



YEA

☎ : 033 2677 1411/1412, 2667 1909

YOUNG ENGG. & CALIBRATION SERVICES PVT. LTD.

Admn. Office & Lab : Kamardanga Road (Opp. Tarama Ashram), Ichapur, Howrah - 711 104

E-mail : calibration@yeagroup.org ★ Visit us at : www.yeagroup.org

CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 240620A/P1297/001

Dated : 25.06.2024

ULR No. : CC222124000041713F

Calibrated for : **Pasteur Institute**

Lawmali Road, Shillong,

Meghalaya, Pin - 793001.

Location: Bio-Chemistry

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
21.06.2024	21.06.2025	1	3

Description of Instrument

Name : Micro Pipette
Identification : SI.No.: 13550984
Range : 100 - 1000 µl
Least Count : 5 µl
Make : Biohit
Type : Piston Operated

Service Request No. / Order Reference : 240620A/P1297/001-009

Receipt of Instrument : 20.06.2024

Location where calibration performed : At permanent laboratory

Applicable Specification of Instrument to be Calibrated : Not Specified

Condition of Instrument to be Calibrated : Satisfactory

Basis of Calibration : Comparison method with reference to YEA/WI/M-47

Environmental Condition during Calibration : *Temp.* : (20±3)°C *RH* : (60±15)%

Equipment used for Calibration : Standard Electronic Balance & Distilled Water

Traceability : To National Standard vide Certificate No:
YEA(C)/230925/Y001/001 valid till 24.09.2024
YEA(C)/231216/Y001/001 valid till 15.12.2024

Measurement Uncertainty : The figures are stated in the result at coverage factor
 $k = 2$ corresponding to confidence probability of
95% for normal distribution.

Laboratory Identification : Sticker is affixed for authentication of calibration.

The above Instrument/Equipment/Machine has been calibrated

The results are given in the page 2 to 3 ...of the certificate.

Cont. **A**..2

YEA(C)/F-08



CC-2221



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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: YEA(C)/ 240620A/P1297/001

ULR No. : CC222124000041713F

Calibrated By : M. Gayan

Date: 25.06.2024

Page 2 of 3 Pages

Calibration Results

Mechanical Calibration

A) Calibration Result of Micro Pipette :

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	100	99.946	99.891	0.109	0.027	0.020
2		99.887				
3		99.882				
4		99.909		Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l)		
5		99.883				
6		99.875				
7		99.851				
8		99.871		8.000	3.000	
9		99.920				
10		99.886				

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	500	499.357	499.400	0.600	0.028	0.023
2		499.383				
3		499.418				
4		499.408		Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l)		
5		499.413				
6		499.367				
7		499.398				
8		499.428		8.000	3.000	
9		499.448				
10		499.378				

cont. 3





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ULR No. : CC222124000041713F

Calibrated By : M. Gayan

Date: 25.06.2024

Page 3 of 3 Pages

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	1000	999.373	999.439	0.561	0.035	0.027
2		999.453				
3		999.463				
4		999.413		Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l)		
5		999.428				
6		999.458		8.000	3.000	
7		999.478				
8		999.413				
9		999.488				
10		999.423				

DUC : Device Under Calibration

REMARKS : The above Micro Pipette has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By

A. Das

Manager Calibration

*** End of the Calibration Certificate ***





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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 240620A/P1297/002
ULR No. : CC222124000041714F

Dated : 25.06.2024

Calibrated for : **Pasteur Institute**
Lawmali Road, Shillong,
Meghalaya, Pin - 793001.
Location: Bio-Chemistry

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
21.06.2024	21.06.2025	1	3

Description of Instrument

Name : Micro Pipette
 Identification : Sl. No. : 17530238
 Range : 5 - 50 µl
 Least Count : 0.5 µl
 Make : Sartorius
 Type : Piston Operated

Service Request No. / Order Reference

: 240620A/P1297/001-009

Receipt of Instrument

: 20.06.2024

Location where calibration performed

: At permanent laboratory

Applicable Specification of Instrument to be Calibrated

: Not Specified

Condition of Instrument to be Calibrated

: Satisfactory

Basis of Calibration

: Comparison method with reference to YEA/WI/M-47

Environmental Condition during Calibration

: **Temp.** : (20±3)°C **RH** : (60±15)%

Equipment used for Calibration

: Standard Electronic Balance & Distilled Water

Traceability

: To National Standard vide Certificate No:
YEA(C)/230925/Y001/001 valid till 24.09.2024

Measurement Uncertainty

: The figures are stated in the result at coverage factor
 $k = 2$ corresponding to confidence probability of
95% for normal distribution.

Laboratory Identification

: Sticker is affixed for authentication of calibration.

The above Instrument/Equipment/Machine has been calibrated &
The results are given in the page 2 to 3 ...of the certificate.

Cont. A..2

YEA(C)/F-08





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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: YEA(C)/ 240620A/Pi297/002

ULR No. : CC222124000041714F

Calibrated By : S. Das

Date: 25.06.2024

Page 2 of 3 Page:-

Calibration Results

Mechanical Calibration

A) Calibration Result of Micro Pipette :

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	5.0	4.981	4.981	0.019	0.020	0.015
2		4.976				
3		4.999				
4		4.943				
5		4.985		Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l) :		
6		5.006				
7		4.959				
8		4.983				
9		4.972		0.500	0.250	
10		5.005				

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	25.0	25.011	25.039	-0.039	0.021	0.016
2		24.998				
3		25.030				
4		25.045		Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l) :		
5		25.046				
6		25.064				
7		25.049				
8		25.045				
9		25.060		0.500	0.250	
10		25.044				

cont. 3





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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: YEA(C)/ 240620A/P1297/002

ULR No. : CC222124000041714F

Calibrated By : S. Das

Date: 25.06.2024

Page 3 of 3 Pages

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	50.0	50.029	50.021	-0.021	0.028	0.020
2		50.008				
3		50.035				
4		49.999		Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l) :		
5		50.005				
6		49.983		0.500	0.250	
7		49.992				
8		50.049				
9		50.052				
10		50.061				

DUC : Device Under Calibration

REMARKS : The above Micro Pipette has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By

A. Das

Manager Calibration

*** End of the Calibration Certificate ***





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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 240620A/P1297/003
ULR No. : CC222124000041715F

Dated : 25.06.2024

Calibrated for : **Pasteur Institute**
Lawmali Road, Shillong,
Meghalaya, Pin - 793001.
Location: Bio-Chemistry

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
21.06.2024	21.06.2025	1	3

Description of Instrument

Name : Micro Pipette
Identification : Sl.No.: 8127901
Range : 100 - 1000 µl
Least Count : 5 µl
Make : Biohit
Type : Piston Operated



CC-2221

Service Request No. / Order Reference : 240620A/P1297/001-009

Receipt of Instrument : 20.06.2024

Location where calibration performed : At permanent laboratory

Applicable Specification of Instrument to be Calibrated : Not Specified

Condition of Instrument to be Calibrated : Satisfactory

Basis of Calibration : Comparison method with reference to YEA/WI/M-47

Environmental Condition during Calibration : *Temp.* : (20±3)°C : *RH* : (60±15)%

Equipment used for Calibration : Standard Electronic Balance & Distilled Water

Traceability : To National Standard vide Certificate No:
YEA(C)/230925/Y001/001 valid till 24.09.2024
YEA(C)/231216/Y001/001 valid till 15.12.2024

Measurement Uncertainty : The figures are stated in the result at coverage factor
 $k = 2$ corresponding to confidence probability of
95% for normal distribution.

Laboratory Identification : Sticker is affixed for authentication of calibration.

The above Instrument/Equipment/Machine has been calibrated
The results are given in the page 2 to 3 ... of the certificate.

Cont. A 2

YEA(C)/F-08





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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: YEA(C)/ 240620A/P1297/003

ULR No. : CC222124000041715F

Calibrated By : M. Gayan

Date: 25.06.2024

Page 2 of 3 Pages

Calibration Results

Mechanical Calibration

A) Calibration Result of Micro Pipette :

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	100	99.851	99.894	0.106	0.030	0.022
2		99.908				
3		99.884				
4		99.903				
5		99.947				
6		99.857				
7		99.900				
8		99.924				
9		99.905				
10		99.864				
				Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l)		
				8.000	3.000	

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	500	499.367	499.393	0.607	0.034	0.027
2		499.367				
3		499.378				
4		499.418				
5		499.357				
6		499.388				
7		499.362				
8		499.448				
9		499.448				
10		499.393				
				Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l)		
				8.000	3.000	

cont





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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: YEA(C)/ 240620A/P1297/003

ULR No. : CC222124000041715F

Calibrated By : M. Gayan

Date: 25.06.2024

Page 3 of 3 Pages

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	1000	999.353	999.441	0.559	0.039	0.030
2		999.443				
3		999.453				
4		999.408				
5		999.453		Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l)		
6		999.443				
7		999.483				
8		999.423				
9		999.483		8.000	3.000	
10		999.463				

DUC : Device Under Calibration.

REMARKS : The above Micro Pipette has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By

A. Das

Manager Calibration

*** End of the Calibration Certificate ***





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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 240620A/P1297/004
ULR No. : CC222124000041716F

Dated : 25.06.2024

Calibrated for : **Pasteur Institute**
Lawmali Road, Shillong,
Meghalaya, Pin - 793001.
Location: Bio-Chemistry

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
21.06.2024	21.06.2025	1	3

Description of Instrument

Name : Micro Pipette
Identification : SI. No. : YL227AR0020359
Range : 20 - 200 µl
Least Count : 1 µl
Make : Abdos
Type : Piston Operated

Service Request No. / Order Reference : 240620A/P1297/001-009

Receipt of Instrument : 20.06.2024

Location where calibration performed : At permanent laboratory

Applicable Specification of Instrument to be Calibrated : Not Specified

Condition of Instrument to be Calibrated : Satisfactory

Basis of Calibration : Comparison method with reference to YEA/WI/M-47

Environmental Condition during Calibration : *Temp.* : (20±3)°C *RH* : (60±15)%

Equipment used for Calibration : Standard Electronic Balance & Distilled Water

Traceability : To National Standard vide Certificate No: YEA(C)/230925/Y001/001 valid till 24.09.2024

Measurement Uncertainty : The figures are stated in the result at coverage factor $k = 2$ corresponding to confidence probability of 95% for normal distribution.

Laboratory Identification : Sticker is affixed for authentication of calibration.

The above Instrument/Equipment/Machine has been calibrated
The results are given in the page 2 to 3 ...of the certificate.

Cont. 2

YEA(C)/F-08





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Certificate No.: YEA(C)/ 240620A/P1297/004

ULR No. : CC222124000041716F

Calibrated By : S. Das

Date: 25.06.2024

Page 2 of 3 Pages

Calibration Results

Mechanical Calibration

A) Calibration Result of Micro Pipette :

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	20	20.023	20.046	-0.046	0.031	0.024
2		20.102				
3		20.086				
4		20.038				
5		20.043				
6		20.012				
7		20.016				
8		20.027				
9		20.042				
10		20.078				
				Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l)		
				1.600	0.600	

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	100	99.861	99.893	0.107	0.036	0.026
2		99.857				
3		99.877				
4		99.919				
5		99.902				
6		99.919				
7		99.933				
8		99.864				
9		99.848				
10		99.948				
				Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l)		
				1.600	0.600	

cont. 3





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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 240620A/P1297/005
ULR No. : CC222124000041717F

Dated : 25.06.2024

Calibrated for : **Pasteur Institute**
Lawmali Road, Shillong,
Meghalaya, Pin - 793001.
Location: Bio-Chemistry

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
21.06.2024	21.06.2025	1	3

Description of Instrument

Name : Micro Pipette
 Identification : SI.No.: 070205180
 Range : 100 - 1000 µl
 Least Count : 10 µl
 Make : JSGW
 Type : Piston Operated

Service Request No. / Order Reference : 240620A/P1297/001-009

Receipt of Instrument : 20.06.2024

Location where calibration performed : At permanent laboratory

Applicable Specification of Instrument to be Calibrated : Not Specified

Condition of Instrument to be Calibrated : Satisfactory

Basis of Calibration : Comparison method with reference to YEA/WI/M-47

Environmental Condition during Calibration : *Temp.* : (20±3)°C *RH* : (60±15)%

Equipment used for Calibration : Standard Electronic Balance & Distilled Water

Traceability : To National Standard vide Certificate No:
YEA(C)/230925/Y001/001 valid till 24.09.2024
YEA(C)/231216/Y001/001 valid till 15.12.2024

Measurement Uncertainty : The figures are stated in the result at coverage factor
 $k = 2$ corresponding to confidence probability of
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Cont. ^A 2

YEA(C)/F-08





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Calibrated By : M. Gayan

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Page 2 of 3 Pages

Calibration Results

Mechanical Calibration

A) Calibration Result of Micro Pipette :

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	100	99.864	99.891	0.109	0.029	0.021
2		99.871				
3		99.882				
4		99.879				
5		99.937		Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l)		
6		99.851				
7		99.908				
8		99.914				
9		99.930		8.000	3.000	
10		99.879				

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	500	499.378	499.391	0.609	0.035	0.027
2		499.357				
3		499.357				
4		499.403				
5		499.362		Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l)		
6		499.367				
7		499.367				
8		499.438				
9		499.438		8.000	3.000	
10		499.438				

cont. 3





YEA

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YOUNG ENGG. & CALIBRATION SERVICES PVT. LTD.

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: YEA(C)/ 240620A/P1297/005

ULR No. : CC222124000041717F

Calibrated By : M. Gayan

Date: 25.06.2024

Page 3 of 3 Pages

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	1000	999.333	999.438	0.562	0.043	0.032
2		999.433				
3		999.453				
4		999.418		Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l)		
5		999.448				
6		999.438		8.000	3.000	
7		999.468				
8		999.433				
9		999.493				
10		999.458				

DUC : Device Under Calibration

REMARKS : The above Micro Pipette has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By


A. Das

Manager Calibration

*** End of the Calibration Certificate ***





YEA

☎ : 033 2677 1411/1412, 2667 1909

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E-mail : calibration@yeagroup.org ★ Visit us at : www.yeagroup.org

CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 240620A/P1297/006

Dated : 25.06.2024

ULR No. : CC222124000041718F

Calibrated for : **Pasteur Institute**
Lawmali Road, Shillong,
Meghalaya, Pin - 793001.
Location: Bio-Chemistry

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
21.06.2024	21.06.2025	1	3

Description of Instrument

Name : Micro Pipette
Identification : Sl.No.: 12531811
Range : 100 - 1000 µl
Least Count : 5 µl
Make : Biohit
Type : Piston Operated



CC-2221

Service Request No. / Order Reference : 240620A/P1297/001-009

Receipt of Instrument : 20.06.2024

Location where calibration performed : At permanent laboratory

Applicable Specification of Instrument to be Calibrated : Not Specified

Condition of Instrument to be Calibrated : Satisfactory

Basis of Calibration : Comparison method with reference to YEA/WI/M-47

Environmental Condition during Calibration : *Temp.* : (20±3)°C *RH* : (60±15)%

Equipment used for Calibration : Standard Electronic Balance & Distilled Water

Traceability : To National Standard vide Certificate No:
YEA(C)/230925/Y001/001 valid till 24.09.2024
YEA(C)/231216/Y001/001 valid till 15.12.2024

Measurement Uncertainty : The figures are stated in the result at coverage factor
 $k = 2$ corresponding to confidence probability of
95% for normal distribution.

Laboratory Identification : Sticker is affixed for authentication of calibration.

The above Instrument/Equipment/Machine has been calibrated
The results are given in the page 2 to 3 ...of the certificate.

Cont. **A**...2

YEA(C)/F-08





YEA

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: YEA(C)/ 240620A/P1297/006

ULR No. : CC222124000041718F

Calibrated By : M. Gayan

Date: 25.06.2024

Page 2 of 3 Pages

Calibration Results

Mechanical Calibration

A) Calibration Result of Micro Pipette :

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	100	99.947	99.919	0.081	0.031	0.022
2		99.899				
3		99.933				
4		99.910				
5		99.885		Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l)		
6		99.858				
7		99.943				
8		99.925		8.000	3.000	
9		99.942				
10		99.950				

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	500	499.388	499.387	0.613	0.029	0.023
2		499.357				
3		499.388				
4		499.438				
5		499.362		Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l)		
6		499.357				
7		499.388				
8		499.373		8.000	3.000	
9		499.438				
10		499.378				

contd. 3





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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: YEA(C)/ 240620A/P1297/006

ULR No. : CC222124000041718F

Calibrated By : M. Gayan

Date: 25.06.2024

Page 3 of 3 Pages

Sl. No.	DUC Value	Standard Value at 27°C	Mean Value	Systematic Error (es)	Random Error (cv)	Measurement Uncertainty
	(μ l)	(μ l)	(μ l)	(μ l)	(μ l)	($\pm \mu$ l)
1	1000	999.353	999.439	0.561	0.041	0.031
2		999.443				
3		999.463				
4		999.433		Standard Limit Value as Per ISO 8655 - 2 : 2022 ($\pm \mu$ l)		
5		999.448				
6		999.413		8.000	3.000	
7		999.493				
8		999.428				
9		999.493				
10		999.423				

DUC : Device Under Calibration

REMARKS : The above Micro Pipette has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By


A. Das

Manager Calibration

*** End of the Calibration Certificate ***





YEA

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 240621SA/P1297/001
ULR No. : CC222124000041722F

Dated : 25.06.2024

Calibrated for : **Pasteur Institute**
Lawmali Road, Shillong,
Meghalaya, Pin - 793001.
Location: Bio-Chemistry

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
21.06.2024	21.06.2025	1	2

Description of Instrument

Name : Refrigerator (Double Door)
Identification : PI/BC/EQUIP/12`
Range : 2 to 8 °C
Make : Godrej

Service Request No. / Order Reference

: 240621SA/P1297/001-015

Receipt of Instrument

: 21.06.2024

Location where calibration performed

: At site

Applicable Specification of Instrument to be Calibrated

: Not Specified

Condition of Instrument to be Calibrated

: Satisfactory

Basis of Calibration

: Comparison method with reference to YEA/WI/T-04

Environmental Condition during Calibration

: *Temp.* : 24±2°C *RH* : 60±20%

Equipment used for Calibration

: Standard Data Acquisition System & Standard RTD Sensor

Traceability

: To National Standard vide Certificate No.
YEA(C)/ 240124/Y001/001 valid till 23.01.2025
YEA(C)/ 240111/Y001/009 valid till 11.01.2025

Measurement Uncertainty

: The figures are stated in the result at coverage factor
 $k = 2$ corresponding to confidence probability of
95% for normal distribution.

Laboratory Identification

: Sticker is affixed for authentication of calibration.



The above Instrument/Equipment/Machine has been calibrated.
The results are given in the page 2 to 2 ...of the certificate.

Cont. A.2

YEA(C)/F-08





YEA

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: 240621SA/P1297/001

ULR No. : CC222124000041722F

Calibrated By : S. Ghosh

Date : 25.06.2024

Page 2 of 2 Pages

Calibration Results

Thermal Calibration

Calibration Results of Refrigerator (Double Door) :

Sl. No.	Zone	Specified DUC Value	Standard Value		
			(° C)		
			Maximum	Minimum	Average
1	Normal Freezer	2 to 8	6.865	6.525	6.805
Stability of Refrigerator :			0.170 ° C		
Measurement Uncertainty (±) :			0.35 ° C		

Temperature Scale : ITS - 90

DUC : Device Under Calibration

REMARKS : The above Refrigerator (Double Door) has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By

A. Das

Manager Calibration

***** End of the Calibration Certificate *****





YEA

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 240621SA/P1297/003
ULR No. : CC222124000041724F

Dated : 25.06.2024

Calibrated for : **Pasteur Institute**
Lawmali Road, Shillong,
Meghalaya, Pin - 793001.
Location: Bio-Chemistry

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
21.06.2024	21.06.2025	1	2

Description of Instrument

<i>Name</i>	: Refrigerator (Double Door)
<i>Identification</i>	: PI/BC/EQUIP/11
<i>Range</i>	: 2 to 8 °C
<i>Make</i>	: Godrej

Service Request No. / Order Reference

: 240621SA/P1297/001-015

Receipt of Instrument

: 21.06.2024

Location where calibration performed

: At site

Applicable Specification of Instrument to be Calibrated

: Not Specified

Condition of Instrument to be Calibrated

: Satisfactory

Basis of Calibration

: Comparison method with reference to YEA/WI/T-04

Environmental Condition during Calibration

: **Temp.** : 24±2°C **RH** : 60±20%

Equipment used for Calibration

: Standard Data Acquisition System & Standard RTD Sensor

Traceability

: To National Standard vide Certificate No.
YEA(C)/ 240124/Y001/001 valid till 23.01.2025
YEA(C)/ 240111/Y001/009 valid till 11.01.2025

Measurement Uncertainty

: The figures are stated in the result at coverage factor
 $k = 2$ corresponding to confidence probability of
95% for normal distribution.

Laboratory Identification

: Sticker is affixed for authentication of calibration.



The above Instrument/Equipment/Machine has been calibrated.
The results are given in the page 2 to 2 ...of the certificate.

Cont. *A*...2

YEA(C)/F-08





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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: 240621SA/P1297/003

ULR No. : CC222124000041724F

Calibrated By : S. Ghosh

Date : 25.06.2024

Page 2 of 2 Pages

Calibration Results

Thermal Calibration

Calibration Results of Refrigerator (Double Door) :

Sl. No.	Zone	Specified DUC Value (° C)	Standard Value (° C)		
			Maximum	Minimum	Average
			1	Normal Freezer	2 to 8
Stability of Refrigerator :			0.175 ° C		
Measurement Uncertainty (±) :			0.35 ° C		

Temperature Scale : ITS - 90

DUC : Device Under Calibration

REMARKS : The above Refrigerator (Double Door) has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By

A. Das

Manager Calibration

*** End of the Calibration Certificate ***





YEA

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 240621SA/P1297/004
ULR No. : CC222124000041725F

Dated : 25.06.2024

Calibrated for : **Pasteur Institute**
Lawmali Road, Shillong,
Meghalaya, Pin - 793001.
Location: Bio-Chemistry

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
21.06.2024	21.06.2025	1	2

Description of Instrument

<i>Name</i>	: Digital Temperature Controller of Bacteriological Incubator
<i>Identification</i>	: PI/BC/EQUIP/35
<i>Range</i>	: 0 to 37 °C
<i>Least Count</i>	: 0.1 °C
<i>Make</i>	: I-therm
<i>Model / Type</i>	: AI-7481



Service Request No. / Order Reference

: 240621SA/P1297/001-015

Receipt of Instrument

: 21.06.2024

Location where calibration performed

: At site

Applicable Specification of Instrument to be Calibrated

: Not Specified

Condition of Instrument to be Calibrated

: Satisfactory

Basis of Calibration

: Comparison method with reference to YEA/WI/T-09

Environmental Condition during Calibration

: **Temp.** : 24±2°C **RH** : 60±20%

Equipment used for Calibration

: Standard Data Acquisition Unit & Standard RTD Sensor

Traceability

: To National Standard vide Certificate No.
YEA(C)/ 231220/Y001/001 valid till 19.12.2024
YEA(C)/ 240111/Y001/002 valid till 10.01.2025

Measurement Uncertainty

: The figures are stated in the result at coverage factor
 $k= 2$ corresponding to confidence probability of
95% for normal distribution.

Laboratory Identification

: Sticker is affixed for authentication of calibration.

The above Instrument/Equipment/Machine has been calibrated.
The results are given in the page 2 to 2 ... of the certificate.

Cont.....2





YEA

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: 240621SA/P1297/004

ULR No. : CC222124000041725F

Calibrated By : A. Manna

Date: 25.06.2024

Page 2 of 2 Pages

Calibration Results

Thermal Calibration

Calibration Results of Digital Temperature Controller of Bacteriological Incubator :

Sl. No.	Average DUC Value	Average Standard Value	Measurement Uncertainty
	(°C)	(°C)	(± °C)
1	37.4	37.352	0.28

Temperature Scale : ITS - 90

DUC : Device Under Calibration

REMARKS : The above Digital Temperature Controller of Bacteriological Incubator has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By

A

A. Das

Manager Calibration

*** End of the Calibration Certificate ***





YEA

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 240621SA/P1297/005
ULR No. : CC222124000041726F

Dated : 25.06.2024

Calibrated for : **Pasteur Institute**
Lawmali Road, Shilong,
Meghalaya, Pin - 793001.
Location: Bio-Chemistry

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
21.06.2024	21.06.2025	1	2

Description of Instrument

<i>Name</i>	: Digital Centrifuge
<i>Identification</i>	: PI/BC/EQUIP/15
<i>Make</i>	: Remi (Sl.No.: FCLC-2531)
<i>Model</i>	: R-8C

Service Request No. / Order Reference

: 240621SA/P1297/001-015

Receipt of Instrument

: 21.06.2024

Location where calibration performed

: At site

Applicable Specification of Instrument to be Calibrated

: Not Specified

Condition of Instrument to be Calibrated

: Satisfactory

Basis of Calibration

: Comparison method with reference to YEA/WI/M-44

Environmental Condition during Calibration

: **Temp.** : 24±2°C **RH** : 60±20%

Equipment used for Calibration

: Standard Digital Tachometer

Traceability

: To National Standard vide Certificate No:
YEA(C)/240108/Y001/004 valid till 07.01.2025

Measurement Uncertainty

: The figures are stated in the result at coverage factor
 $k= 2$ corresponding to confidence probability of
95% for normal distribution.

Laboratory Identification

: Sticker is affixed for authentication of calibration.



CC-2221

The above Instrument/Equipment/Machine has been calibrated and the results are given in the page 2 to 2 ...of the certificate.

Cont **D**...2

YEA(C)/F-08





YEA

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Certificate No.: 240621SA/P1297/005
ULR No. : CC222124000041726F
Calibrated By : S. Ghosh

Date: 25.06.2024
Page 2 of 2 Pages

Calibration Results

Mechanical Calibration

Calibration Results of Digital Centrifuge

Sl. No.	DUC Value	Observed Standard Value	Measurement Uncertainty
	rpm	rpm	± rpm
1	1030	1028.6	35.48
2	2010	2008.3	
3	3080	3077.3	
4	4270	4266.6	
5	5120	5115.0	

DUC : Device Under Calibration

REMARKS : The above Digital Centrifuge has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By


A. Das

Manager Calibration

*** End of the Calibration Certificate ***





YEA

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 240621SA/P1297/006
ULR No. : CC222124000041727F

Dated : 25.06.2024

Calibrated for : **Pasteur Institute**
Lawmali Road, Shillong,
Meghalaya, Pin - 793001.
Location: Bio-Chemistry

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
21.06.2024	21.06.2025	1	2

Description of Instrument

<i>Name</i>	: Thermostatic Controller of Hot Air Oven
<i>Identification</i>	: PI/BC/EQUIP/21
<i>Range</i>	: 0 to 250 °C
<i>Least Count</i>	: 25 °C
<i>Make</i>	: NSW
<i>Model / Type</i>	: NSW 143

Service Request No. / Order Reference

: 240621SA/P1297/001-015

Receipt of Instrument

: 21.06.2024

Location where calibration performed

: At site

Applicable Specification of Instrument to be Calibrated

: Not Specified

Condition of Instrument to be Calibrated

: Satisfactory

Basis of Calibration

: Comparison method with reference to YEA/WI/T-09

Environmental Condition during Calibration

: *Temp.* : 24±2°C *RH* : 60±20%

Equipment used for Calibration

: Standard Data Acquisition Unit & Standard RTD Sensor

Traceability

: To National Standard vide Certificate No.
YEA(C)/ 231220/Y001/001 valid till 19.12.2024
YEA(C)/ 240111/Y001/002 valid till 10.01.2025

Measurement Uncertainty

: The figures are stated in the result at coverage factor
 $k= 2$ corresponding to confidence probability of
95% for normal distribution.

Laboratory Identification

: Sticker is affixed for authentication of calibration.



CC-2221

The above Instrument/Equipment/Machine has been calibrated.
The results are given in the page 2 to 2 ...of the certificate.

Cont. 2





YEA

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: 240621SA/P1297/006

ULR No. : CC222124000041727F

Calibrated By : A. Manna

Date: 25.06.2024

Page 2 of 2 Pages

Calibration Results

Thermal Calibration

Calibration Results of Thermostatic Controller of Hot Air Oven :

Sl. No.	Average DUC Value	Average Standard Value	Measurement Uncertainty
	(°C)	(°C)	(± °C)
1	50	47.136	7.22
2	75	71.693	
3	125	120.345	
4	175	170.197	
5	225	219.342	

Temperature Scale : ITS - 90

DUC : Device Under Calibration

REMARKS : The above Thermostatic Controller of Hot Air Oven has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By

A

A. Das

Manager Calibration

*** End of the Calibration Certificate ***





YEA

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 240621SA/P1297/007
ULR No. : CC222124000041728F

Dated : 25.06.2024

Calibrated for : **Pasteur Institute**
Lawmali Road, Shillong,
Meghalaya, Pin - 793001.
Location: Bio-Chemistry

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
21.06.2024	21.06.2025	1	2

Description of Instrument

<i>Name</i>	: Thermostatic Controller of Serological Water Bath
<i>Identification</i>	: PI/BC/EQUIP/22
<i>Range</i>	: 0 to 100 °C
<i>Least Count</i>	: 10 °C
<i>Make</i>	: NSW
<i>Model / Type</i>	: NSW 125

Service Request No. / Order Reference

: 240621SA/P1297/001-015

Receipt of Instrument

: 21.06.2024

Location where calibration performed

: At site

Applicable Specification of Instrument to be Calibrated

: Not Specified

Condition of Instrument to be Calibrated

: Satisfactory

Basis of Calibration

: Comparison method with reference to YEA/WI/T-09

Environmental Condition during Calibration

: **Temp.** : 24±2°C **RH** : 60±20%

Equipment used for Calibration

: Standard Data Acquisition Unit & Standard RTD Sensor

Traceability

: To National Standard vide Certificate No.
YEA(C)/ 231220/Y001/001 valid till 19.12.2024
YEA(C)/ 240111/Y001/002 valid till 10.01.2025

Measurement Uncertainty

: The figures are stated in the result at coverage factor
 $k= 2$ corresponding to confidence probability of
95% for normal distribution.

Laboratory Identification

: Sticker is affixed for authentication of calibration.



The above Instrument/Equipment/Machine has been calibrated.
The results are given in the page 2 to 2 ...of the certificate.

Cont. **A**...2





YEA

☎ : 033 2677 1411/1412, 2667 1909

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: 240621SA/P1297/007

ULR No. : CC222124000041728F

Calibrated By : A. Manna

Date: 25.06.2024

Page 2 of 2 Pages

Calibration Results

Thermal Calibration

Calibration Results of Thermostatic Controller of Serological Water Bath :

Sl. No.	Average DUC Value	Average Standard Value	Measurement Uncertainty
	(°C)	(°C)	(± °C)
1	30	32.815	2.90
2	50	53.198	
3	70	73.921	
4	90	94.153	

Temperature Scale : ITS - 90

DUC : Device Under Calibration

REMARKS : The above Thermostatic Controller of Serological Water Bath has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By

A

A. Das

Manager Calibration

*** End of the Calibration Certificate ***





Calibration Certificate

Certificate No : YEA/C/230925/Y001/001
ULR No : C/23212/000013227F

Dated : 25.09.2023

Calibrated for : Young Engg. & Calibration Services Pvt. Ltd.,
Karamadanga Road, Ichapur,
Howrah - 711 104.

Calibrated on	Next Calibration Due On	Page No.	No. of Pages
25.09.2023	25.09.2024	1	3

Description of Instrument

Name : Electronic Balance
 Identification : YEA/MEC11/EB-01
 Maximum Capacity : 6.1 g
 Least Count : 0.00001 g
 Make : Mettler Toledo (IL No : B335/28891)
 Model : XP-1

Service Request No / Order Reference : 230925/0001/04-001

Receipt of Instrument : 23.09.2023

Location where calibration performed : At Premises Laboratory

Applicable Specification of Instrument to be Calibrated : Not Specified

Condition of Instrument to be Calibrated : Satisfactory

Basis of Calibration : Comparison method with reference to YEA/WIM-16

Environmental Condition during Calibration : Temp : (23±0.5)°C RH : (50±10)%

Equipment used for Calibration : Standard Weight Box

Traceability : To National Standard with Certificate No: 201210 (E3D) GRC-165 issued valid till 02.03.2024

Measurement Uncertainty : The figures are stated in the result of coverage factor k = 2, corresponding to confidence probability of 95% for normal distribution

Laboratory Identification : Sticker is affixed for authentication of calibration.

The above Instrument/Equipment/Machine has been calibrated. The results are given in the page 2 to _____ of the Certificate.



Certificate No : YEA/C/230925/Y 001/001
ULR No : C/23212/000013227F
Calibrated by : M. Gayan

Dated : 25.09.2023
Page 3 of 3 Pages

D) Exactness of Balance :

Sl. No.	Parameter	Observed Value
1	Maximum difference between centre & other four points	0.000005

DUC : Device Under Calibration

REMARKS : The above Digital Micro Balance has been calibrated and the readings are tabulated above.

NOTES : This certificate valid as the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and may differ in the subsequent observations in full extent with your written approval from the head of the calibration laboratory.

Authorised By
A. Das
Manager Calibration

*** End of the Calibration Certificate ***



Certificate No : YEA/C/230925/Y001/001
ULR No : CC23212/000013227F
Calibrated by : M. Gayan

Dated : 25.09.2023
Page 2 of 3 Pages

Calibration Results

Mechanical Calibration

A) Exactness of Balance :

Sl. No.	Standard Weights Used	Observed Reading on DUC	Overall Measurement Uncertainty of Balance (1 g)
	(g)	(g)	
1	0.100000	0.099999	0.000012
2	0.100000	0.099999	
3	0.100000	0.099999	
4	0.099997	0.099998	
5	0.100000	0.099999	
6	0.099999	0.099999	
7	0.099999	0.099999	
8	0.099999	0.099999	
9	0.100000	0.099999	
10	0.100000	0.099999	

B) Repeatability of Balance : (At Full Load)

Sl. No.	Standard Weights Used	Observed Reading on DUC	Standard Deviation (1 g)
		(g)	
1	3.050001	3.050000	0.000003
		3.050000	
		3.050000	
		3.050000	
		3.050000	
		3.050000	
		3.050000	
		3.050000	
		3.050000	
		3.050000	

C) Repeatability of Balance : (At Maximum Load)

Sl. No.	Standard Weights Used	Observed Reading on DUC	Standard Deviation (1 g)
		(g)	
1	6.000010	6.000010	0.000003
		6.000010	
		6.000010	
		6.000010	
		6.000010	
		6.000010	
		6.000010	
		6.000010	
		6.000010	
		6.000010	





Calibration Certificate

Certificate No. : YEA(C)/231216/Y001/001
 IIR No. : CC22121600017530F

Dated : 16.12.2023

Calibrated for : Young Engg. & Calibration Services Pvt. Ltd.,
 Kamardanga Road, Ichhapur,
 Howrah - 711 104.

Calibrated on: 16.12.2023	Next Calibration Due On: 16.12.2024	Page No. 1	No. of Pages 3
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Description of Instrument
 Name : Mass Comparator
 Identification : YEA - MCH / 12B - 02
 Maximum Capacity : 520 g
 Least Count : 0.00005 g upto 121 g & 0.0001 g above 121 g
 Make : Mettler Toledo (M. No. : C221102170)
 Model : XPR120C020

Service Request No. / Order Reference : 271316/Y001/001-001

Receipt of Instrument : 16.12.2023

Location where calibration performed : At Permanent Laboratory

Applicable Specification of Instrument to be Calibrated : Not Specified

Condition of Instrument to be Calibrated : Satisfactory

Basis of Calibration : Comparison method with reference to YEA/WEM-4b

Environmental Condition during Calibration : Temp. : (23±1)°C RH : (50±10)%

Equipment used for Calibration : Standard Weight Box

Traceability : To National Standard side. Certificate No. 20121038-D1.01PC-165 issued valid till 02.03.2024

Measurement Uncertainty : The figures are stated in the result at coverage factor k = 2 corresponding to confidence probability of 95% for normal distribution.

Laboratory Identification : Sucker is affixed for authentication of calibration



CC-2221

Code No. 2

WEM-4b



Certificate No. : YEA(C)/231216/Y001/001
 IIR No. : CC22121600017530F
 Calibrated By : M. Gayan

Dated : 16.12.2023
 Page 2 of 3 Pages

Calibration Results

Mechanical Calibration

A) Linearity of Balance :

Sl. No.	Standard Weights Used (g)	Observed Reading on DUC (g)	Overall Measurement Uncertainty of Balance (g)
1	0.00005	0.00005	0.00031
2	0.010005	0.010005	
3	0.020005	0.020005	
4	0.030005	0.030005	
5	0.040005	0.040005	
6	0.050005	0.050005	
7	0.060005	0.060005	
8	0.070005	0.070005	
9	0.080005	0.080005	
10	0.090005	0.090005	

B) Repeatability of Balance (At Half Load)

Sl. No.	Standard Weights Used (g)	Observed Readings (g)	Standard Deviation (g)
1	60.00005	60.00005	0.00002
		60.00005	
		60.00005	
		60.00005	
		60.00005	
		60.00005	
		60.00005	
		60.00005	
		60.00005	
		60.00005	

C) Repeatability of Balance (At Maximum Load)

Sl. No.	Standard Weights Used (g)	Observed Readings on DUC (g)	Standard Deviation (g)
1	120.00017	120.00017	0.00002
		120.00017	
		120.00017	
		120.00017	
		120.00017	
		120.00017	
		120.00017	
		120.00017	
		120.00017	
		120.00017	

D) Repeatability of Balance :

Sl. No.	Parameter	Observed Value (g)
1	Maximum difference between units & what their prices	0.00002

Code No. 2



Certificate No. : YEA(C)/231216/Y001/001
 IIR No. : CC22121600017530F
 Calibrated By : M. Gayan

Dated : 16.12.2023
 Page 3 of 3 Pages

F) Repeatability of Balance (At Half Load)

Sl. No.	Standard Weights Used (g)	Observed Readings on DUC (g)	Standard Deviation (g)
1	110.00024	110.00024	0.00002
		110.00024	
		110.00024	
		110.00024	
		110.00024	
		110.00024	
		110.00024	
		110.00024	
		110.00024	
		110.00024	

F) Repeatability of Balance (At Maximum Load)

Sl. No.	Standard Weights Used (g)	Observed Readings on DUC (g)	Standard Deviation (g)
1	220.00046	220.00046	0.00003
		220.00046	
		220.00046	
		220.00046	
		220.00046	
		220.00046	
		220.00046	
		220.00046	
		220.00046	
		220.00046	

G) Repeatability of Balance :

Sl. No.	Parameter	Observed Value (g)
1	Maximum difference between units & what their prices	0.00002

DUC : Device Under Calibration

REMARKS : The above Mass Comparator has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced under any circumstance except with prior written approval from the head of calibration laboratory.

Authorised By

A. Das
 Manager Calibration

*** End of the Calibration Certificate ***





YOUNG ENGG. & CALIBRATION SERVICES PVT. LTD.

Admn. Office & Lab : Kamaradanga Road (Opp. Tarana Ashram), Ichhapur, Howrah - 711 104

☎ : 033 2677 1411/1412, 2667 1909



YOUNG ENGG. & CALIBRATION SERVICES PVT. LTD.

Admn. Office & Lab : Kamaradanga Road (Opp. Tarana Ashram), Ichhapur, Howrah - 711 104

☎ : 033 2677 1411/1412, 2667 1909

Certificate No.: YEA(CY) 240124/Y001/001

ULR No. : CC22124000001230F

Dated : 24.01.2024

Calibration Certificate

Calibrated for : Young Engg. & Calibration Services Pvt. Ltd. Kamaradanga Road, Ichhapur, Howrah - 711 104.

Table with 4 columns: Calibrated on, Next Calibration Due On, Page No., No. of Pages

Description of Instrument Name, Identification, Make, Model / Type

Service Request No / Order Reference

Receipt of Instrument

Location where calibration performed

Applicable Specification of Instrument to be Calibrated

Condition of Instrument to be Calibrated

Basis of Calibration

Environmental Condition during Calibration

Equipment used for Calibration

Traceability

Measurement Uncertainty

Laboratory Identification

The above Instrument/Equipment/Machine has been calibrated.

The results are given in the page 2 to 4 of the certificate.



CC-2221



YOUNG ENGG. & CALIBRATION SERVICES PVT. LTD.

Admn. Office & Lab : Kamaradanga Road (Opp. Tarana Ashram), Ichhapur, Howrah - 711 104

☎ : 033 2677 1411/1412, 2667 1909



YOUNG ENGG. & CALIBRATION SERVICES PVT. LTD.

Admn. Office & Lab : Kamaradanga Road (Opp. Tarana Ashram), Ichhapur, Howrah - 711 104

☎ : 033 2677 1411/1412, 2667 1909

Certificate No.: YEA(CY) 240124/Y001/001

ULR No. : CC22124000001230F

Calibrated by : U. Goswami

Dated : 24.01.2024

Page 3 of 6 Pages

(C) DC Current :

Table with 6 columns: Sl. No., Range, Standard Value, DUC Value, Deviation, Percentage of Error, Measurement Uncertainty

(D) AC Current at 50 Hz :

Table with 6 columns: Sl. No., Range, Standard Value, DUC Value, Deviation, Percentage of Error, Measurement Uncertainty



Certificate No.: YEA(CY) 240124/Y001/001

ULR No. : CC22124000001230F

Calibrated by : U. Goswami

Dated : 24.01.2024

Page 4 of 6 Pages

(E) Resistance :

Table with 6 columns: Sl. No., Range, Standard Value, DUC Value, Deviation, Percentage of Error, Measurement Uncertainty

(F) Temperature :

Table with 6 columns: Sl. No., Parameter, Standard Value, Corresponding Standard Value, Observed DUC value, Deviation, Measurement Uncertainty





Certificate No.: YEA(C)/ 240124/001301
ULR No. : CC2212400001230F
Calibrated By : U. Goswami

Dated : 24.01.2024
Page 5 of 6 Pages

Sl. No.	Parameter	Standard Value (mV)	Corresponding Standard Value (°C)	Observed DUC value (°C)	Deviation (%)	Misstatement Uncertainty (± °C)
88	TC/R - Type	0.1177	20	20.18	0.11	0.320
89		0.6474	100	100.20	0.10	0.270
90		2.4004	300	300.11	0.11	0.410
91		2.9428	400	400.18	0.18	0.550
92		17.2719	1200	1200.42	0.42	0.720
93		20.2117	1500	1500.46	0.46	0.850
94	TC/S - Type	0.1179	20	20.19	0.19	0.320
95		0.6425	100	100.21	0.21	0.250
96		2.1210	300	300.27	0.27	0.470
97		2.1459	300	300.34	0.39	0.490
98		11.9703	1200	1200.43	0.43	0.770
99		17.0473	1500	1500.49	0.49	0.900
100	TC/N - Type	0.9222	20	22.03	3.08	0.110
101		5.7211	100	100.16	0.16	0.150
102		8.3412	150	160.21	0.71	0.170
103		16.7478	300	250.14	-2.51	0.110
104		28.4942	600	600.17	0.27	0.110
105		35.2535	1000	1000.11	0.11	0.110
106	43.2405	1200	1200.09	0.09	0.127	
Sl. No.	Parameter	Standard Value (Ω)	Corresponding Standard Value (°C)	Observed DUC value (°C)	Deviation (°C)	Measurement Uncertainty (± °C)
107	RTD/PT 100	18.53	-200	-200.029	-0.029	0.070
108		60.26	-100	-100.041	-0.041	0.070
109		100.00	0	0.016	-0.016	0.070
110		118.51	100	99.914	-9.596	0.070
111		212.05	200	200.889	0.889	0.070
112		212.71	200	200.875	-0.125	0.070

Certificate No.: YEA(C)/ 240124/001301
ULR No. : CC2212400001230F
Calibrated By : U. Goswami

Dated : 24.01.2024
Page 6 of 6 Pages

DUC : Device Under Calibration

REMARKS : The above Data Acquisition Unit has been calibrated and the readings are tabulated above. All other channels are checked immediately and the results are in line with channel 101.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced other than in full except with prior written approval from the head of calibration laboratory.

Authorised By

A. Das
Manager Calibration

*** End of the Calibration Certificate ***



cool...

Certificate No.: YEA(C)/231220/001/001
 ULR No. : CC22212300017639F
 Calibrated By : U. Goswami

Dated : 20.12.2023
 Page 2 of 6 Pages

Calibration Certificate

Certificate No.: YEA(C)/231220/001/001
 ULR No. : CC22212300017639F
 Dated : 20.12.2023

Calibrated for : Young Engg. & Calibration Services Pvt. Ltd.,
 Karmadanga Road, Ichapur,
 Howrah - 711 104.

Calibrated on	Next Calibration Due On	Page No.	No. of Pages
20.12.2023	20.12.2024	1	6

Description of Instrument
 Name : Data Acquisition Unit
 Identification : SI No. 3337016
 Make : Fluke
 Model / Type : 2638A Hydra Series III

Service Request No. / Order Reference : 231220/001/001/001

Receipt of Instrument : 20.12.2023

Location where calibration performed : AI Permanent Laboratory

Applicable Specification of Instrument to be Calibrated : Not Specified

Condition of Instrument to be Calibrated : Satisfactory

Mode of Calibration : Comparison method with reference by YEA/W/BS-01.02.01.08

Environmental Condition during Calibration : Temp. : 25.2°C RH : 50±15%

Equipment used for Calibration : Standard Multi-product Calibrator

Traceability : To National Standard via Certificate No. CRPCIA/5216461 valid till 21.07.2024

Measurement Uncertainty : The figures are stated in the result of coverage factor $k = 2$ corresponding to confidence probability of 95% for normal distribution.

Laboratory Identification : Student is allowed for authentication of calibration.

The above instrument/equipment/machine has been calibrated. The results are given in the page 2 to ... 6 ... of the certificate.

YEA/CY



CC-2221

Cont. 3

Calibration Result

Electro - Technical Calibration

Channel - 101 :

A) DC Voltage :

Sl. No.	Range	Standard Value	DUC Value	Deviation	Percentage of Error	Measurement Uncertainty (±%)
1	100 mV	0.1	0.1002	0.0002	0.2000	1.158
2		1	1.0011	0.0011	0.1100	0.1100
3		10	10.0002	0.0002	0.0020	0.0200
4		100	100.0008	0.0008	0.0080	0.0080
5		0.2	0.199992	-0.000008	-0.001600	0.0016
6	1 V	0.5	0.499995	-0.000005	-0.001000	0.0010
7		1	1.000003	0.000003	0.000300	0.0003
2		2.00017	0.00017	0.001700	0.0017	
8	10 V	1	1.000007	0.000007	0.000700	0.0007
9		10	10.00012	0.00012	0.001200	0.0012
10		100	100.00012	0.00012	0.001200	0.0012
11		22	21.99977	-0.00023	-0.001000	0.0010
12		100 V	100	99.9999	-0.0001	-0.000100
13	300 V	200	200.0001	0.0001	0.000100	0.0001
14		250	250.0001	0.0001	0.000100	0.0001
15		300	300.0001	0.0001	0.000100	0.0001

B) AC Voltage at 50 Hz :

Sl. No.	Range	Standard Value	DUC Value	Deviation	Percentage of Error	Measurement Uncertainty (±%)
17	100 mV	1	0.9996	-0.0004	-0.2400	0.720
18		10	9.9981	-0.0019	-0.1900	0.600
19		100	99.9976	-0.0024	-0.0240	0.510
20	1 V	0.1	0.999120	-0.000880	-0.088000	0.510
21		0.5	0.500156	0.000156	0.031200	0.300
22		1	1.000163	0.000163	0.016300	0.320
23	10 V	2	2.00107	0.00107	0.053500	0.420
24		5	5.00136	0.00136	0.027200	0.410
25		10	10.00418	0.00418	0.041800	0.410
26	100 V	20	19.9988	-0.0012	-0.006000	0.320
27		50	49.9976	-0.0024	-0.004800	0.300
28		100	99.9914	-0.0086	-0.008600	0.300
29	300 V	200	200.129	0.129	0.064500	0.300
30		250	250.184	0.184	0.073600	0.300
31		300	300.237	0.237	0.079000	0.300



Cont. 3

Certificate No.: YEA(C)/231220/001/001
 ULR No. : CC22212300017639F
 Calibrated By : U. Goswami

Dated : 20.12.2023
 Page 3 of 6 Pages

C) DC Current :

Sl. No.	Range	Standard Value	DUC Value	Deviation	Percentage of Error	Measurement Uncertainty (±%)
32	100 µA	10	10.0008	0.0008	0.0080	0.240
33		50	50.0020	0.0020	0.0040	0.080
34		100	100.0036	0.0036	0.0036	0.070
35	1 mA	0.1	0.100029	0.000029	0.000290	0.020
36		0.5	0.500042	0.000042	0.000840	0.020
37		1	1.000092	0.000092	0.000920	0.020
38	10 mA	2	2.00016	0.00016	0.008000	0.020
39		5	5.00032	0.00032	0.006400	0.020
40		10	10.0035	0.0035	0.007000	0.020
41	100 mA	20	19.9961	-0.0039	-0.019500	0.020
42		50	49.9922	-0.0078	-0.039000	0.020
43		100	99.9909	-0.0091	-0.045500	0.020

D) AC Current at 50 Hz :

Sl. No.	Range	Standard Value	DUC Value	Deviation	Percentage of Error	Measurement Uncertainty (±%)
44	100 µA	10	10.0073	0.0073	0.1154	0.710
45		50	50.2160	0.2160	0.3600	0.710
46		100	100.4173	0.4173	0.4173	0.360
47	1 mA	0.2	0.200760	0.000760	0.119250	0.200
48		0.5	0.501130	0.001130	0.226000	0.150
49		1	1.001948	0.001948	0.194800	0.150
50	10 mA	2	2.00464	0.00464	0.232000	0.150
51		5	5.00731	0.00731	0.146200	0.150
52		10	10.0104	0.0104	0.104000	0.150
53	100 mA	50	50.0230	0.0230	0.1150	0.070
54		50	50.0329	0.0329	0.065700	0.150
55		100	100.1373	0.1374	0.1374	0.080



Cont. 4

Certificate No.: YEA(C)/231220/001/001
 ULR No. : CC22212300017639F
 Calibrated By : U. Goswami

Dated : 20.12.2023
 Page 4 of 6 Pages

E) Resistance :

Sl. No.	Range	Standard Value	DUC Value	Deviation	Percentage of Error	Measurement Uncertainty (±%)
56	100 Ω	1	1.0012	0.0012	0.1200	0.150
57		10	10.0113	0.0113	0.1130	0.150
58		100	100.0341	0.0341	0.0341	0.080
59	1 kΩ	0.2	0.199948	-0.000052	-0.026000	0.080
60		0.5	0.499974	-0.000026	-0.005200	0.080
61		1	0.999923	-0.000077	-0.007700	0.080
62	10 kΩ	2	1.99991	-0.00009	-0.004500	0.080
63		5	4.99955	-0.00045	-0.009000	0.080
64		10	9.99917	-0.00083	-0.016600	0.080
65	100 kΩ	20	19.9986	-0.0014	-0.007000	0.080
66		50	49.9911	-0.0089	-0.044500	0.080
67		100	99.9935	-0.0065	-0.032500	0.080
68	1 MΩ	0.2	0.199951	-0.000049	-0.024750	0.080
69		0.5	0.499929	-0.000071	-0.035400	0.080
70		1	0.999973	-0.000027	-0.027000	0.080
71	10 MΩ	2	1.99997	-0.00003	-0.001500	0.080
72		5	4.999973	-0.000027	-0.005400	0.080
73		10	9.99995	-0.00005	-0.005000	0.080
74	100 MΩ	20	20.0104	0.0104	0.052000	0.080
75		50	49.9911	-0.0089	-0.044500	0.080
76		100	99.9911	-0.0089	-0.044500	0.080

F) Temperature :

Sl. No.	Parameter	Standard Value (mV)	Comparison Standard Value (°C)	Observed DUC value (°C)	Deviation (°C)	Measurement Uncertainty (±%)
77	TC / K - Type	0.390	20	20.00	0.00	0.070
78		4.296	100	100.11	0.11	0.160
79		12.305	200	200.13	0.13	0.180
80		20.644	300	300.11	0.11	0.160
81		33.273	400	400.10	0.10	0.130
82	TC / J - Type	41.276	1000	1000.19	0.19	0.120
83		48.810	1200	1200.21	0.21	0.130
84		59.819	20	20.00	0.00	0.040
85		100	100.11	0.11	0.11	0.080
86		21.919	400	400.11	0.11	0.080
87	TC / J - Type	21.167	600	600.10	0.10	0.070



Cont. 5



Certificate No. : YEA(C) 231220-Y001/001
 UIR No. : CC232123/0/001/639F
 Calibrated By : U. Goswami

Dated : 20.12.2023
 Page 5 of 6 Pages

Certificate No. : YEA(CV) 231220/Y001/001
 UIR No. : CC232123/0/001/639F
 Calibrated By : U. Goswami

Dated : 20.12.2023
 Page 6 of 6 Pages

Sl. No.	Parameter	Standard Value (mV)	Corresponding Standard Value (°C)	Observed DDC value (°C)	Deviation (°C)	Measurement Uncertainty (± °C)
88	TC/R - Type	6.1112	50	50.29	0.24	±0.20
89		6.4474	75	75.14	-0.34	±0.20
90		7.0905	100	100.40	0.40	±0.40
91		7.9408	150	150.43	0.43	±0.35
92		11.2279	200	200.41	0.41	±0.30
93	TC/S - Type	32.2112	170	170.47	0.47	±0.35
94		0.1170	25	25.34	0.24	±0.20
95		0.6419	100	100.17	0.17	±0.20
96		2.5230	200	200.17	0.17	±0.18
97		7.1400	300	300.33	0.33	±0.22
98	TC/N - Type	11.9204	150	150.44	0.44	±0.30
99		17.9073	200	200.45	0.45	±0.25
100		0.2332	25	25.11	-0.11	±0.15
101		0.7981	100	100.52	0.52	±0.18
102		0.7412	100	100.15	0.15	±0.20
103	16.7472	300	300.12	-0.12	±0.18	
104	36.4045	400	400.21	0.21	±0.18	
105	76.3358	1000	1000.32	0.32	±0.16	
106	438.453	1200	1200.32	0.32	±0.12	
Sl. No.	Parameter	Standard Value (Ω)	Corresponding Standard Value (°C)	Observed DDC value (°C)	Deviation (°C)	Measurement Uncertainty (± °C)
107	RTD:Pt100	18.52	-200	-200.075	-0.075	±0.075
108		66.76	-100	-100.074	-0.074	±0.074
109		100.00	0	0.001	0.001	±0.075
110		334.24	100	99.453	-0.547	±0.545
111		312.05	200	200.410	0.410	±0.558
112	311.71	400	399.339	-0.661	±0.570	

cont...6



DLC : Device Under Calibration

REMARKS : The above Data Acquisition Unit has been calibrated and the readings are calculated above. All other elements are checked informally and the results are in line with control 191.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, either then or in full except with prior written approval from the head of calibration laboratory.

Authorized By

 A. Das
 Manager Calibration



*** End of the Calibration Certificate ***



YEA

☎ : 033 2677 1411/1412, 2667 1909

YOUNG ENGG. & CALIBRATION SERVICES PVT. LTD.

Admn. Office & Lab : Kamardanga Road (Opp. Tarama Ashram), Ichapur, Howrah - 711 104

E-mail : calibration@yeagroup.org ★ Visit us at : www.yeagroup.org

CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 240108/Y001/004

Dated : 08.01.2024

ULR No. : CC22212400000333F

Calibrated for : Young Engg & Calibration Services Pvt. Ltd.

Kamardanga Road, Ichapur,
Howrah - 711 104.

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
08.01.2024	08.01.2025	1	2

Description of Instrument

Name : Digital Tachometer
Identification : YEA / MECH / TM / 01
Range : 2.0 to 99999 rpm
Least Count : 0.1 rpm
Make : Line Seiki (Sl. No. : 204 - 0086V)
Model : TM - 5010
Type : Non Contact & Contact



CC-2221

Service Request No. / Order Reference

: 240108/Y001/001-004

Receipt of Instrument

: 08.01.2024

Location where calibration performed

: At permanent laboratory

Applicable Specification of Instrument to be Calibrated

: Not Specified

Condition of Instrument to be Calibrated

: Satisfactory

Basis of Calibration

: Comparison method with reference to YEA/WI/M-44

Environmental Condition during Calibration

: *Temp.* : 25±2°C *RH* : 50±15%

Equipment used for Calibration

: Standard Digital Tachometer

Traceability

: To National Standard vide Certificate No:
HT/CC/230301-06/001 valid till 08.03.2024 &
HT/CC/230523-08/001 valid till 22.05.2024

Measurement Uncertainty

: The figures are stated in the result at coverage factor
 $k = 2$ corresponding to confidence probability of
95% for normal distribution.

Laboratory Identification

: Sticker is affixed for authentication of calibration.

The above Instrument/Equipment/Machine has been calibrated and the results are given in the page 2 to 2 ...of the certificate.



Cont.....2





YEA

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: YEA(C)/ 240108/Y001/004

ULR No. : CC222124000000333F

Calibrated By : P. Samanta

Date: 08.01.2024

Page 2 of 2 Pages

Calibration Results

Mechanical Calibration

Calibration Results of Digital Tachometer (Non Contact) :

Sl. No.	DUC Value	Observed Standard Value	Measurement Uncertainty
	rpm	rpm	± rpm
1	6.2	6.1	0.70
2	100.2	100.1	2.92
3	499.7	499.9	2.92
4	999.3	999.7	5.84
5	5998.8	5999.3	35.00
6	8498.9	8499.8	50.00
7	24998.5	24999.5	145.00
8	49998.4	49999.2	519.73
9	89997.8	89998.8	519.73

Calibration Results of Digital Tachometer (Contact) :

Sl. No.	DUC Value	Observed Standard Value	Measurement Uncertainty
	rpm	rpm	± rpm
1	10.2	10.1	0.68
2	100.3	100.2	2.95
3	499.8	499.7	2.95
4	999.8	999.9	5.87
5	5999.5	5999.6	34.84

DUC : Device Under Calibration

REMARKS : The above Digital Tachometer has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By

A. Das

Manager Calibration

*** End of the Calibration Certificate ***





YEA

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Calibration Certificate

Certificate No.: YEA(C)/ 240111/Y001/002

Dated: 12.01.2024

ULR No. : CC222124000000592F

Calibrated for : **Young Engg & Calibration Services Pvt. Ltd.**

Kamardanga Road, Ichapur,
Howrah - 711 104.

Calibrated on.	Next Calibration Due On.	Page No.	No. of Pages
11.01.2024	11.01.2025	1	2

Description of Instrument

Name : RTD Sensor
Identification : YEA / THM / RTD - 17
Make : Tempsens(SL No. : 894)
Model / Type : PT 100

Service Request No. / Order Reference

: 240111/Y001/001-010

Receipt of Instrument

: 11.01.2024

Location where calibration performed

: At permanent laboratory

Applicable Specification of Instrument to be Calibrated

: Not Specified

Condition of Instrument to be Calibrated

: Satisfactory

Basis of Calibration

: Comparison method with reference to YEA/WI/T-03

Environmental Condition during Calibration

: *Temp.* : 25±4°C *RH* : 30 to 75%

Equipment used for Calibration

: Standard Precision Thermometer with Miliskanner & Standard SPRT

Traceability

: To National Standard vide Certificate No:
CC/ECL/1467/22-23 valid till 07.02.2024
22111168/D1.03/C-193 valid till 30.01.2024

Measurement Uncertainty

: The figures are stated in the result at coverage factor
 $k= 2$ corresponding to confidence probability of
95% for normal distribution.

Laboratory Identification

: Sticker is affixed for authentication of calibration.

The above Instrument/Equipment/Machine has been calibrated .
The results are given in the page 2 to 2 ...of the certificate.


Cont.....2





YEA

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: YEA(C)/ 240111/Y001/002

ULR No. : CC222124000000592F

Calibrated By : K. Rout

Date: 12.01.2024

Page 2 of 2 Pages

Calibration Results

Thermal Calibration

Calibration Results of RTD Sensor :

Sl. No.	Average DUC Value		Average Standard Value	Measurement Uncertainty
	(Ω)	(°C)	(°C)	(± °C)
1	20.251	-196.00	-195.6721	0.10
2	68.394	-79.84	-79.5907	0.11
3	100.062	0.16	0.2134	0.11
4	138.519	100.02	100.2713	0.26
5	175.862	200.01	200.3941	0.26
6	211.839	299.40	299.8513	0.27
7	229.450	349.23	349.7640	0.27

Temperature Scale : ITS - 90

DUC : Device Under Calibration

REMARKS : The above RTD Sensor has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By

A. Das

Manager Calibration

*** End of the Calibration Certificate ***





YEA

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E-mail : calibration@yeagroup.org ★ Visit us at : www.yeagroup.org

CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Calibration Certificate

Certificate No.: YEA(C)/ 240111/Y001/009

Dated: 12.01.2024

ULR No. : CC22212400000599F

Calibrated for : **Young Engg & Calibration Services Pvt. Ltd.**
Kamardanga Road, Ichapur,
Howrah - 711 104.

Calibrated on.	Next Calibration Due Or.	Page No.	No. of Pages
12.01.2024	12.01.2025	1	2

Description of Instrument

Name : RTD Sensor
Identification : YEA / THM / RTD - 24
Make : Tempsens(Sl. No. : 901)
Model / Type : PT 100

Service Request No. / Order Reference : 240111/Y001/001-010

Receipt of Instrument : 11.01.2024

Location where calibration performed : At permanent laboratory

Applicable Specification of Instrument to be Calibrated : Not Specified

Condition of Instrument to be Calibrated : Satisfactory

Basis of Calibration : Comparison method with reference to YEA/WI/T-03

Environmental Condition during Calibration : *Temp.* : 25±4°C *RH* : 30 to 75%

Equipment used for Callbration : Standard Precision Thermometer with Miliskanner & Standard SPRT

Traceability : To National Standard vide Certificate No:
CC/ECL/1467/22-23 valid till 07.02.2024
22111168/D1.03/C-193 valid till 30.01.2024

Measurement Uncertainty : The figures are stated in the result at coverage factor
 $k= 2$ corresponding to confidence probability of
95% for normal distribution.

Laboratory Identification : Sticker is affixed for authentication of calibration.

The above Instrument/Equipment/Machine has been calibrated .
The results are given in the page 2 to 2 ...of the certificate.

Cent.....2

YEA(C)/F-08





YEA

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CIN : U74140WB2005PTC106389 ★ Toll Free Help Desk : 1800 345 9001

Certificate No.: YEA(C)/ 240111/Y001/009

ULR No. : CC22212400000599F

Calibrated By : K. Rout

Date: 12.01.2024

Page 2 of 2 Pages

Calibration Results

Thermal Calibration

Calibration Results of RTD Sensor :

Sl. No.	Average DUC Value		Average Standard Value	Measurement Uncertainty
	(Ω)	(°C)	(°C)	(±°C)
1	20.259	-195.98	-195.6315	0.10
2	68.380	-79.88	-79.5849	0.11
3	99.981	-0.05	0.2102	0.11
4	138.528	100.05	100.2141	0.26
5	175.910	200.14	200.3635	0.26
6	211.883	299.52	299.8197	0.27
7	229.405	349.10	349.5214	0.27

Temperature Scale : ITS - 90

DUC : Device Under Calibration

REMARKS : The above RTD Sensor has been calibrated and the readings are tabulated above.

NOTES : This certificate refers to the results tabulated at the time of calibration only for the above mentioned item submitted for calibration and this should not be reproduced, other than in full except with prior written approval from the head of calibration laboratory.

Authorised By

A. Das
Manager Calibration

*** End of the Calibration Certificate ***





TRANSASIA[®]
No.1 Diagnostic Company in India

TRANSASIA

EM- 200

SR. NO 2002796

FULLY AUTOMATIC BIOCHEMISTRY ANALYZER

IQ&OQ

For

PASTURE INSTITUTE, SHILLONG

Marketed by:
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Andheri (E),
MUMBAI - 400 072



H.O. address: Transasia House, 8 Chandivali Studio Road, Andheri (E), Mumbai – 440072 India
Tel. : +91 22 4030 9000

Operational Qualification:

System Certification:

Study data has determined that the System described in this document either meets all criteria outlined in this Operational Protocol, or exceptional conditions have been identified and documentation included.

Exceptional conditions, if any, have been addressed.

The System is ready for specific usage.

Protocol Performed By: TBM, Guwahati

Name: Mr. Taraknath Chakraborty

Designation: Regional Service Manager

Customer Authorization: Pasteur Institute, Shillong

Name:

Designation:

Company Representative Name & Sign

Customer Name & Sign

Mr. Taraknath Chakraborty

Regional Service Manager

Date: 4-03-2022

Date: 4-03-2022



Installation Qualification for EM-200, Sr. No.:- 2002796

Customer Name : Pasteur Institute, Shillong
Address : Near Polobazar, East Khasihills.Shillong,
Meghalaya - 793001
Instrument Name : EM-200
Serial Number : 2002796

Initial Inspection of the unit carried out and the details are as follows:

System Condition Report:

Found the System to have been delivered in satisfactory condition and no external physical damaged observed on the same. Package was kept in Good Condition as per the directional indicators like not tilt, indicating the System has not been subjected to mechanical shocks or stored in any manner, so as to cause any damage to the same.

Found all the required accessories as required.

Installation Procedure & Checklist Attached for records.

External Requirements for Installation:

1. Input voltage of 220V-240V / 50Hz or 60Hz.
2. Recommended Operating Temperature is 15-30 °C, with Relative Humidity 30-85% and Atmospheric Pressure 70-106 kPa.

H.O. address: Transasia House, 8 Chandivali Studio Road, Andheri (E), Mumbai – 440072 India
Tel. : +91 22 4030 9000



Installation Certificate for EM-200, Sr. No.:- 2002796

This is to certify that the instrument EM-200 Sr. No.:- 2002796 is successfully Installed and Commissioned at Pacific Health Diagnostic Centre, Worli, Mumbai and the Installation Protocol / checklist has been successfully completed for the above instrument.

Date of Installation: 03-03-2022

TBM, Technical Services Department

Name : Mr. Taraknath Chakraborty

Designation : Regional service Manager



H.O. address: Transasia House, 8 Chandivali Studio Road, Andheri (E), Mumbai – 440072 India
Tel. : +91 22 4030 9000

Installation Qualifications for EM-200, Sr. No.:- 2002796

Carried out all the Installation Procedures as per the Installation Procedure & Checklists.

Carried out all the necessary checks and alignments.

Carried out all the necessary system checks and tests.

Carried out Priming and Cleaning Operations

Checked the results by running the controls and found OK.

Handed over the Instrument for Operators Training & Qualifications

For TBM, Technical Services Department

Name : Mr. Taraknath Chakraborty
Designation : Regional Service Manager



Installation Qualification for EM-200, Sr. No.:- 2002796

Customer Name : Pasteur Institute, Shillong
Address : Near Polobazar, East Khasihills. Shillong,
Meghalaya – 793001
Contact Person :
Instrument Model : EM-200
Serial Number : 2002796
Date of Installation : 3-03-2022

The instrument was installed and was found to be working satisfactorily. Preliminary Customer Training was provided and standardization of the parameters were done. The results were found to be within the expected range and System found to be working satisfactorily.

Technical Services Department
Centre, Guwahati

CUSTOMER : **Pasteur Institute, Shillong**

Name : Taraknath Chakraborty

Contact Person :

Designation : Regional Service Manager

Designation :

Signature :

Signature :



Instrument Setup

1. Assembled the instrument accessories.
2. Removed the Shipping Clamps
3. Connected the Sampler
4. Set the Reagent Tubings
5. Connected the Reagents
6. Connected the waste Tank
7. Connected the Waste Tubings
8. Connected the Power Cord and Connection Cord.
9. Connected the External Printer
10. Perform the setting sequence

Operational Inspection

1. Checked and found Mechanical Movements OK
2. Checked and found Hydraulics OK.
3. Checked and found Electricals OK.
4. Checked with controls and samples ,results are found OK.

TBM, Technical Services Department

Name : Mr. Taraknath Chakraborty

Designation : Regional Service Manager



Operations Qualifications for EM-200, Sr. No.:- 2002796

1. Verified all the Mechanical Movements : Done
2. Verified Hydraulics. : Done
3. Verified Electrical Systems : Done
4. Verified with Controls : Done

TBM, Technical Services Department

Name : Mr. Taraknath Chakraborty

Designation : Regional Service Manager

Date : 4-03-2022



Performance Qualifications for EM-200, Sr. No.:- 2002796

1. **CONTROLS:** - Run QC Erba Normal and High of all the parameters, found within acceptable limit.
2. **PRECISION CHECK:** - Run the precision of three the parameters, calculate mean, CV% and SD, found within range.

System Certification:

Study data has determined that the System described in this document either meets the necessary criteria outlined in this Performance Qualification Protocol, or exceptional conditions have been identified and documentation included.

The System is ready for specific usage.

Protocol Performed By:

Name : Mr.Taraknath Chakraborty

Designation : Regional Service Manager

PERFORMANCE QUALIFICATION DONE BY

Name :

Designation :

H.O. address: Transasia House, 8 Chandivali Studio Road, Andheri (E), Mumbai – 440072 India
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