

CENTRIFUGE CALIBRATION REPORT

Asset Details - General					
DEPARTMENT	INSTRUMENT NAME	INSTRUMENT ID	MODEL NO	REPORT NO	
Clinical Pathology	Centrifuge	CL1002	R9C	CALCFG/Jan-22/01	
Cal Done Date	220120	22	Cal Due Date	2207	2022
Ownership	SRL <input checked="" type="checkbox"/>	LOAN	<input type="checkbox"/> RR	<input type="checkbox"/>	
Acceptable rpm/time limit	± 5 %	Operating Range	From 1000 rpm	To	4000 rpm
TEST VALUE TABLE FOR SPEED CALIBRATION					
Sr. No.	Set Value (r.p.m)	Measured Value (Avg. of 5 reading)	SD	Error	Exp. Uncert.
1	1000	998.76	0.055	+1.7	5.8
2	2000	1998.4	0.55	-1.96	5.8
3	4000	3998	0.71	-2.16	5.8
TEST VALUE TABLE FOR TIMER CALIBRATION					
Sr. No.	Set Value (sec)	Measured Value (Avg. of 5 reading)	SD	Error	Exp. Uncert.
1	60	59.86	0.055	-0.37	0.087
2	300	299.86	0.055	-0.52	0.191
3	600	599.86	0.055	-0.73	0.355
TEST VALUE TABLE FOR TEMPERATURE CALIBRATION NOT APPLICABLE					
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"/>			
CALIBRATION STANDARD USED					
TEST EQUIPMENT NAME	Test equipment ID	Traceable Report No			
TACHOMETER	ENG/DTM-01	MTL/SRL/RO4/01-22			
TIMER	ENG/SW/01	MTL/SRL/ROE/01-22			
THERMOMETER	NA	NA			
The above mentioned instrument has been calibrated using standards with accuracy guidelines traceable to the National Institute of Standards & Technology (NIST).					
Engineer's Name	Khokan Mandal	Report Reviewed by			
Signature/Date	<i>[Signature]</i> 22/1/22	Signature/ Date			

SECTION HEAD SIGN:

Doc No.: ENG QC02 (292)	Centrifuge Calibration Report			Page 1 of 1
Issue No.: 01	Issue Date: 01.09.2020	Amend No.: 00	Amend Date: 00	<i>[Signature]</i>
Issued By: Mr. Surendra Kumar Gupta (DGM-QA)				

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

Form No. - MTL/22/2006

CALIBRATION CERTIFICATE OF
DIGITAL TACHOMETER



Phone : 033 - 2215 - 0032, 2215 - 9687, 8100875519,
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ULR - CC254522000000786F

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CALIBRATION CERTIFICATE NO.: MTL / SRL / R04 / 01 - 22

1.0 Service Request No.: MTL / 10G / 01 / 21 - 22

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
 c) Sl. No.: AB.16577
 e) Model / Type: DT - 2236
 g) Sensor: N.A.
 i) End User: Engineering Department

b) Code No.: ENG / DTM - 01
 d) Make: Lutron
 f) Range: 5 rpm to 99999 rpm
 h) Resolution: 0.1 rpm upto 999.9 rpm then 1 rpm
 j) Accuracy: N.S.

k) Calibration done at: On Site / In House

1.3 Date of receipt of item : 08-01-22

1.4 Physical Condition of DUC : OK

1.5 Date of calibration : 10-01-22

1.6 Recommended date of next calibration : 10-01-23

1.7 Date of Issue : 12-01-22

1.8 Environmental Conditions During Calibration:

Temperature: 20 °C ± 2 °C
 Humidity: 50 % RH ± 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 - 2021 - 0020 (JRPM, Chennai) (Cal. Date: 10/07/21, Due Date: 09/07/22)

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 ± rpm
1.	Rotation 5 rpm to 99999 rpm	99.8	99.997	-0.197	0.28 upto 100 rpm then 1.28 upto 10000 rpm then 14 upto 30000 rpm then 10.43
2.		500.0	499.94	0.06	
3.		999.2	1000.7	-1.5	
4.		4999	4999.5	-0.5	
5.		9995	9990.2	4.8	
6.		19995	19996	-1	
7.		29995	29996	-1	
8.		59992	59986	6	
9.		89919	89911	8	

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.

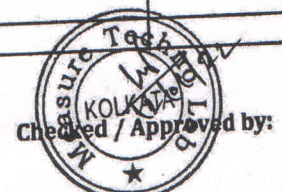
DUC - Device Under Calibration
 Std. - Standard

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: *Testing Engineer*
Measure Techno Lab
 Testing Engineer Kolkata



Quality & Technical Manager