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# NATIONAL CENTRE FOR QUALITY CALIBRATION

4, Abhishree Corporate Park, Nr. Swagat Bangalows BRTS, Iskcon-Ambli Road, Ambli, Ahmedabad-380 058  
Ph. +91-79-29795322, 29795323 • Fax : +91-79-29795323, Cell No. +91-9327017517, +91-9328616370  
E-mail : ncqc@calibrationlaboratory.in, • calibrationlab.ncqc@gmail.com  
Visit our Web Site : www.calibrationlaboratory.in



Precision Calibration with National / International Traceability for Temperature, Dimensional, Pressure, Vacuum, Time, Mass, Electrical, Noise, Airflow, Lux & all Special Purpose Instruments in all ranges.

Calibration Certificate				F/CR/E/001/05 Issue No.02		
<b>Name of Customer</b> National Centre for Quality Calibration 4, Abhishree Corporate Park, Nr. Swagat Bungalows BRTS, Iskcon – Ambli Road, Ambli, Ahmedabad – 380 058, Gujarat		Certificate No. Date of Issue Date of Calibration Suggested Due Date Date of Receipt / Ref.No.:	NCQC-E/140323/001 14/03/2023 14/03/2023 13/03/2024 13/03/2023			
ULR No. : CC21282300000981F		Discipline : Electro-Technical Calibration Alternating Current & Direct Current, Temp. Simulation				
<b>Details of Observation of Unit Under Calibration</b>		Identification No. : NCQC/E-21 Serial No. : 18050184 Name of Instrument : Universal Calibrator				
Range Resolution Make / Model Location	As per Table As per Manual Masibus/UC-12 Laboratory		Initial Error Visual Inspection Accuracy	Nil Satisfactory As per Manual		
Loc. of Calibration Environment Cond. Actual Env. Cond.	At Laboratory 25 ± 4 °C, 30 to 75% Rh 25.3 °C 46.0 %Rh		Std. Ref. Used Cali.Method No.	Euramet CG_11 & 15 NCQC/CM/E/001, 002, 003, 004, 005, 007, 009, 014, 015, 016, 017 & 018		
Master Instruments Detail						
NCQC SYS.NO.	Nomenclature	Make/ Model	Id / Serial No.	Traceable To	Certificate No.	Valid Upto
260	Multi-Product Calibrator	Fluke / 5522A	NCQC/E-01/ 3043901	CC-2634	M-230228-3-1	03/03/2024
43	6 ½ Digital Multimeter	Fluke / 8846A	NCQC/E-04 / 1086005	CC-2634	M-221223-15-1/A	26/12/2023
<div style="display: flex; justify-content: space-around; align-items: center;"> <div style="border: 1px solid black; padding: 5px;">NCQC System Certificate No. 296</div> <div style="border: 1px solid black; padding: 5px; text-align: center;">           NCQC Valid up to 13-03-2024 Reviewed <i>[Signature]</i> </div> </div>						
Traceable To National / International Standards.						
Calibrated By <i>[Signature]</i>		Damini Rathod Calibration Engineer		Reviewed & Approved By <i>[Signature]</i>		Hitesh Limbachiya Calibration Incharge

NCQC DEFINES CALIBRATION AS "PRECISION AND RELIABILITY OF INSTRUMENTS FOR YOUR BETTER TOMORROW"

NCQC System Certificate No. 296

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CC-2128

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**Calibration Certificate**

F/CR/E/001/05 Issue No.02

<b>Name of Customer</b> National Centre for Quality Calibration 4, Abhishree Corporate Park, Nr. Swagat Bangalows BRTS, Iskcon – Ambli Road, Ambli, Ahmedabad – 380 058, Gujarat		Certificate No. 14/03/2023	NCQC-E/140323/001
ULR No. : CC21282300000981F		Date of Issue	14/03/2023
Discipline : Electro-Technical Calibration Alternating Current & Direct Current, Temp. Simulation		Date of Calibration	14/03/2023
Details of Observation of Unit Under Calibration		Suggested Due Date	13/03/2024
Identification No. : NCQC/E-21		Date of Receipt / Ref.No.: 13/03/2023	
Serial No. : 18050184			
Name of Instrument : Universal Calibrator			

**Specification of UUC**

Parameter	Range
mV (Source / Measure)	-10 to 250 mV
mV (Source / Measure)	-10 to 80 mV
V (Source / Measure)	0 to 12 V / 0 to 30 V
mA (Source / Measure)	0 to 24 mA
Frequency (Source)	10000 Hz
Frequency (Measure)	50000 Hz
Resistance (Measure)	0 to 1600Ω / 1600 to 4000Ω
Resistance (Source)	0 to 400Ω / 0 to 4000Ω
J type T/C (Source/Measure)	-200 to 1200 °C
K type T/C (Source/Measure)	-200 to 1372 °C
N type T/C (Source/Measure)	-200 to 1300 °C
R type T/C (Source/Measure)	0 to 1750 °C
S type T/C (Source/Measure)	0 to 1750 °C
B type T/C (Source/Measure)	450 to 1800 °C
E type T/C (Source/Measure)	-200 to 1000 °C
T type T/C (Source/Measure)	-200 to 400 °C
Pt 100 (Source/Measure)	-200 to 850 °C

Traceable To National / International Standards.

Calibrated By <i>Damini Rathod</i>	Damini Rathod Calibration Engineer	Reviewed & Approved By <i>Hitesh Limbachiya</i>	Hitesh Limbachiya Calibration Incharge
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	<b>Date of Issue</b> 14/03/2023	
	<b>Date of Calibration</b> 14/03/2023	
	<b>Suggested Due Date</b> 13/03/2024	
<b>ULR No. : CC21282300000981F</b>		<b>Date of Receipt / Ref.No.:</b> 13/03/2023

**Discipline :** Electro-Technical Calibration  
 Alternating Current & Direct Current, Temp. Simulation

**Details of Observation of Unit Under Calibration**  
 Identification No. : NCQC/E-21  
 Serial No. : 18050184  
 Name of Instrument : Universal Calibrator

**Calibration Results of DCV Source**

Input Given by UUC	Unit Uncertainty (k=2) ±	Reading Observed by Master Instrument	Absolute Error	Expanded Uncertainty in % (k=2) ±
1.00	mV 0.002	0.9998	0.0002	0.709
50.00	mV 0.005	49.9993	0.0007	0.046
100.00	mV 0.010	99.9988	0.0012	0.046
150.00	mV 0.015	149.999	0.001	0.046
200.00	mV 0.020	199.997	0.003	0.046
250.00	mV 0.025	249.995	0.005	0.046
1.000	V 0.00032	1.000032	0.000032	0.059
2.000	V 0.00064	2.00009	0.00009	0.031
4.000	V 0.00128	4.00022	0.00022	0.018
8.000	V 0.00256	8.00041	0.00041	0.012
12.000	V 0.00384	12.0005	0.0005	0.015
1.000	mV 0.416	0.9997	0.0003	0.416
20.000	mV 0.046	19.9996	0.0004	0.046
40.000	mV 0.046	39.9995	0.0005	0.046
60.000	mV 0.046	59.9992	0.0008	0.046
80.000	mV 0.046	79.9989	0.0011	0.046

**Calibration Results of DCA Source**

Input Given by UUC	Unit Uncertainty (k=2) ±	Reading Observed by Master Instrument	Absolute Error	Expanded Uncertainty in % (k=2) ±
1.000	mA 0.087	1.000038	0.000038	0.087
5.000	mA 0.105	5.00022	0.00022	0.105
10.000	mA 0.082	10.00051	0.00051	0.082
20.000	mA 0.087	20.0006	0.0006	0.087
24.000	mA 0.083	24.0012	0.0012	0.083

Traceable To National / International Standards.

**Calibrated By** *Damini Rathod* **Reviewed & Approved By** *Hitesh Limbachiya*  
 Damini Rathod  
 Calibration Engineer  
 Hitesh Limbachiya  
 Calibration Incharge

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<b>Details of Observation of Unit Under Calibration</b>		<b>Identification No. :</b> NCQC/E-21 <b>Serial No. :</b> 18050184 <b>Name of Instrument :</b> Universal Calibrator		
Calibration Results of Resistance Source				
Input Given by UUC	Unit	Reading Observed by Master Instrument	Absolute Error	Expanded Uncertainty in % (k=2) ±
1.00	ohm	0.99989	0.00011	0.680
100.00	ohm	100.0006	0.0006	0.025
500.00	ohm	500.002	0.002	0.025
1000.0	ohm	1000.004	0.004	0.025
2000.0	ohm	2000.01	0.01	0.025
3000.0	ohm	3000.02	0.02	0.025
4000.0	ohm	4000.05	0.05	0.025
Calibration Results of Frequency Source				
Input Given by UUC	Unit	Reading Observed by Master Instrument	Absolute Error	Expanded Uncertainty in % (k=2) ±
10.0000	Hz	9.99991	0.00009	0.134
50.0000	Hz	49.9995	0.0005	0.131
500.000	Hz	499.998	0.002	0.131
1000.00	Hz	999.995	0.005	0.131
5000.00	Hz	4999.86	0.14	0.131
10000.0	Hz	9999.77	0.23	0.131
<b>Traceable To National / International Standards.</b>				
<b>Calibrated By</b> Damini Rathod Calibration Engineer		<b>Reviewed &amp; Approved By</b> Hitesh Limbachiya Calibration Incharge		

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<b>Details of Observation of Unit Under Calibration</b>	<b>Identification No. :</b> NCQC/E-21 <b>Serial No. :</b> 18050184 <b>Name of Instrument :</b> Universal Calibrator		

### Calibration Results of Temperature Source

Type	Input Given by UUC in °C	Reading Observed by Master Instrument in °C	Absolute Error in °C	Expanded Uncertainty in °C (k=2) ±
J	-200.0	-199.96	0.04	0.370
J	0.0	-0.02	0.02	0.370
J	400.0	400.08	0.08	0.370
J	800.0	800.12	0.12	0.370
J	1200.0	1200.16	0.16	0.370
K	-200.0	-199.95	0.05	0.520
K	0.0	0.02	0.02	0.520
K	400.0	400.08	0.08	0.520
K	800.0	800.15	0.15	0.520
K	1300.0	1300.17	0.17	0.520
N	-200.0	-199.97	0.03	0.530
N	0.0	-0.02	0.02	0.530
N	400.0	400.05	0.05	0.530
N	800.0	800.06	0.06	0.530
N	1300.0	1300.11	0.11	0.530
R	100.0	100.03	0.03	0.668
R	500.0	500.05	0.05	0.650
R	1000.0	1000.13	0.13	0.650
R	1500.0	1500.16	0.16	0.650
R	1750.0	1750.22	0.22	0.650
S	100.0	100.05	0.05	0.590
S	500.0	500.07	0.07	0.590
S	1000.0	1000.06	0.06	0.590
S	1500.0	1500.11	0.11	0.590
S	1750.0	1750.17	0.17	0.590
B	600.0	600.10	0.10	0.540
B	1000.0	1000.16	0.16	0.540
B	1200.0	1200.16	0.16	0.540
B	1500.0	1500.20	0.20	0.540
B	1800.0	1800.24	0.24	0.540

### Traceable To National / International Standards.

<b>Calibrated By</b> <i>Damini Rathod</i>	<b>Damini Rathod</b> Calibration Engineer	<b>Reviewed &amp; Approved By</b> <i>Hitesh Limbachiya</i>	<b>Hitesh Limbachiya</b> Calibration Incharge
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 Alternating Current & Direct Current, Temp. Simulation

<b>Details of Observation of Unit Under Calibration</b>	Identification No. : NCQC/E-21 Serial No. : 18050184 Name of Instrument : Universal Calibrator
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**Calibration Results of Temperature Source**

Type	Input Given by UUC in °C	Reading Observed by Master Instrument in °C	Absolute Error in °C	Expanded Uncertainty in °C (k=2) ±
E	-200.0	-199.95	0.05	0.630
E	0.0	-0.02	0.02	0.630
E	100.0	100.02	0.02	0.630
E	500.0	500.06	0.06	0.630
E	1000.0	1000.12	0.12	0.630
T	-200.0	-199.99	0.01	0.750
T	0.0	0.03	0.03	0.750
T	100.0	100.03	0.03	0.750
T	200.0	200.09	0.09	0.750
T	400.0	400.13	0.13	0.750
Pt-100	-200.00	-200.009	0.009	0.280
Pt-100	0.00	0.012	0.012	0.280
Pt-100	25.00	25.017	0.017	0.280
Pt-100	50.00	50.031	0.031	0.280
Pt-100	100.00	100.051	0.051	0.280
Pt-100	200.00	200.076	0.076	0.287
Pt-100	400.00	400.079	0.079	0.300
Pt-100	800.00	800.093	0.093	0.307

Traceable To National / International Standards.

Calibrated By <i>Damini Rathod</i> Damini Rathod Calibration Engineer	Reviewed & Approved By Hitesh Limbachiya Calibration Incharge
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	<b>Serial No.</b> : 18050184
	<b>Name of Instrument</b> : Universal Calibrator

### Calibration Results of DCV Measure

Input Given by Reference Instrument	Unit	Reading Observed by UUC	Absolute Error	Expanded Uncertainty in % (k=2) ±
0.1000	mV	0.10	0.00	5.890
50.0000	mV	49.99	0.01	1.980
100.0000	mV	99.98	0.02	1.980
150.0000	mV	149.97	0.03	1.980
200.0000	mV	199.95	0.05	0.010
250.0000	mV	249.93	0.07	0.010
0.100000	V	0.100	0.000	0.577
1.000000	V	0.998	0.002	0.071
10.00000	V	9.997	0.003	0.012
20.00000	V	19.995	0.005	0.010
30.00000	V	29.993	0.007	0.010
0.1000	mV	0.100	0.000	1.980
20.0000	mV	20.003	0.003	1.980
40.0000	mV	40.005	0.005	1.980
60.0000	mV	60.007	0.007	1.980
80.0000	mV	80.009	0.009	1.980

### Calibration Results of DCA Measure

Input Given by Reference Instrument	Unit	Reading Observed by UUC	Absolute Error	Expanded Uncertainty in % (k=2) ±
1.000000	mA	1.000	0.000	0.079
5.000000	mA	5.001	0.001	0.025
10.00000	mA	10.002	0.002	0.019
20.00000	mA	20.003	0.003	0.018
24.00000	mA	24.005	0.005	0.018

Traceable To National / International Standards.

Calibrated By <i>Damini Rathod</i>	Damini Rathod Calibration Engineer	Reviewed & Approved By <i>Hitesh Limbachiya</i>	Hitesh Limbachiya Calibration Incharge
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### Calibration Results of Resistance Measure

Input Given by Reference Instrument	Unit	Reading Observed by UUC	Absolute Error	Expanded Uncertainty in % (k=2) ±
1.0000	ohm	1.00	0.00	0.757
100.0000	ohm	99.99	0.01	0.140
500.0000	ohm	500.01	0.01	0.010
1000.0000	ohm	1000.02	0.02	0.010
2000.0000	ohm	2000.0	0.0	0.011
3000.0000	ohm	3000.1	0.1	0.010
4000.00	ohm	4000.2	0.2	0.010

### Calibration Results of Frequency Measure

Input Given by Reference Instrument	Unit	Reading Observed by UUC	Absolute Error	Expanded Uncertainty in % (k=2) ±
10.00	Hz	9.9998	0.0002	0.059
100.0	Hz	99.999	0.001	0.014
1000	Hz	999.99	0.01	0.014
5000	Hz	4999.8	0.2	0.014
10000	Hz	9999.9	0.1	0.014
50000	Hz	49999	1	0.009

Traceable To National / International Standards.

<b>Calibrated By</b> 	Damini Rathod Calibration Engineer	<b>Reviewed &amp; Approved By</b> 	Hitesh Limbachiya Calibration Incharge
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NCQC DEFINES CALIBRATION AS "PRECISION AND RELIABILITY OF INSTRUMENTS FOR YOUR BETTER TOMORROW"





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# NATIONAL CENTRE FOR QUALITY CALIBRATION

4, Abhishree Corporate Park, Nr. Swagat Bangalows BRTS, Iskcon-Ambli Road, Ambli, Ahmedabad-380 058  
Ph. +91-79-29795322, 29795323 • Fax : +91-79-29795323, Cell No. +91-9327017517, +91-9328616370  
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Precision Calibration with National / International Traceability for Temperature, Dimensional, Pressure, Vacuum, Time, Mass, Electrical, Noise, Airflow, Lux & all Special Purpose Instruments in all ranges.

## Calibration Certificate

F/CR/E/001/05 Issue No.02

<b>Name of Customer</b> National Centre for Quality Calibration 4, Abhishree Corporate Park, Nr. Swagat Bungalows BRTS, Iskcon – Ambli Road, Ambli, Ahmedabad – 380 058, Gujarat		<b>Certificate No.</b> 14/03/2023	NCQC-E/140323/001
		<b>Date of Issue</b> 14/03/2023	
		<b>Date of Calibration</b> 14/03/2023	
		<b>Suggested Due Date</b> 13/03/2024	
		<b>Date of Receipt / Ref.No.:</b> 13/03/2023	

**ULR No. :** CC21282300000981F      **Discipline :** Electro-Technical Calibration  
Alternating Current & Direct Current, Temp. Simulation

**Details of Observation of Unit Under Calibration**

**Identification No. :** NCQC/E-21  
**Serial No. :** 18050184  
**Name of Instrument :** Universal Calibrator

### Calibration Results of Temperature Measure

Type	Input Given by Reference Instrument in °C	Reading Observed by UUC in °C	Absolute Error in °C	Expanded Uncertainty in °C (k=2) ±
J	-200.00	-199.8	0.2	0.378
J	0.00	0.3	0.3	0.330
J	400.00	399.7	0.3	0.337
J	800.00	800.3	0.3	0.360
J	1200.00	1200.3	0.3	0.380
K	-200.00	-200.6	0.6	0.500
K	0.00	0.1	0.1	0.500
K	200.00	199.8	0.2	0.500
K	800.00	799.8	0.2	0.500
K	1300.00	1299.7	0.3	0.500
N	-200.00	-200.4	0.4	0.526
N	0.00	0.1	0.1	0.500
N	200.00	200.2	0.2	0.500
N	800.00	799.8	0.2	0.500
N	1300.00	1299.7	0.3	0.500
R	100.00	100.1	0.1	0.700
R	500.00	500.0	0.0	0.700
R	1000.00	1000.2	0.2	0.700
R	1500.00	1499.8	0.2	0.700
R	1750.00	1750.2	0.2	0.700
S	100.00	99.7	0.3	0.570
S	500.00	499.6	0.4	0.570
S	1000.00	999.7	0.3	0.570
S	1500.00	1499.6	0.4	0.570
S	1750.00	1750.4	0.4	0.579

Traceable To National / International Standards.

<b>Calibrated By</b> <i>Damini Rathod</i>	<b>Damini Rathod</b> Calibration Engineer	<b>Reviewed &amp; Approved By</b> <i>Hitesh Limbachiya</i>	<b>Hitesh Limbachiya</b> Calibration Incharge
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E-mail : ncqc@calibrationlaboratory.in, • calibrationlab.ncqc@gmail.com

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## Calibration Certificate

F/CR/E/00 /05 Issue No.02

<b>Name of Customer</b> <b>National Centre for Quality Calibration</b> 4, Abhishree Corporate Park, Nr. Swagat Bungalows BRTS, Iskcon – Ambli Road, Ambli, Ahmedabad – 380 058, Gujarat	<b>Certificate No.</b> NCQC-E/140323/001
	<b>Date of Issue</b> 14/03/2023
	<b>Date of Calibration</b> 14/03/2023
	<b>Suggested Due Date</b> 13/03/2024
<b>Date of Receipt / Ref.No.:</b> 13/03/2023	

<b>ULR No. :</b> CC21282300000981F	<b>Discipline :</b> Electro-Technical Calibration Alternating Current & Direct Current, Temp. Simulation
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<b>Details of Observation of Unit Under Calibration</b>	<b>Identification No. :</b> NCQC/E-21
	<b>Serial No. :</b> 18050184
	<b>Name of Instrument :</b> Universal Calibrator

Type	Input Given by Reference Instrument in °C	Reading Observed by UUC in °C	Absolute Error in °C	Expanded Uncertainty in °C (k=2) ±
B	600.00	600.3	0.3	0.568
B	1000.00	1000.3	0.3	0.621
B	1200.00	1200.4	0.4	0.530
B	1500.00	1500.2	0.2	0.631
B	1800.00	1800.5	0.5	0.533
E	-200.00	-200.3	0.3	0.674
E	0.00	0.1	0.1	0.600
E	100.00	99.9	0.1	0.600
E	500.00	499.8	0.2	0.600
E	1000.00	1000.2	0.2	0.600
T	-200.00	-200.4	0.4	0.770
T	0.00	-0.1	0.1	0.740
T	100.00	99.8	0.2	0.740
T	200.00	199.7	0.3	0.740
T	400.00	399.6	0.4	0.740
Pt-100	-190.000	-190.02	0.02	0.300
Pt-100	0.000	0.05	0.05	0.300
Pt-100	25.000	25.05	0.05	0.300
Pt-100	50.000	50.03	0.03	0.300
Pt-100	100.000	100.09	0.09	0.300
Pt-100	200.000	200.13	0.13	0.300
Pt-100	400.000	400.12	0.12	0.300
Pt-100	600.000	600.4	0.4	0.300
Pt-100	800.000	800.7	0.7	0.300

**Remarks:**

- Averages of minimum five readings are reported.
- Suggested due date is given based on customer requirements
- Condition of instrument found satisfactory during receipt.
- These results are obtained at the time of calibration.
- Any hand written corrections (except @) or photocopies of the report invalidates this certificate.
- The uncertainties are for a confidence probability of not less than 95% with coverage factor k = 2
- Our masters are directly calibrated through NABL accredited calibration laboratory having direct traceability with National / international standard.

Traceable To National / International Standards.

<b>Calibrated By</b> 	<b>Damini Rathod</b> Calibration Engineer	<b>Reviewed &amp; Approved By</b> 	<b>Hitesh Limbachiya</b> Calibration Incharge
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NCQC DEFINES CALIBRATION AS "PRECISION AND RELIABILITY OF INSTRUMENTS FOR YOUR BETTER TOMORROW"