



# TMSCC

TESTING MACHINE SERVICE AND CALIBRATION CENTRE  
Precision is Our Destination.....

An ISO 9001 : 2015 Certified company  
Calibration of Various Instruments & Testing Machines...



CC - 3125

Form No.: TMSCC/R/23

## CALIBRATION CERTIFICATE

CALIBRATION CERTIFICATE NO.: 2023/08/1648 Page 1 of 1

ISSUE DATE : 13-Sep-2023

ULR No.: CC312523000013636F

1.0	ISSUED TO:	M/s.: Barasat Government Medical College & Hospital ICTC, ANC Barasat, Banamalipur, North 24 Pgs, Pin-700124, West Bengal.	
1.1	Service Request Form No. :	SRF/2023/08/30/04	
1.2	Service Request Date :	30-08-2023	
1.3	Location:	At Lab	

Description identification of item to be calibrated:

1.4	i	Name:	Micro Pipette	ii	Make:	Microlit
	iii	Model / Type No.:	--	iv	S/L No.:	--
	v	I.D.No.:	ICTCANC/MP/01	vi	Job Code No:	2023/08/1648
	vii	Range:	(20 - 200) $\mu$ l	viii	Resolution:	--
	ix	Accuracy	As Per ISO 8655-6	x	End User :	--

1.5 Full / Partial Calibration: Full Calibration

1.6 Applicable specification of item to be calibrated: Accuracy / permissible limit: Not Specified.

1.7 Date of receipt of item: 30-Aug-2023 1.8 Date of calibration: 30-Aug-2023

1.9 Calibration due on: 29-Aug-2024 2.0 Frequency of calibration once in: 12 Months

2.1 Environmental condition during calibration  
Temperature: 20.3  $^{\circ}$ C  
Humidity: 52 % RH

2.2 Basis of calibration: SOP/04/02

2.3 Traceability : Standards used for calibration are traceable to National Standards through NABL accredited Laboratory.

Name of the Instrument	Sl. No./ Id No.	Certificate No.	Lab Certificate No.	Calibrated On	Due On
Digital Weighing Balance	(TMSCC/EB/01) (Sl. No.- 14255716)	TSC/22-23/12101-25	CC - 2231	15-11-2022	15-11-2023
Digital Temperature Indicator with Sensor(RTD)	Sl. No.- 18K588073 (Sensor Sl. No.- 19102403)	TSC/22-23/12095-36	CC - 2231	17-11-2022	17-11-2023

### CALIBRATION RESULTS

Sl. No.	Denomination Volume in $\mu$ l	Observed Reading at Ref. Std. Balance in g (Avg. of five readings)	Density of De ionized Water in g/ml	Actual volume in $\mu$ l	Error in $\mu$ l	MPE in $\pm \mu$ l	Measurement Uncertainty in $\pm \mu$ l	Acceptance Criteria
1	20	0.01997	0.998141	20.01080	0.01080	0.2	0.033	Pass
2	50	0.04993	0.998141	50.02700	0.02700	0.5	0.033	Pass
3	100	0.09987	0.998141	100.05400	0.05400	0.8	0.033	Pass
4	150	0.14980	0.998141	150.08100	0.08100	1.6	0.033	Pass
5	200	0.19974	0.998141	200.10800	0.10800	1.6	0.033	Pass

Measurement Uncertainty at 95% confidence level where coverage factor, k=2

Remarks: The above DUC has been calibrated over its above range & the readings observed are tabulated above. The reference standard used is traceable to National Standard.

DUC: Device Under Calibration

Physical status of the Instrument : Ok

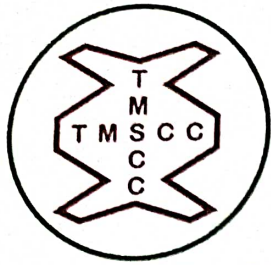
Calibrated By :  
  
J. Bhattacharjee  
(Sr. Calibration Engineer)

Checked By :  
  
S. Chowdhury  
(Quality Manager)



Approved By :  
  
C. Ghosh  
(Technical Director)

END OF CERTIFICATE



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Form No.: TMSCC/R/23

## CALIBRATION CERTIFICATE

Page 1 of 1

CALIBRATION CERTIFICATE NO.:		2023/08/1649		Page 1 of 1				
ISSUE DATE :		13-Sep-2023						
ULR No.:		CC312523000013637F						
1.0	ISSUED TO:	M/s.: Barasat Government Medical College & Hospital ICTC, ANC Barasat, Banamalipur, North 24 Pgs, Pin-700124, West Bengal.						
1.1	Service Request Form No. :	SRF/2023/08/30/04						
1.2	Service Request Date :	30-08-2023						
1.3	Location:	At Lab						
Description identification of item to be calibrated:								
1.4	i	Name:	Micro Pipette	ii	Make:	Microlit		
	iii	Model / Type No.:	--	iv	S/L No.:	--		
	v	I.D.No.:	ICTCANC/MP/02	vi	Job Code No:	2023/08/1649		
	vii	Range:	(20 - 200) µl	viii	Resolution:	--		
	ix	Accuracy	As Per ISO 8655-6	x	End User :	--		
1.5	Full / Partial Calibration:	Full Calibration						
1.6	Applicable specification of item to be calibrated: Accuracy / permissible limit:	Not Specified.						
1.7	Date of receipt of item:	30-Aug-2023	1.8	Date of calibration:	30-Aug-2023			
1.9	Calibration due on:	29-Aug-2024	2.0	Frequency of calibration once in:	12 Months			
2.1	Environmental condition during calibration	Temperature:	20.3 °C					
		Humidity:	52 % RH					
2.2	Basis of calibration:	SOP/04/02						
2.3	Traceability : Standards used for calibration are traceable to National Standards through NABL accredited Laboratory.							
Name of the Instrument		Sl. No./ Id No.	Certificate No.	Lab Certificate No.	Calibrated On	Due On		
Digital Weighing Balance		(TMSCC/EB/01) (Sl. No.- 14255716)	TSC/22-23/12101-25	CC - 2231	15-11-2022	15-11-2023		
Digital Temperature Indicator with Sensor(RTD)		Sl. No.- 18K588073 (Sensor Sl. No.- 19102403)	TSC/22-23/12095-36	CC - 2231	17-11-2022	17-11-2023		
<b>CALIBRATION RESULTS</b>								
Sl. No.	Denomination Volume in µl	Observed Reading at Ref. Std. Balance in g (Avg. of five readings)	Density of De ionized Water in g/ml	Actual volume in µl	Error in µl	MPE in ± µl	Measurement Uncertainty in ± µl	Acceptance Criteria
1	20	0.01998	0.998141	20.01953	0.01953	0.2	0.033	Pass
2	50	0.04996	0.998141	50.04881	0.04881	0.5	0.033	Pass
3	100	0.09991	0.998141	100.09763	0.09763	0.8	0.033	Pass
4	150	0.14987	0.998141	150.14644	0.14644	1.6	0.033	Pass
5	200	0.19982	0.998141	200.19526	0.19526	1.6	0.033	Pass
Measurement Uncertainty at 95% confidence level where coverage factor, k=2								
<b>Remarks:</b> The above DUC has been calibrated over its above range & the readings observed are tabulated above. The reference standard used is traceable to National Standard.								
DUC: Device Under Calibration								
Physical status of the Instrument : Ok								

Calibrated By :

J. Bhattacharjee  
(Sr. Calibration Engineer)

Checked By :

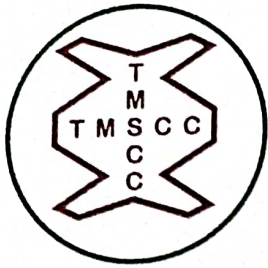
S. Chowdhury  
(Quality Manager)

Approved By :

C. Ghosh  
(Technical Director)



END OF CERTIFICATE



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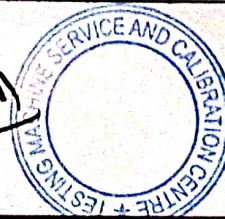
Form No.: TMSCC/R/23					
CALIBRATION CERTIFICATE					
CALIBRATION CERTIFICATE NO.:				2023/08/1650	
ISSUE DATE :				13-Sep-2023	
ULR No.:				CC312523000013638F	
1.0 ISSUED TO :		M/s.: Barasat Government Medical College & Hospital ICTC, ANC Barasat, Banamalipur, North 24 Pgs, Pin-700124, West Bengal.			
1.1 Service Request From No. :		SRF/2023/08/30/04			
1.2 Service Request Date :		30-Aug-2023			
1.3 Location :		At Lab			
1.4 Description identification of item to be calibrated :					
i	Name :	RPM & Timer of Rotary Shaker	ii	Make :	REMI
iii	Model / Type No.:	RS-12R	iv	S/L No.:	ZCFS 17700
v	I.D.No.:	--	vi	Job Code No.:	2023/08/1650
vii	Capacity	( 0 - 400 ) RPM, 99 Min	viii	Resolution :	--
ix	Accuracy :	As Per ASTM F-2046, NIST: 1960-12	x	End User :	--
1.5 Full / Partial Calibration :		Partial Calibration			
1.6 Applicable specification of item to be calibrated: Accuracy / permissible limit :		Not Specified.			
1.7 Date of receipt of item :		30-Aug-2023		1.7 Date of calibration :	
				30-Aug-2023	
1.9 Calibration due on :		29-Feb-2024		1.9 Frequency of calibration once in :	
				12 Months	
2.1 Environmental condition during calibration :		Temperature : 25.2 °C			
		Humidity : 52 % RH			
2.2 Basis of calibration :		SOP/05/01, SOP/9/16			
2.3 Traceability : Standards used for calibration are traceable to National Standards through NABL accredited Laboratory.					
Name of Instrument		Sl. No./ Id No.	Certificate No.	Lab Certificate No.	Calibrated On
Digital Tachometer		(TMSCC/DT/01) (Sl. No.- 197-0062V)	NI2023/04/0019	CC-2294	07-04-2023
Digital Time Totaliser		(TMSCC/TT/01) (Sl. No.- 19HT0559)	TSC/22-23/12095-38	CC-2231	15-11-2022
CALIBRATION RESULTS					
Sl. No.	Denomination set in rpm	Observed Reading at Ref. Std. in rpm (Average of five readings)	Error in rpm	Uncertainty in (±) %	Acceptance Criteria
1	100	99.8	-0.2	1.52	Pass
2	200	199.7	-0.3	1.52	Pass
3	300	299.5	-0.5	1.52	Pass
4	400	399.3	-0.7	1.52	Pass
Maximum Permissible Error : (±) 1% of rdg					

Calibrated By :

P. Dasmalakar  
(Sr. Calibration Engineer)

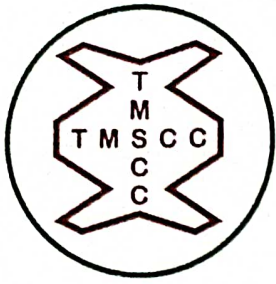
Checked By :

C. Ghosh  
(Technical Director)



Approved By :

S. Chowdhury  
(Quality Manager)



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Form No.: TMSCC/R/23					
CALIBRATION CERTIFICATE					
CALIBRATION CERTIFICATE NO.:		2023/08/1651		Page 1 of 1	
ISSUE DATE:		13-Sep-2023			
ULR No.:		CC312523000013639F			
1.0	ISSUED TO:	M/s.: Barasat Government Medical College & Hospital ICTC, ANC Barasat, Banamalipur, North 24 Pgs, Pin-700124, West Bengal.			
1.1	Service Request From No.:	SRF/2023/08/30/04			
1.2	Service Request Date:	30-Aug-2023			
1.3	Location:	At Site			
1.4	Description identification of item to be calibrated:				
	i Name:	Centrifuge	ii Make:	REMI	
	iii Model / Type No.:	C852	iv S/L No.:	--	
	v I.D.No.:	ICTC-ANC/CF/01	vi Job Code No.:	2023/08/1651	
	vii Capacity	(0 - 3500) Rpm	viii Resolution:	--	
	ix Accuracy:	As per IS 4092-1:1992	x End User:	--	
1.5	Full / Partial Calibration:	Full Calibration			
1.6	Applicable specification of item to be calibrated: Accuracy / permissible limit:	Not Specified.			
1.7	Date of receipt of item:	30-Aug-2023	1.7 Date of calibration:	30-Aug-2023	
1.9	Calibration due on:	29-Aug-2024	1.9 Frequency of calibration once in:	12	Months
2.1	Environmental condition during calibration:	Temperature: 25.5 °C	Humidity: 52 % RH		
2.2	Basis of calibration:	SOP/05/02			
2.3	Traceability: Standards used for calibration are traceable to National Standards through NABL accredited Laboratory.				
	Name of Instrument	Sl. No./ Id No.	Certificate No.	Lab Certificate No.	Calibrated On
	Digital Tachometer	(TMSCC/DT/01) (Sl. No.- 197-0062V)	NI2023/04/0019	CC-2294	07-04-2023
				Due On	06-04-2024
CALIBRATION RESULTS					
Sl. No.	Denomination set in rpm	Observed Reading at Ref. Std. in rpm (Average of five readings)	Error in rpm	Uncertainty in (±) %	Acceptance Criteria
1	500	496.8	-3.3	0.66	Pass
2	1000	993.5	-6.5	0.66	Pass
3	2000	1987.0	-13.0	0.66	Pass
4	3000	2980.5	-19.5	0.66	Pass
5	3500	3477.3	-22.8	0.66	Pass
Maximum Permissible Error : (±) 1% of rdg					
Measurement Uncertainty at 95% Confidence Level where Coverage Factor k = 2					
REMARKS : The DUC has been calibrated over its range. The readings observed are tabulated above. The reference standard is traceable to National standard.					
DUC: Device Under Calibration.					
Physical Status of the DUC : OK					

Calibrated By:

P. Dasmalakar  
(Sr. Calibration Engineer)

Checked By:

C. Ghosh  
(Technical Director)

Approved By:

S. Chowdhury  
(Quality Manager)

END OF CERTIFICATE



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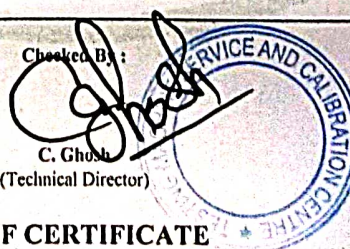
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Form No.: TMSCC/R/23							
CALIBRATION CERTIFICATE							
CALIBRATION CERTIFICATE NO.:		2023/08/1652			Page 1 of 1		
ISSUE DATE :		13-Sep-2023					
ULR No.:		CC312523000013640F					
1.0	ISSUED TO:	M/s.: Barasat Government Medical College & Hospital ICTC, ANC Barasat, Banamalipur, North 24 Pgs, Pin-700124, West Bengal.					
1.1	Service Request Form No.:	SRF/2023/08/30/04					
1.2	Service Request Date :	30-Aug-2023					
1.3	Location:	At Lab					
1.4	Description identification of item to be calibrated:						
	i	Name:	Digital Stop Watch	ii	Make:	Racer	
	iii	Model / Type No.:	--	iv	SI. No.:	--	
	v	I.D.No.:	ICTC-ANC/DSW/01	vi	Job Code No.:	2023/08/1652	
	vii	Range:	(0 - 60) minute	viii	Resolution:	0.01 sec	
	ix	Accuracy	As per NIST: 1960-12	x	End User :	--	
1.5	Full / Partial Calibration:	Full Calibration					
1.6	Applicable specification of item to be calibrated: Accuracy / permissible limit:	Not Specified.					
1.7	Date of receipt of item:	30-Aug-2023	1.8	Date of calibration:	30-Aug-2023		
1.9	Calibration due on:	29-Aug-2024	2.0	Frequency of calibration once in:	12	Months	
2.1	Environmental condition during calibration	Temperature:	25.2 °C				
		Humidity:	52 % RH				
2.2	Basis of calibration:	SOP/9/16					
2.3	Traceability : Standards used for calibration are traceable to National Standards through NABL accredited Laboratory.						
	Name of Instrument	SI. No./ Id No.	Certificate No.	Lab Certificate No.	Calibrated On	Due On	
	Digital Time Totaliser	(TMSCC/TT/01) (SI. No.- 19HT0559)	TSC/22-23/12095-38	CC-2231	15-11-2022	15-11-2023	
CALIBRATION RESULTS							
Sl. No.	Reading at Standard Totaliser in sec. (Avg. of five readings)	Reading at DUC in sec. (Avg. of five readings)	Error in sec	Uncertainty in (±) sec	Acceptance Criteria		
1	60.00	59.99	0.02	2.33	Pass		
2	600.00	599.85	0.15	2.33	Pass		
3	1200.00	1199.70	0.30	2.33	Pass		
4	1500.00	1499.63	0.38	2.33	Pass		
5	1800.00	1799.55	0.45	2.33	Pass		
6	2500.00	2499.38	0.63	2.33	Pass		
7	3300.00	3299.18	0.82	2.33	Pass		
Maximum Permissible Error : ± 5 sec (upto 1 min)/ ± 6 sec (above 1 min)							
Measurement Uncertainty at 95% Confidence Level where Coverage Factor k = 2							
REMARKS : The DUC has been calibrated over its range. The readings observed are tabulated above. The reference standard is traceable to National standard.							
DUC: Device Under Calibration.							
Physical Status of the DUC:Ok							

Calibrated By :

J. Bhattacharjee  
(Sr. Calibration Engineer)

Checked By :

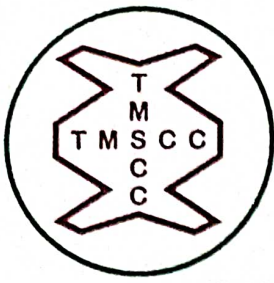


C. Ghosh  
(Technical Director)

Approved By :

P. K. Modak  
(Sr. Calibration Engineer)

END OF CERTIFICATE



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Form No.: TMSCC/R/23

## CALIBRATION CERTIFICATE

CALIBRATION CERTIFICATE NO:		2023/08/1653		Page 1 of 1		
ISSUE DATE:		13-Sep-2023				
ULR No.:		CC312523000013641P				
1.0	ISSUED TO:	M/s.: Barasat Government Medical College & Hospital ICTC, ANC Barasat, Banamalipur, North 24 Pgs, Pin-700124, West Bengal.				
1.1	Service Request Form No.:	SRF/2023/08/30/04				
1.2	Service Request Date:	30-08-2023				
1.3	Location:	At Lab				
1.4	Description identification of item to be calibrated:					
	i Name:	Digital Thermo Hygometer	ii Make:	Afeteq		
	iii Model / Type No.:	DC-3	iv S/L No.:	-		
	v I.D.No.:	ICTC-ANC/DTHM/01	vi Job Code No.:	2023/08/1653		
	vii Range:	[(-)50 to 70] °C & (10 to 99)% RH	viii Resolution:	0.1°C & 1% RH		
	ix Accuracy:	As Per DKD RS - 1 & DKD-RS-7	x End User:	-		
1.5	Full / Partial Calibration:	Partial Calibration				
1.6	Applicable specification of item to be calibrated: Accuracy / permissible limit:				Not Specified.	
1.7	Date of receipt of item:	30-Aug-2023	1.8 Date of calibration:	30-Aug-2023		
1.9	Calibration due on:	29-Aug-2024	2.0 Frequency of calibration once in:	12	Months	
2.1	Environmental condition during calibration:	Temperature:	25.2°C			
		Humidity:	52% RH			
2.2	Basis of calibration:	SOP/10/02, SOP/10/04				
2.3	Traceability: Standards used for calibration are traceable to National Standards through NABL accredited Laboratory.					
	Name of Instrument	Sl. No. / Id no.	Certificate No.	Lab Certificate No.	Calibrated on	Due on
	Temp. & Humidity Probe with Indicator	(Sl. No.: No.- 2022C01005/ 20571921)	ATL/T/090323/001	CC-2590	06-03-2023	06-03-2024
	Digital Temperature Indicator with Sensor(RTD)	(Sl. No.- 18K588073) (Sensor Sl. No.- 19102403)	TSC/22-23/12095-36	CC - 2231	17-11-2022	17-11-2023
<b>CALIBRATION RESULTS</b>						
Sl. No.	Ref. Bath set in °C	Observed Reading at DUC in °C (Avg. of five readings)	Observed Reading at Ref. Std. in °C (Avg. of five readings)	Error in °C	Uncertainty in ± °C	Acceptance Criteria
1	-35.0	-35.0	-34.912	0.088	0.18	Pass
2	-5.0	-5.0	-4.987	0.013	0.18	Pass
3	10.0	10.0	9.975	-0.025	0.18	Pass
4	30.0	30.0	29.925	-0.075	0.18	Pass
5	70.0	70.0	69.825	-0.175	0.31	Pass
Maximum Permissible Error : ± 0.3% of rdg						
Sl. No.	Ref. Source set in %	Observed Reading at DUC in % (Avg. of five readings)	Observed Reading at Ref. Std. in % (Avg. of five readings)	Error in %	Measurement Uncertainty in ± %	Acceptance Criteria
1	25	25	25.2	0.2	1.3	Pass
2	50	50	50.2	0.2	1.3	Pass
3	90	90	91.4	1.4	1.3	Pass
Maximum Permissible Error : ± 3% of rdg						
Measurement Uncertainty at 95% Confidence Level where Coverage Factor k = 2						
REMARKS : The DUC has been calibrated over its range. The readings observed are tabulated above. The reference standard is traceable to National standard.						
DUC: Device Under Calibration.						
Physical Status of the DUC : OK						

Calibrated By:  
  
R. Ghosh  
(Calibration Engineer)

Checked By:  
  
G. Ghosh  
(Technical Manager)

Approved By:  
  
P. K. Modak  
(Sr. Calibration Engineer)

END OF CERTIFICATE