[Signature]</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
Issued By: Mr. Surendra Kumar Gupta (DGM-QA)			<i>[Signature]</i>



MEASURE TECHNO LAB

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

Phone : 033 - 2215 - 0032, 2215 - 9687, 8100875519, Mobile: 9831190974,
LAB:- 8100143376, E-mail: measuretechno@yahoo.co.in



NABL ACCREDITED LABORATORY
Certificate No. CC - 2515

CALIBRATION CERTIFICATE OF DIGITAL TACHOMETER

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

ULR - CC254523000001407F

Page: 1 of 1

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.	Rotation 5 rpm to 99999 rpm	100.1	100.11	-0.01	0.28 upto 100 rpm then 1.28 upto 10000 rpm then 14 upto 30000 rpm then 10.43
2.		499.9	499.85	0.05	
3.		1000	1000.5	-0.5	
4.		4999	4999.6	-0.6	
5.		9987	9986	1	
6.		19999	19995	4	
7.		29988	29992	-4	
8.		59983	59980	3	
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

Calibrated by: Engineer
Measure Techno Lab
R.K. Singh
Calibration Engineer

Checked / Approved by:

