TRUE COPY

CALIBRATION CERTIFICATE

Work Order No.	: WO/ECL/0729/24-25	Certificate No.	: CC/ECL/1811/24-25
Work Order Date	: 05/02/2025	Date of Calibration	: 10/02 to 18/02/2025
Date of Receipt	: 05/02/2025	Page No.	: 1 of 29
ULR No.	: CC228725100000389F	Date of Issue	: 20/02/2025
Discipline	: Electro-Technical Calibration (Group : Alternating Current < 1 GHz, Direct Current,Time & Frequency, Tempearature Simulation)		

Calibrated for : M/s. NCQC Laboratory LLP., 4, Abhishree Corporate Park, Near Swagat Bungalow BRTS, Iskcon - Ambli, Ahmedabad - 380 058, Gujarat.

Calibrated at : IDEMI, Mumbai.

Description & Identification of Device Under Calibration	Standards Used for Calibration
Name : Multi-Product Calibrator with Current Coil Manufacturer : M/s. Fluke Condition on receipt : No visible damage Parameters of Calibration : DCV, DCA, ACV, ACA DC Resistance, Frequency, AC & DC Power, Power Factor, Current Coil, Scope Option, Thermocouples, RTD Calibrator Sr. No. : 3043901 Calibrator Model : 5522A Calibrator ID No. : NCQC/E-01 Current Coil Sr. No. : 20080897 Current Coil Model : 5500A/COIL Current Coil ID No. : NCQC/E-01	Please Refer Page 2 of 29 for Instruments used for Calibration

Ambient Conditions :
Temperature : 25 °C ± 2 °C Relative Humidity : 45 % to 75 %

Remarks : Please refer page 3 to 29 for Calibration Results.

1) Procedure of Calibration : Above mentioned item is calibrated as per operating procedure number : OP-ECL-01.

2) The reported expanded uncertainty in measurement is stated as the combined standard uncertainty in measurement multiplied by the coverage factor k = 2, which for a normal distribution corresponds to a coverage probability of approximately 95 %.

3) Calibration Status : Sticker No.Calibration Date : indicating 'CAL STATUS' is affixed on instrument.

4) Our NABL Accreditation Certificate No. is CC - 2287, Valid up to 30/08/2025.

5) Next Calibration Due on : 18/02/2026.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:41:42 +05'30'
AUTHORISED SIGNATORY

NCQC LABORATORY LLP
Valid up to 28/02/2026
Reviewed

Note:
1. This certificate refers only to the particular item(s), submitted for calibration. The certificate should not be reproduced expect in full without the prior permission from the Principal Director, IDEMI, Mumbai - 400 022.
2. This is computer generated certificate and may not contain signature. Where send by email, this is signed with digital signature of authorized signatory, approved by NABL. For any queries, please quote work order number mentioned in this certificate

NCQC System Certificate No. 260

Calibrator Sr. No. : 3043901
Current Coil Sr. No. : 20080897
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Standard Instruments Used for Calibration

1) 8½ Digit Multimeter
ID No. : IDEMI/ECL/DMM/11
Calibration Certificate No. : CC/ECL/1046/23-24
Calibration Valid up to 21/11/2025

2) 8½ Digit Multimeter
ID No. : IDEMI/ECL/DMM/03
Calibration Certificate No. : CR/PCAL/52857/01
Calibration Valid up to 25/06/2026

3) AC Measurement Standard
ID No. : IDEMI/ECL/ACMS/01
Calibration Certificate No. : CC/ECL/1904/22-23
Calibration Valid up to 17/03/2025

4) Standard Resistor
ID No. : IDEMI/ECL/ARTF/02
Calibration Certificate No. : 24070517/D2.01/C-082
ID No. : IDEMI/ECL/ARTF/03
Calibration Certificate No. : 24070517/D2.01/C-083
Calibration Valid up to 26/08/2026

5) Digital Frequency Counter
ID No. : IDEMI/ECL/FC/01
Calibration Certificate No. : CC/ECL/0294/23-24
Calibration Valid up to 19/06/2025

6) Precision Current Shunts
ID No. IDEMI/ECL/PSHT/16
Calibration Certificate No. : 1500378774
Calibration Valid up to 19/05/2026

7) DC Clamp With 7½ Digit Multimeter
ID No. : IDEMI/ECL/DMM/04
Calibration Certificate No. : CC/ECL/1613/23-24
Calibration Valid up to 05/03/2025

8) RLC Digibridge
ID No. : IDEMI/ECL/LCRM/01
Calibration Certificate No. : CC/ECL/0386/24-25
Calibration Valid up to 04/06/2026

9) Multichannel Precision Power Analyzer
ID No. : IDEMI/ECL/DPM/02
Calibration Certificate No. : CC/ECL/1232/24-25
Calibration Valid up to 06/11/2026

10) Multi-Product Calibrator
ID No. : IDEMI/ECL/MFC/07
Calibration Certificate No. : CC/ECL/0384/24-25
Calibration Valid up to 06/06/2025

11) Standard DC Resistor
ID No. : IDEMI/ECL/RES/06
Calibration Certificate No. : CC/ECL/0688/23-24
Calibration Valid up to 01/09/2025
ID No. : IDEMI/ECL/RES/17
Calibration Certificate No. : CC/ECL/0900/24-25
Calibration Valid up to 11/09/2026

12) Standard Capacitor
ID No. : IDEMI/ECL/CAP/14
Calibration Certificate No. : CC399224000000004F
Calibration Valid up to 11/08/2026

13) Precision Current Shunts
ID No. : IDEMI/ECL/PSHT/01
Calibration Certificate No. : 1500378777
Calibration Valid up to 20/05/2026
ID No. : IDEMI/ECL/PSHT/22
Calibration Certificate No. : 1500378778
Calibration Valid up to 16/05/2026
ID No. : IDEMI/ECL/PSHT/24
Calibration Certificate No. : 1500378780
Calibration Valid up to 16/05/2026
ID No. : IDEMI/ECL/PSHT/25
Calibration Certificate No. : 1500378781
Calibration Valid up to 16/05/2026
ID No. : IDEMI/ECL/PSHT/27
Calibration Certificate No. : 1500378783
Calibration Valid up to 16/05/2026
ID No. : IDEMI/ECL/PSHT/28
Calibration Certificate No. : 1500378766
Calibration Valid up to 16/05/2026
ID No. : IDEMI/ECL/PSHT/29
Calibration Certificate No. : 1500378767
Calibration Valid up to 16/05/2026
ID No. : IDEMI/ECL/PSHT/30
Calibration Certificate No. : 1500378768
Calibration Valid up to 16/05/2026
ID No. : IDEMI/ECL/PSHT/31
Calibration Certificate No. : 1500378771
Calibration Valid up to 19/05/2026
ID No. : IDEMI/ECL/PSHT/32
Calibration Certificate No. : 1500378770
Calibration Valid up to 19/05/2026
ID No. : IDEMI/ECL/PSHT/33
Calibration Certificate No. : 1500378773
Calibration Valid up to 19/05/2026

14) Power/Energy Comparator
ID No. : IDEMI/ECL/PEC/01
Calibration Certificate No. : CC/ECL/0398/24-25
Calibration Valid up to 17/06/2026

15) Digital Storage Oscilloscope
ID No. : ETL-117
Calibration Certificate No. : CC/ECL/1536/24-25
Calibration Valid up to 08/01/2026

16) AC Clamp With 6 ½ Digit Multimeter
ID No. : IDEMI/ECL/DMM/02
Calibration Certificate No. : CC/ECL/1612/23-24
Calibration Valid up to 06/03/2025

17) High Voltage Divider
ID No. : IDEMI/ECL/HVD/01
Calibration Certificate No. : CC3992240000000006F
Calibration Valid up to 11/08/2026

18) Standard Capacitor
ID No. : IDEMI/ECL/CAP/13
Calibration Certificate No. : CC399224000000005F
Calibration Valid up to 11/08/2026

19) Multifunction Calibrator
ID No. : IDEMI/ECL/MFC/10
Calibration Certificate No. : CC/ECL/0388/24-25
Calibration Valid up to 04/06/2025

All measurement results are traceable to the International system of units (SI), ensured by comparison, directly or indirectly with National or International standards through unbroken chain of calibration

PANKAJ VASUDEO AMBEKAR
Digitally signed by PANKAJ VASUDEO AMBEKAR
Date: 2025.02.20 11:41:59 +05'30'
Authorised Signatory

ilac-MRA

Calibrator Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

DC VOLTAGE CALIBRATION

Calibration Standard		Device Under Calibration		Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Units	% of Rdg	
	mV		**mV**	**mV**		
Auto Volts DC	0.99953	0 to 329.9999 mVDC	1.0000	0.00047	0.047	0.02
	32.99890		33.0000	0.00110	0.0033	0.001
	164.99664		165.0000	0.00336	0.0020	0.0007
	329.99534		329.9999	0.00456	0.0014	0.0006
	-1.00026		-1.0000	0.00026	-0.026	0.02
	-32.99983		-33.0000	-0.00017	0.0005	0.001
	-164.99773		-165.0000	-0.00227	0.0014	0.0007
	-329.99541		-329.9999	-0.00449	0.0014	0.0006
	V		**V**	**V**		
	0.3299979	0 to 3.299999 VDC	0.330000	0.0000021	0.0006	0.0006
	1.6499909		1.650000	0.0000091	0.0006	0.0005
	3.2999762		3.299999	0.0000228	0.0007	0.0005
	-0.3299986		-0.330000	-0.0000014	0.0004	0.0006
	-1.6499893		-1.650000	-0.0000107	0.0006	0.0005
	-3.2999725		-3.299999	-0.0000265	0.0008	0.0005
	3.300008	0 to 32.99999 VDC	3.30000	-0.000008	-0.0002	0.0005
	16.500060		16.50000	-0.000060	-0.0004	0.0005
	32.999954		32.99999	0.000036	0.0001	0.0008
	-3.300019		-3.30000	0.000019	-0.0006	0.0005
	-16.500100		-16.50000	0.000100	-0.0006	0.0005
	-33.000054		-32.99999	0.000064	-0.0002	0.0008
	29.99991	30 to 329.9999 VDC	30.0000	0.00009	0.0003	0.0008
	164.99946		165.0000	0.00054	0.0003	0.0007
	329.99751		329.9999	0.00239	0.0007	0.0008
	-29.99997		-30.0000	-0.00003	0.0001	0.0008
	-164.99955		-165.0000	-0.00045	0.0003	0.0007
	-329.99720		-329.9999	-0.00270	0.0008	0.0008
	99.9994	100 to 1020 V DC	100.000	0.0006	0.0006	0.0007
	499.9974		500.000	0.0026	0.0005	0.0007
	1019.9939		1020.000	0.0061	0.0006	0.0007
	-100.0001		-100.000	0.0001	-0.0001	0.0006
	-499.9982		-500.000	-0.0018	0.0004	0.0005
	-1019.9952		-1020.000	-0.0048	0.0005	0.0006

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:42:10 +05'30'
Authorised Signatory

Calibrator Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

DC CURRENT CALIBRATION

Calibration Standard		Device Under Calibration		Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Units	% of Rdg	
	µA		**µA**	**µA**		
Auto Volts	1.0002	0 to 329.999 uA	1.000	-0.0002	-0.020	0.02
DC With	32.9978	DC	33.000	0.0022	0.007	0.006
Standard	164.9867		165.000	0.0133	0.008	0.004
Resistors	329.9714		329.999	0.0276	0.008	0.004
	-0.9994		-1.000	-0.0006	0.060	0.020
	-32.9965		-33.000	-0.0035	0.011	0.006
	-164.9840		-165.000	-0.0160	0.010	0.004
	-329.9660		-329.999	-0.0330	0.010	0.004
	mA		**mA**	**mA**		
	0.330001	0 to 3.29999 mA	0.33000	-0.000001	-0.0003	0.004
	1.650013	DC	1.65000	-0.000013	-0.0008	0.003
	3.300018		3.29999	-0.000028	-0.0008	0.003
	-0.329998		-0.33000	-0.000002	0.0006	0.004
	-1.650004		-1.65000	0.000004	-0.0002	0.003
	-3.299989		-3.29999	-0.000001	0.00003	0.003
	3.30001	0 to 32.9999 mA	3.3000	-0.00001	-0.0003	0.003
	16.50001	DC	16.5000	-0.00001	-0.0001	0.003
	33.00010		32.9999	-0.00020	-0.0006	0.003
	-3.30000		-3.3000	0.00000	0.0000	0.003
	-16.50007		-16.5000	0.00007	-0.0004	0.003
	-33.00022		-32.9999	0.00032	-0.0010	0.003
	33.0008	0 to 329.999 mA	33.000	-0.0008	-0.002	0.003
	165.0053	DC	165.000	-0.0053	-0.003	0.003
	330.0137		329.999	-0.0147	-0.004	0.003
	-33.0012		-33.000	0.0012	-0.004	0.003
	-165.0056		-165.000	0.0056	-0.003	0.003
	-330.0116		-329.999	0.0126	-0.004	0.003

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:42:53 +05'30'
Authorised Signatory

Calibrator Sr. No. : 3043901 Page No. : 5 of 29
Date of Calibration : 10/02 to 18/02/2025 Certificate No. : CC/ECL/1811/24-25
ULR No. : CC228725100000389F

Calibration Results :

DC CURRENT CALIBRATION

Calibration Standard		Device Under Calibration		Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Units	% of Rdg	
	A		A	A		
Auto Volts DC With Standard Resistors	0.329985	0.33 to 1.09999 ADC	0.33000	0.000015	0.005	0.003
	0.549974		0.55000	0.000026	0.005	0.003
	1.099956		1.09999	0.000034	0.003	0.003
	-0.330023		-0.33000	0.000023	-0.007	0.003
	-0.550018		-0.55000	0.000018	-0.003	0.003
	-1.099997		-1.09999	0.000007	-0.001	0.003
	1.099967	1.1 to 2.99999 ADC	1.10000	0.000033	0.003	0.003
	1.499958		1.50000	0.000042	0.003	0.003
	2.999962		2.99999	0.000028	0.001	0.004
	-1.100008		-1.10000	0.000008	-0.001	0.003
	-1.500000		-1.50000	0.000000	0.000	0.003
	-3.000033		-2.99999	0.000043	-0.001	0.004
	3.09939	0 to 10.9999 ADC	3.1000	0.00061	0.020	0.004
	4.99897		5.0000	0.00103	0.021	0.005
	10.9961		10.9999	0.0038	0.035	0.005
	-3.09960		-3.1000	-0.00040	0.013	0.004
	-4.99921		-5.0000	-0.00079	0.016	0.005
	-10.99654		-10.9999	-0.00336	0.031	0.005
	10.99685	11 to 20.5 ADC	11.0000	0.00315	0.029	0.02
	14.99559		15.0000	0.00441	0.029	0.02
	20.49519		20.5000	0.00481	0.023	0.02
	-10.99749		-11.0000	-0.00251	0.023	0.02
	-14.99594		-15.0000	-0.00406	0.027	0.02
	-20.49690		-20.5000	-0.00310	0.015	0.02

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:43:06 +05'30'
Authorised Signatory

Calibrator Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Calibration Results :

AC VOLTAGE CALIBRATION NORMAL

Calibration Standard		Device Under Calibration			Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Frequency	Units	% of Rdg	
	mV		mV		mV		
Auto	1.0002	1.0 to	1.000	10 Hz	-0.0002	-0.020	0.8
Volts	1.0005	32.999 mV AC	1.000	20 Hz	-0.0005	-0.050	0.8
AC	0.9999		1.000	45 Hz	0.0001	0.010	0.4
	1.0000		1.000	1 kHz	0.0000	0.000	0.4
	1.0007		1.000	10 kHz	-0.0007	-0.070	0.4
	0.9998		1.000	20 kHz	0.0002	0.020	0.4
	0.9998		1.000	50 kHz	0.0002	0.020	0.4
	0.9986		1.000	100 kHz	0.0014	0.140	0.8
	16.4971		16.500	10 Hz	0.0029	0.018	0.05
	16.4992		16.500	20 Hz	0.0008	0.005	0.05
	16.4996		16.500	45 Hz	0.0004	0.002	0.03
	16.4997		16.500	1 kHz	0.0003	0.002	0.03
	16.4997		16.500	10 kHz	0.0003	0.002	0.03
	16.5002		16.500	20 kHz	-0.0002	-0.001	0.03
	16.4982		16.500	50 kHz	0.0018	0.011	0.04
	16.4912		16.500	100 kHz	0.0088	0.053	0.06
	16.5342		16.500	500 kHz	-0.0342	-0.207	0.2
	32.9920		32.999	10 Hz	0.0070	0.021	0.05
	32.9961		32.999	20 Hz	0.0029	0.009	0.03
	32.9967		32.999	45 Hz	0.0023	0.007	0.015
	32.9968		32.999	1 kHz	0.0022	0.007	0.015
	32.9972		32.999	10 kHz	0.0018	0.005	0.015
	32.9973		32.999	20 kHz	0.0017	0.005	0.015
	32.9900		32.999	50 kHz	0.0090	0.027	0.025
	32.9708		32.999	100 kHz	0.0282	0.086	0.05
	33.0071		32.999	500 kHz	-0.0081	-0.025	0.15

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:43:19 +05'30'
Authorised Signatory

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Calibrator Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Calibration Results :

AC VOLTAGE CALIBRATION NORMAL

Calibration Standard		Device Under Calibration			Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Frequency	Units	% of Rdg	
	mV		**mV**		**mV**		
Auto	32.9922	33 mV to	33.000	10 Hz	0.0078	0.024	0.04
Volts	32.9964	329.999 mV AC	33.000	20 Hz	0.0036	0.011	0.030
AC	32.9969		33.000	45 Hz	0.0031	0.009	0.015
	32.9966		33.000	1 kHz	0.0034	0.010	0.015
	32.9964		33.000	10 kHz	0.0036	0.011	0.015
	32.9962		33.000	20 kHz	0.0038	0.012	0.015
	32.9942		33.000	50 kHz	0.0058	0.018	0.025
	32.9918		33.000	100 kHz	0.0082	0.025	0.05
	33.0655		33.000	500 kHz	-0.0655	-0.198	0.15
	164.9623		165.000	10 Hz	0.0377	0.023	0.035
	164.9867		165.000	20 Hz	0.0133	0.008	0.015
	164.9906		165.000	45 Hz	0.0094	0.006	0.008
	164.9911		165.000	1 kHz	0.0089	0.005	0.008
	164.9894		165.000	10 kHz	0.0106	0.006	0.008
	164.9889		165.000	20 kHz	0.0111	0.007	0.008
	164.9766		165.000	50 kHz	0.0234	0.014	0.015
	164.9572		165.000	100 kHz	0.0428	0.026	0.025
	164.9246		165.000	500 kHz	0.0754	0.046	0.07
	329.9452		329.999	10 Hz	0.0538	0.016	0.03
	329.9830		329.999	20 Hz	0.0160	0.005	0.015
	329.9888		329.999	45 Hz	0.0102	0.003	0.007
	329.9890		329.999	1 kHz	0.0100	0.003	0.007
	329.9862		329.999	10 kHz	0.0128	0.004	0.007
	329.9808		329.999	20 kHz	0.0182	0.006	0.007
	329.9530		329.999	50 kHz	0.0460	0.014	0.008
	329.9072		329.999	100 kHz	0.0918	0.028	0.015
	329.7884		329.999	500 kHz	0.2106	0.064	0.05
	V		**V**		**V**		
	0.329930	0.33 V to	0.33000	10 Hz	0.000070	0.021	0.03
	0.329964	3.29999 V AC	0.33000	20 Hz	0.000036	0.011	0.015
	0.329960		0.33000	45 Hz	0.000040	0.012	0.007
	0.329976		0.33000	1 kHz	0.000024	0.007	0.007
	0.329976		0.33000	10 kHz	0.000024	0.007	0.007
	0.329987		0.33000	20 kHz	0.000013	0.004	0.007
	0.330017		0.33000	50 kHz	-0.000017	-0.005	0.008
	0.330104		0.33000	100 kHz	-0.000104	-0.032	0.015
	0.330385		0.33000	500 kHz	-0.000385	-0.117	0.05

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
Digitally signed by PANKAJ VASUDEO AMBEKAR
Date: 2025.02.20 11:43:34 +05'30'
Authorised Signatory

Calibrator Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Calibration Results :

AC VOLTAGE CALIBRATION NORMAL

Calibration Standard		Device Under Calibration			Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Frequency	Units	% of Rdg	
	V		V		V		
Auto Volts AC	1.649695	0.33 V to 3.29999 V AC	1.65000	10 Hz	0.00031	0.018	0.035
	1.649935		1.65000	20 Hz	0.00006	0.004	0.015
	1.649968		1.65000	45 Hz	0.00003	0.002	0.006
	1.649985		1.65000	1 kHz	0.00001	0.001	0.006
	1.649993		1.65000	10 kHz	0.00001	0.0004	0.006
	1.650020		1.65000	20 kHz	-0.00002	-0.001	0.006
	1.650150		1.65000	50 kHz	-0.00015	-0.009	0.008
	1.650526		1.65000	100 kHz	-0.00053	-0.032	0.01
	1.648926		1.65000	500 kHz	0.00107	0.065	0.05
	3.299462		3.29999	10 Hz	0.00053	0.016	0.035
	3.299904		3.29999	20 Hz	0.00009	0.003	0.015
	3.299966		3.29999	45 Hz	0.00002	0.001	0.006
	3.299976		3.29999	1 kHz	0.00001	0.0004	0.006
	3.299974		3.29999	10 kHz	0.00002	0.0005	0.006
	3.300020		3.29999	20 kHz	-0.00003	-0.001	0.006
	3.300212		3.29999	50 kHz	-0.00022	-0.007	0.008
	3.300908		3.29999	100 kHz	-0.00092	-0.028	0.01
	3.299152		3.29999	500 kHz	0.00084	0.025	0.10
	3.29925	3.3 V to 32.9999 V AC	3.3000	10 Hz	0.0008	0.023	0.035
	3.29979		3.3000	20 Hz	0.0002	0.006	0.015
	3.29980		3.3000	45 Hz	0.0002	0.006	0.006
	3.29969		3.3000	1 kHz	0.0003	0.009	0.006
	3.29984		3.3000	10 kHz	0.0002	0.005	0.006
	3.29973		3.3000	20 kHz	0.0003	0.008	0.006
	3.29974		3.3000	50 kHz	0.0003	0.008	0.008
	3.29965		3.3000	100 kHz	0.0003	0.011	0.02
	16.49714		16.5000	10 Hz	0.0029	0.017	0.035
	16.49984		16.5000	20 Hz	0.0002	0.001	0.015
	16.50013		16.5000	45 Hz	-0.0001	-0.001	0.006
	16.49923		16.5000	1 kHz	0.0008	0.005	0.006
	16.49926		16.5000	10 kHz	0.0007	0.004	0.006
	16.49934		16.5000	20 kHz	0.0007	0.004	0.006
	16.49924		16.5000	50 kHz	0.0008	0.005	0.007
	16.49798		16.5000	100 kHz	0.0020	0.012	0.01

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:43:50 +05'30'
Authorised Signatory

Calibrator Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Calibration Results :

AC VOLTAGE CALIBRATION NORMAL

Calibration Standard		Device Under Calibration			Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Frequency	Units	% of Rdg	
	V		V		V		
Auto Volts AC	32.99514	3.3 V to 32.9999 V AC	32.9999	10 Hz	0.00476	0.014	0.035
	32.99974		32.9999	20 Hz	0.00016	0.0005	0.015
	33.00022		32.9999	45 Hz	-0.00032	-0.001	0.007
	32.99860		32.9999	1 kHz	0.00130	0.004	0.007
	32.99856		32.9999	10 kHz	0.00134	0.004	0.007
	32.99862		32.9999	20 kHz	0.00128	0.004	0.007
	32.99772		32.9999	50 kHz	0.00218	0.007	0.008
	32.99694		32.9999	100 kHz	0.00296	0.009	0.02
	32.9986	33 V to 329.999 V AC	33.000	45 Hz	0.0014	0.004	0.007
	32.9963		33.000	1 kHz	0.0037	0.011	0.007
	32.9982		33.000	10 kHz	0.0018	0.005	0.007
	32.9974		33.000	20 kHz	0.0026	0.008	0.007
	33.0059		33.000	50 kHz	-0.0059	-0.018	0.008
	33.0259		33.000	100 kHz	-0.0259	-0.078	0.015
	165.0020		165.000	45 Hz	-0.0020	-0.001	0.007
	164.9952		165.000	1 kHz	0.0048	0.003	0.007
	164.9965		165.000	10 kHz	0.0035	0.002	0.007
	164.9902		165.000	20 kHz	0.0098	0.006	0.007
	165.0103		165.000	50 kHz	-0.0103	-0.006	0.01
	165.0574		165.000	100 kHz	-0.0574	-0.035	0.015
	330.0156		329.999	45 Hz	-0.0166	-0.005	0.007
	329.9880		329.999	1 kHz	0.0110	0.003	0.007
	329.9880		329.999	10 kHz	0.0110	0.003	0.007
	329.9914		329.999	20 kHz	0.0076	0.002	0.007
	330.1108		329.999	50 kHz	-0.1118	-0.034	0.02
	330.7312		329.999	100 kHz	-0.7322	-0.221	0.1
	329.977	330 V to 1020 V AC	330.00	45 Hz	0.023	0.007	0.007
	329.977		330.00	1 kHz	0.023	0.007	0.007
	329.984		330.00	5 kHz	0.016	0.005	0.007
	330.022		330.00	10 kHz	-0.022	-0.007	0.007
	499.964		500.00	45 Hz	0.036	0.007	0.007
	499.971		500.00	1 kHz	0.029	0.006	0.007
	499.976		500.00	5 kHz	0.024	0.005	0.007
	500.036		500.00	10 kHz	-0.036	-0.007	0.007
	999.976		1000.00	45 Hz	0.024	0.002	0.007
	999.942		1000.00	1 kHz	0.058	0.006	0.007
	999.979		1000.00	5 kHz	0.021	0.002	0.007
	1000.088		1000.00	10 kHz	-0.088	-0.009	0.007

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:44:06 +05'30'
Authorised Signatory

Calibrator Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Calibration Results :

AC CURRENT CALIBRATION

Calibration Standard		Device Under Calibration			Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Frequency	Units	% of Rdg	
	µA		µA		µA		
Auto	28.989	29 to 329.99 µA	29.00	10 Hz	0.011	0.038	0.05
Volts	28.997	AC	29.00	20 Hz	0.003	0.010	0.05
AC	28.998		29.00	45 Hz	0.002	0.007	0.05
with Standard	29.003		29.00	1 kHz	-0.003	-0.010	0.05
Shunts	29.007		29.00	5 kHz	-0.007	-0.024	0.05
	28.978		29.00	10 kHz	0.022	0.076	0.05
	164.913		165.00	10 Hz	0.087	0.053	0.04
	164.961		165.00	20 Hz	0.039	0.024	0.02
	164.967		165.00	45 Hz	0.033	0.020	0.03
	164.992		165.00	1 kHz	0.008	0.005	0.03
	164.984		165.00	5 kHz	0.016	0.010	0.03
	164.786		165.00	10 kHz	0.214	0.130	0.03
	329.840		329.99	10 Hz	0.150	0.045	0.04
	329.929		329.99	20 Hz	0.061	0.018	0.02
	329.938		329.99	45 Hz	0.052	0.016	0.01
	329.985		329.99	1 kHz	0.005	0.002	0.01
	330.087		329.99	5 kHz	-0.097	-0.029	0.01
	329.833		329.99	10 kHz	0.157	0.048	0.01

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
Digitally signed by PANKAJ VASUDEO AMBEKAR
Date: 2025.02.20 11:44:24 +05'30'
Authorised Signatory

Calibrator Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

AC CURRENT CALIBRATION

Calibration Standard		Device Under Calibration			Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Frequency	Units	% of Rdg	
	mA		mA		mA		
Auto Volts AC with Standard Shunts	0.329857	0.33 to 3.29999 mA AC	0.33000	10 Hz	0.000143	0.043	0.03
	0.329956		0.33000	20 Hz	0.000044	0.013	0.02
	0.329965		0.33000	45 Hz	0.000035	0.011	0.01
	0.329972		0.33000	1 kHz	0.000028	0.008	0.01
	0.329966		0.33000	5 kHz	0.000034	0.010	0.01
	0.329909		0.33000	10 kHz	0.000091	0.028	0.01
	1.649319		1.65000	10 Hz	0.000681	0.041	0.04
	1.649792		1.65000	20 Hz	0.000208	0.013	0.01
	1.649851		1.65000	45 Hz	0.000149	0.009	0.01
	1.649855		1.65000	1 kHz	0.000145	0.009	0.01
	1.649815		1.65000	5 kHz	0.000185	0.011	0.01
	1.649619		1.65000	10 kHz	0.000381	0.023	0.01
	3.298829		3.29999	10 Hz	0.00116	0.035	0.03
	3.299702		3.29999	20 Hz	0.00029	0.009	0.02
	3.299774		3.29999	45 Hz	0.00022	0.007	0.01
	3.299767		3.29999	1 kHz	0.00022	0.007	0.01
	3.299737		3.29999	5 kHz	0.00025	0.008	0.01
	3.299592		3.29999	10 kHz	0.00040	0.012	0.01
	3.29854	3.3 to 32.9999 mA AC	3.3000	10 Hz	0.00146	0.044	0.03
	3.29951		3.3000	20 Hz	0.00049	0.015	0.02
	3.29968		3.3000	45 Hz	0.00032	0.010	0.01
	3.29975		3.3000	1 kHz	0.00025	0.008	0.01
	3.30024		3.3000	5 kHz	-0.00024	-0.007	0.01
	3.30094		3.3000	10 kHz	-0.00094	-0.028	0.01
	16.49330		16.5000	10 Hz	0.00670	0.041	0.03
	16.49845		16.5000	20 Hz	0.00155	0.009	0.02
	16.49915		16.5000	45 Hz	0.00085	0.005	0.01
	16.49904		16.5000	1 kHz	0.00096	0.006	0.01
	16.49928		16.5000	5 kHz	0.00072	0.004	0.01
	16.49955		16.5000	10 kHz	0.00045	0.003	0.01
	32.99828		32.9999	10 Hz	0.00162	0.005	0.03
	32.99717		32.9999	20 Hz	0.00273	0.008	0.02
	32.99855		32.9999	45 Hz	0.00135	0.004	0.01
	32.99817		32.9999	1 kHz	0.00173	0.005	0.01
	32.99812		32.9999	5 kHz	0.00178	0.005	0.01
	32.99863		32.9999	10 kHz	0.00127	0.004	0.01

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
Digitally signed by PANKAJ VASUDEO AMBEKAR
Date: 2025.02.20 11:44:44 +05'30'
Authorised Signatory

ilac-MRA

Calibrator Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

AC CURRENT CALIBRATION

Calibration Standard		Device Under Calibration			Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Frequency	Units	% of Rdg	
	mA		**mA**		**mA**		
Auto	32.9897	33 to	33.000	10 Hz	0.0103	0.031	0.03
Volts	32.9988	329.999 mA AC	33.000	20 Hz	0.0012	0.004	0.02
AC	33.0004		33.000	45 Hz	-0.0004	-0.001	0.01
with Standard	33.0014		33.000	1 kHz	-0.0014	-0.004	0.01
Shunts	33.0068		33.000	5 kHz	-0.0068	-0.021	0.01
	33.0141		33.000	10 kHz	-0.0141	-0.043	0.01
	164.9587		165.000	10 Hz	0.0413	0.025	0.03
	165.0074		165.000	20 Hz	-0.0074	-0.004	0.02
	165.0135		165.000	45 Hz	-0.0135	-0.0082	0.01
	165.0129		165.000	1 kHz	-0.0129	-0.008	0.01
	165.0159		165.000	5 kHz	-0.0159	-0.010	0.01
	165.0202		165.000	10 kHz	-0.0202	-0.012	0.01
	329.9221		329.999	10 Hz	0.0769	0.023	0.03
	330.0178		329.999	20 Hz	-0.0188	-0.006	0.02
	330.0299		329.999	45 Hz	-0.0309	-0.009	0.01
	330.0289		329.999	1 kHz	-0.0299	-0.009	0.01
	330.0285		329.999	5 kHz	-0.0295	-0.009	0.01
	330.0346		329.999	10 kHz	-0.0356	-0.011	0.01
	A		**A**		**A**		
	0.329883	0.33 to	0.33000	10 Hz	0.000117	0.035	0.03
	0.329992	1.09999 AAC	0.33000	45 Hz	0.000008	0.002	0.01
	0.329974		0.33000	1 kHz	0.000026	0.008	0.01
	0.330563		0.33000	5 kHz	-0.000563	-0.170	0.01
	0.331577		0.33000	10 kHz	-0.001577	-0.476	0.01
	0.549820		0.55000	10 Hz	0.000180	0.033	0.03
	0.550002		0.55000	45 Hz	-0.000002	-0.0004	0.01
	0.549962		0.55000	1 kHz	0.000038	0.007	0.01
	0.550650		0.55000	5 kHz	-0.000650	-0.118	0.01
	0.552730		0.55000	10 kHz	-0.002730	-0.494	0.01
	1.099691		1.09999	10 Hz	0.000299	0.027	0.03
	1.100031		1.09999	45 Hz	-0.000041	-0.004	0.01
	1.099974		1.09999	1 kHz	0.000016	0.001	0.01
	1.100595		1.09999	5 kHz	-0.000605	-0.055	0.01
	1.103938		1.09999	10 kHz	-0.003948	-0.358	0.01

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
Digitally signed by PANKAJ VASUDEO AMBEKAR
Date: 2025.02.20 11:45:04 +05'30'

Authorised Signatory

Calibrator Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

AC CURRENT CALIBRATION

Calibration Standard		Device Under Calibration			Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Frequency	Units	% of Rdg	
	A		A		A		
Auto Volts AC with Standard Shunts	1.099687	1.1 to 2.99999 A AC	1.10000	10 Hz	0.000313	0.028	0.04
	1.100035		1.10000	45 Hz	-0.000035	-0.003	0.01
	1.100000		1.10000	1 kHz	0.000000	0.000	0.01
	1.100645		1.10000	5 kHz	-0.000645	-0.059	0.02
	1.104068		1.10000	10 kHz	-0.004068	-0.368	0.04
	1.499567		1.50000	10 Hz	0.000433	0.029	0.04
	1.500057		1.50000	45 Hz	-0.000057	-0.004	0.01
	1.499949		1.50000	1 kHz	0.000051	0.003	0.01
	1.500303		1.50000	5 kHz	-0.000303	-0.020	0.02
	1.504311		1.50000	10 kHz	-0.004311	-0.287	0.04
	2.999302		2.99999	10 Hz	0.000688	0.023	0.04
	3.000244		2.99999	45 Hz	-0.000254	-0.008	0.01
	2.999944		2.99999	1 kHz	0.000046	0.002	0.01
	3.001214		2.99999	5 kHz	-0.001224	-0.041	0.02
	3.002215		2.99999	10 kHz	-0.002225	-0.074	0.04
	2.999333	3 to 10.9999 A AC	3.0000	45 Hz	0.000667	0.022	0.04
	2.999306		3.0000	100 Hz	0.000694	0.023	0.01
	2.999294		3.0000	1 kHz	0.000706	0.024	0.01
	2.971659		3.0000	5 kHz	0.028341	0.954	0.03
	4.999152		5.0000	45 Hz	0.000848	0.017	0.04
	4.999104		5.0000	100 Hz	0.000896	0.018	0.01
	4.999153		5.0000	1 kHz	0.000847	0.017	0.01
	4.955650		5.0000	5 kHz	0.044350	0.895	0.03
	10.99714		10.9999	45 Hz	0.00276	0.025	0.01
	10.99703		10.9999	100 Hz	0.00287	0.026	0.01
	10.99682		10.9999	1 kHz	0.00308	0.028	0.01
	10.95388		10.9999	5 kHz	0.04602	0.420	0.03
	10.99733	11 to 20.5 A AC	11.0000	45 Hz	0.00267	0.024	0.02
	10.99744		11.0000	100 Hz	0.00256	0.023	0.02
	10.99684		11.0000	1 kHz	0.00316	0.029	0.02
	10.94982		11.0000	5 kHz	0.05018	0.458	0.03
	14.99573		15.0000	45 Hz	0.00427	0.028	0.02
	14.99606		15.0000	100 Hz	0.00394	0.026	0.02
	14.99558		15.0000	1 kHz	0.00442	0.029	0.02
	14.93225		15.0000	5 kHz	0.06775	0.454	0.03
	20.49700		20.5000	45 Hz	0.00300	0.015	0.02
	20.49857		20.5000	100 Hz	0.00143	0.007	0.02
	20.49860		20.5000	1 kHz	0.00140	0.007	0.02
	20.44524		20.5000	5 kHz	0.05476	0.268	0.03

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
Digitally signed by PANKAJ VASUDEO AMBEKAR
Date: 2025.02.20 11:45:26 +05'30'
Authorised Signatory

Calibrator Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

RESISTANCE CALIBRATION

Calibration Standard		Device Under Calibration		Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Units	% of Rdg	
	Ω		Ω	Ω		
Auto Ohms	0.09979	0 to 10.9999 Ω 4 Wire	0.1000	0.00021	0.210	0.10
	0.99980		1.0000	0.00020	0.020	0.010
	4.99975		5.0000	0.00025	0.005	0.005
	10.99982		10.9999	0.00008	0.0007	0.002
	10.99986	11 to 32.9999 Ω 4 Wire	11.0000	0.00014	0.0013	0.002
	16.49991		16.5000	0.00009	0.0005	0.002
	33.00012		32.9999	-0.00022	-0.0007	0.002
	32.99980	33 to 109.9999 Ω 4 Wire	33.0000	0.00020	0.0006	0.002
	54.99977		55.0000	0.00023	0.0004	0.002
	109.99939		109.9999	0.00051	0.0005	0.002
	109.99891	110 to 329.9999 Ω 4 Wire	110.0000	0.00109	0.0010	0.002
	164.99868		165.0000	0.00132	0.0008	0.002
	329.99605		329.9999	0.00385	0.0012	0.002
	kΩ		kΩ	kΩ		
	0.3299965	0.33 to 1.099999 kΩ 4 Wire	0.330000	0.0000035	0.0011	0.002
	0.5499986		0.550000	0.0000014	0.0003	0.002
	1.1000025		1.099999	-0.0000035	-0.0003	0.002
	1.0999721	1.1 to 3.299999 kΩ 4 Wire	1.100000	0.0000279	0.0025	0.002
	1.6499742		1.650000	0.0000258	0.0016	0.002
	3.2999841		3.299999	0.0000149	0.0005	0.002
	3.299965	3.3 to 10.99999 kΩ 4 Wire	3.30000	0.000035	0.0011	0.002
	5.499953		5.50000	0.000047	0.0009	0.002
	10.999956		10.99999	0.000034	0.0003	0.002
	10.999978	11 to 32.99999 kΩ 4 Wire	11.00000	0.000022	0.0002	0.002
	16.500008		16.50000	-0.000008	-0.00005	0.002
	33.000184		32.99999	-0.000194	-0.0006	0.002
	33.00005	33 to 109.9999 kΩ 4 Wire	33.0000	-0.00005	-0.0002	0.002
	55.00038		55.0000	-0.00038	-0.0007	0.002
	110.00111		109.9999	-0.00121	-0.0011	0.002
	Ω		Ω	Ω		
	0.09979	0 to 10.9999 Ω 2 Wire	0.1000	0.00021	0.210	0.10
	0.99981		1.0000	0.00019	0.019	0.010
	4.99980		5.0000	0.00020	0.004	0.005
	10.99984		10.9999	0.00006	0.0005	0.002
	10.99981	11 to 32.9999 Ω 2 Wire	11.0000	0.00019	0.0017	0.002
	16.49991		16.5000	0.00009	0.0005	0.002
	33.00015		32.9999	-0.00025	-0.0008	0.002
	32.99977	33 to 109.9999 Ω 2 Wire	33.0000	0.00023	0.0007	0.002
	54.99972		55.0000	0.00028	0.0005	0.002
	109.99933		109.9999	0.00057	0.0005	0.002
	109.99886	110 to 329.9999 Ω 2 Wire	110.0000	0.00114	0.0010	0.002
	164.99860		165.0000	0.00140	0.0008	0.002
	329.99936		329.9999	0.00054	0.0002	0.002

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
Digitally signed by PANKAJ VASUDEO AMBEKAR
Date: 2025.02.20 11:45:48 +05'30'
Authorised Signatory

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई ४०००२२
INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI - 400 022

Calibrator Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

RESISTANCE CALIBRATION

Calibration Standard		Device Under Calibration		Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Units	% of Rdg	
	kΩ		kΩ	kΩ		
Auto Ohms	0.3299970	0.33 to 1.099999 kΩ 2 Wire	0.330000	0.0000030	0.0009	0.002
	0.5499989		0.550000	0.0000011	0.0002	0.002
	1.1000027		1.099999	-0.0000037	-0.0003	0.002
	1.0999929	1.1 to 3.299999 kΩ 2 Wire	1.100000	0.0000071	0.0006	0.002
	1.6499941		1.650000	0.0000059	0.0004	0.002
	3.3000028		3.299999	-0.0000038	-0.0001	0.002
	3.299977	3.3 to 10.99999 kΩ 2 Wire	3.30000	0.000023	0.0007	0.002
	5.499971		5.50000	0.000029	0.0005	0.002
	10.999989		10.99999	0.000001	0.00001	0.002
	11.000002	11 to 32.99999 kΩ 2 Wire	11.00000	-0.000002	-0.00002	0.002
	16.500043		16.50000	-0.000043	-0.0003	0.002
	33.000245		32.99999	-0.000255	-0.0008	0.002
	33.00009	33 to 109.9999 kΩ 2 Wire	33.0000	-0.00009	-0.0003	0.002
	55.00044		55.0000	-0.00044	-0.0008	0.002
	110.00122		109.9999	-0.00132	-0.0012	0.002
	110.00043	110 to 329.9999 kΩ COMP OFF	110.0000	-0.00043	-0.0004	0.002
	165.00101		165.0000	-0.00101	-0.0006	0.002
	330.00275		329.9999	-0.00285	-0.0009	0.002
	MΩ		MΩ	MΩ		
	0.3300009	330 kΩ to 1.099999 MΩ COMP OFF	0.330000	-0.0000009	-0.0003	0.002
	0.5500031		0.550000	-0.0000031	-0.0006	0.002
	1.1000062		1.099999	-0.0000072	-0.0007	0.002
	1.0999879	1.1 to 3.299999 MΩ COMP OFF	1.100000	0.0000121	0.0011	0.002
	1.6499947		1.650000	0.0000053	0.0003	0.002
	3.3000094		3.299999	-0.0000104	-0.0003	0.007
	3.299987	3.3 MΩ to 10.99999 MΩ COMP OFF	3.30000	0.000013	0.0004	0.007
	5.500030		5.50000	-0.000030	-0.001	0.007
	11.000159		10.99999	-0.000169	-0.002	0.007
	10.999420	11 to 32.99999 MΩ COMP OFF	11.00000	0.000580	0.005	0.007
	16.499413		16.50000	0.000587	0.004	0.05
	32.999512		32.99999	0.000478	0.001	0.05
	32.99616	33 to 109.9999 MΩ COMP OFF	33.0000	0.00384	0.012	0.05
	54.99156		55.0000	0.00844	0.015	0.02
	109.98273		109.9999	0.01717	0.016	0.02
	109.9468	110 MΩ to 329.999 MΩ COMP OFF	110.000	0.0532	0.048	0.02
	164.9483		165.000	0.0517	0.031	0.02
	329.9580		329.999	0.0410	0.012	0.5
	329.900	330 to 1100.00 MΩ COMP OFF	330.00	0.100	0.030	0.5
	500.197		500.00	-0.197	-0.039	0.3
	1101.870		1100.00	-1.870	-0.170	0.3

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
Digitally signed by PANKAJ VASUDEO AMBEKAR
Date: 2025.02.20 11:46:11 +05'30'
Authorised Signatory

Calibrator Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

FREQUENCY CALIBRATION

Calibration Standard		Device Under Calibration		Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Units	% of Rdg.	
	Hz		**Hz**	**Hz**		
Auto	0.0399995		0.04	0.0000005	0.00125	0.005
Hz	0.9999978		1.00	0.0000022	0.00022	0.002
	9.9999956	0.01 to 119.99 Hz	10.00	0.0000044	0.00004	0.0001
	49.999959		50.00	0.000041	0.00008	0.0001
	99.99992	at 2 VAC	100.00	0.00008	0.00008	0.0001
	119.89990		119.90	0.00010	0.00008	0.0001
	119.99991	120.0 to 1199.9 Hz	120.0	0.00009	0.00008	0.0001
	999.9992	at 2 VAC	1000.0	0.0008	0.00008	0.0001
	1199.8990		1199.9	0.0010	0.00008	0.0001
	kHz		**kHz**	**kHz**		
	1.1999990	1.2 kHz to 11.999 kHz	1.200	0.0000010	0.00008	0.0001
	9.999992	at 2 VAC	10.000	0.000008	0.00008	0.0001
	11.989990		11.990	0.000010	0.00008	0.0001
	11.999990	12 kHz to 119.99 kHz	12.00	0.000010	0.00008	0.0001
	99.99992	at 2 VAC	100.00	0.00008	0.00008	0.0001
	119.89990		119.90	0.00010	0.00008	0.0001
	119.99990	120 kHz to 1199.9 kHz	120.0	0.00010	0.00008	0.0001
	MHz	at 2 VAC	**MHz**	**MHz**		
	0.9999992		1.0000	0.0000008	0.00008	0.0001
	1.1998990		1.1999	0.0000010	0.00008	0.0001
	MHz		**MHz**	**MHz**		
	1.1999990	1.2 MHz to 2 MHz	1.200	0.0000010	0.00008	0.0001
	1.9999984	at 2 VAC	2.000	0.0000016	0.00008	0.0001

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:47:21 +05'30'
Authorised Signatory

Calibrator Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

CAPACITANCE CALIBRATION

Calibration Standard		Device Under Calibration		Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Units	% of Rdg	
	pF		**pF**	**pF**		
Auto Farad 1 kHz	223.04	220 pF to 399.9 nF	220.0	-3.04	-1.36	1
	302.43		300.0	-2.43	-0.80	0.8
	401.57		399.9	-1.67	-0.42	0.8
	nF		**nF**	**nF**		
	0.40065	0.4 nF to 1.0999 nF	0.4000	-0.00065	-0.16	0.7
	0.55046		0.5500	-0.00046	-0.08	0.4
	1.1000		1.0999	-0.0001	-0.01	0.4
	1.1001	1.1 nF to 3.2999 nF	1.1000	-0.0001	-0.01	0.3
	1.6510		1.6500	-0.0010	-0.06	0.3
	3.3038		3.2999	-0.0039	-0.12	0.3
	3.3074	3.3 nF to 10.9999 nF	3.3000	-0.0074	-0.22	0.1
	5.505		5.5000	-0.005	-0.09	0.1
	10.999		10.9999	0.001	0.01	0.1
	10.997	11 nF to 32.9999 nF	11.0000	0.003	0.03	0.1
	16.491		16.5000	0.009	0.05	0.1
	32.971		32.9999	0.029	0.09	0.1
	32.976	33 nF to 109.999 nF	33.000	0.024	0.07	0.1
	54.96		55.000	0.04	0.07	0.1
	109.93		109.999	0.07	0.06	0.1
	109.96	110 nF to 329.999 nF	110.000	0.04	0.04	0.1
	164.90		165.000	0.10	0.06	0.1
	329.88		329.999	0.12	0.04	0.1
	µF		**µF**	**µF**		
	0.33035	0.33 µF to 1.09999 µF	0.33000	-0.00035	-0.11	0.3
	0.55091		0.55000	-0.00091	-0.17	0.3
Auto Farad 100 Hz	1.0992		1.09999	0.0008	0.07	0.1
	1.0956	1.1 µF to 3.29999 µF	1.10000	0.0044	0.40	0.1
	1.6451		1.65000	0.0049	0.30	0.2
	3.2938		3.29999	0.0062	0.19	0.2
	3.2935	3.3 µF to 10.9999 µF	3.3000	0.0065	0.20	0.1
	5.492		5.5000	0.008	0.15	0.1
	10.989		10.9999	0.011	0.10	0.1
	10.986	11 µF to 32.9999 µF	11.0000	0.014	0.13	0.1
	16.485		16.5000	0.015	0.09	0.1
	32.998		32.9999	0.002	0.01	0.1
	33.022	33 µF to 109.999 µF	33.000	-0.022	-0.07	0.1
	55.09		55.000	-0.09	-0.16	0.1
	110.41		109.999	-0.41	-0.37	0.1
	110.404	110 µF to 329.999 µF	110.000	-0.404	-0.37	0.1
	165.96		165.000	-0.96	-0.58	0.1
	334.08		329.999	-4.08	-1.22	0.1

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:47:58 +05'30'
Authorised Signatory

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CC/2287
ET-INS-09

Calibrator Sr. No. : 3043901
Current Coil Sr. No. : 20080897
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Calibration Results :

CURRENT COIL CALIBRATION

Calibration Standard		Device Under Calibration		Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Units	% of Rdg.	
	A		A	A		
Auto Volts DC with Current Clamp	21.054	1000 ADC (Calibrator with 50 Turns Current Coil)	21.00	-0.054	-0.26	0.8
	100.281		100.00	-0.281	-0.28	0.8
	200.805		200.00	-0.805	-0.40	0.8
	400.818		400.00	-0.818	-0.20	0.8
	601.870		600.00	-1.870	-0.31	0.8
	803.231		800.00	-3.231	-0.40	0.8
	1003.921		1000.00	-3.921	-0.39	0.8
	A		A	A		
Auto Volts AC at 50 Hz with Current Clamp	20.973	1000 AAC 50 Hz (Calibrator with 50 Turns Current Coil)	21.00	0.027	0.13	0.7
	100.008		100.00	-0.008	-0.01	0.7
	199.947		200.00	0.053	0.03	0.7
	400.019		400.00	-0.019	0.00	0.7
	600.154		600.00	-0.154	-0.03	0.7
	800.383		800.00	-0.383	-0.05	0.7
	1000.795		1000.00	-0.795	-0.08	0.7

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:48:32 +05'30'
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Instrument Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

DC POWER CALIBRATION

Calibration Standard		Device Under Calibration			Error		Expanded Uncertainty (±) in %
Range	Reading	Voltage	Current	Wattage	Units	% of Rdg	
	mW	**V**	**A**	**mW**	**mW**		
Auto	9.9998	1	0.01	10.00	0.0002	0.002	0.04
Volts &	**W**	**V**	**A**	**W**	**W**		
Auto	1.0000	10	0.1	1.000	0.0000	0.000	0.05
Amps							
DC	1.0000	100	0.01	1.000	0.0000	0.000	0.05
	9.998	10	1	10.00	0.002	0.020	0.05
	99.981	100	1	100.0	0.019	0.019	0.05
	1149.94	230	5	1150.0	0.06	0.005	0.10
	4149.55	415	10	4150	0.45	0.011	0.10
	11998.7	600	20	12000	1.3	0.011	0.15
	19998.04	1000	20	20000	1.96	0.010	0.15

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:49:01 +05'30'
Authorised Signatory

ilac-MRA
CC 2267

Instrument Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Calibration Results :

AC POWER CALIBRATION AT 50 Hz

Calibration Standard		Device Under Calibration				Error		Expanded Uncertainty (±) in %
Range	Reading	Voltage	Current	PF	Reading	Units	% of Rdg.	
	mW	**V**	**A**	**PF**	**mW**	**mW**		
Auto	399.99	40	0.01	1	400.0	0.01	0.003	0.02
Volts AC,	**W**				**W**	**W**		
Amps AC,	4.0004	40	0.1	1	4.000	-0.0004	-0.010	0.02
at 50 Hz	40.003	40	1	1	40.00	-0.003	-0.007	0.02
0 - 1 - 0	1.2000	120	0.01	1	1.200	0.0000	0.000	0.02
PF	12.002	120	0.1	1	12.00	-0.002	-0.017	0.02
at 50 Hz	120.02	120	1	1	120.0	-0.02	-0.017	0.02
Lag / Lead	1149.86	230	5	1	1150.0	0.14	0.012	0.02
	4800.10	240	20	1	4800	-0.10	-0.002	0.02
	9599.86	480	20	1	9600	0.14	0.001	0.02
	59.95	600	0.1	1	60.00	0.05	0.083	0.02
	599.50	600	1	1	600.0	0.50	0.083	0.02
	5993.63	600	10	1	6000	6.37	0.106	0.02
	999.20	1000	1	1	1000	0.80	0.080	0.02
	4994.71	1000	5	1	5000	5.29	0.106	0.02
	9989.27	1000	10	1	10000	10.73	0.107	0.02
	mW	**V**	**A**	**LEAD**	**mW**	**mW**		
	240.03	120	0.01	0.2	240	-0.03	-0.012	0.1
	W				**W**	**W**		
	2.4013	120	0.1	0.2	2.40	-0.0013	-0.054	0.1
	24.003	120	1	0.2	24.0	-0.003	-0.012	0.1
	230.18	230	5	0.2	230.0	-0.18	-0.078	0.1
	240.38	120	10	0.2	240	-0.38	-0.158	0.1
	480.36	240	10	0.2	480	-0.36	-0.075	0.1
	961.70	240	20	0.2	960	-1.70	-0.177	0.1
	1923.01	480	20	0.2	1920	-3.01	-0.157	0.1
	mW	**V**	**A**	**LAG**	**mW**	**mW**		
	240.26	120	0.01	0.2	240	-0.26	-0.108	0.1
	W				**W**	**W**		
	2.4026	120	0.1	0.2	2.40	-0.0026	-0.108	0.1
	24.037	120	1	0.2	24.0	-0.037	-0.154	0.1
	230.30	230	5	0.2	230.0	-0.30	-0.130	0.1
	239.82	120	10	0.2	240	0.18	0.075	0.1
	480.33	240	10	0.2	480	-0.33	-0.069	0.1
	960.73	240	20	0.2	960	-0.73	-0.076	0.1
	1918.72	480	20	0.2	1920	1.28	0.067	0.1

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:49:35 +05'30'
Authorised Signatory

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CC 2287
EF-INS-09

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई ४०००२२
INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI - 400 022

Instrument Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

POWER FACTOR CALIBRATION

Calibration Standard		Device Under Calibration		Error	Expanded Uncertainty (±) in PF
Range	Reading	Range	Reading	Units	
	PF		**PF**	**PF**	
Auto	1.0000	120 VAC,	1.000	0.0000	0.002
Volts &	**LAG**	10mAAC	**LAG**	**LAG**	
Amps	0.1001	at 50 Hz	0.100	-0.0001	0.002
AC	0.2001		0.200	-0.0001	0.002
0-1-0 PF	0.5001		0.500	-0.0001	0.002
Lag/Lead	0.8001		0.800	-0.0001	0.002
	LEAD		**LEAD**	**LEAD**	
	0.1000		0.100	0.0000	0.002
	0.2000		0.200	0.0000	0.002
	0.4999		0.500	0.0001	0.002
	0.7999		0.800	0.0001	0.002
	PF		**PF**	**PF**	
Auto	1.0000	480 VAC,	1.000	0.0000	0.002
Volts &	**LAG**	20 AAC	**LAG**	**LAG**	
Amps	0.1001	at 50 Hz	0.100	-0.0001	0.002
AC	0.2000		0.200	0.0000	0.002
0-1-0 PF	0.4999		0.500	0.0001	0.002
Lag/Lead	0.7999		0.800	0.0001	0.002
	LEAD		**LEAD**	**LEAD**	
	0.1001		0.100	-0.0001	0.002
	0.2002		0.200	-0.0002	0.002
	0.5001		0.500	-0.0001	0.002
	0.8002		0.800	-0.0002	0.002

PHASE ANGLE CALIBRATION

Calibration Standard		Device Under Calibration		Error	Expanded Uncertainty (±) in Degree
Range	Reading	Range	Reading	in Units	
	degree		**degree**	**degree**	
0 ° to 360°	0.12	0-UPF	0.10	-0.02	0.01
	30.02	240 V, 0.01 A AC	30.00	-0.02	0.01
	45.02	at 50Hz	45.00	-0.02	0.01
	60.02		60.00	-0.02	0.01
	90.01		90.00	-0.01	0.01

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:50:08 +05'30'
Authorised Signatory

CC-2287
FF-INS-09

Instrument Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

THERMOCOUPLE CALIBRATION SOURCE MODE

Calibration Standard		Device Under Calibration		Error in	Expanded Uncertainty (±) in °C
Range	Reading	Range	Reading	Units	
	°C		°C	°C	
Auto Ohms	-199.9988	RTD (Pt-100)	-200.000	-0.0012	0.02
	-0.0015	(-200 to 800 °C)	0.000	0.0015	0.02
	99.9847	(Alpha - 385)	100.000	0.0153	0.02
	499.9891		500.000	0.0109	0.02
	800.0063		800.000	-0.0063	0.02
Auto mVDC	°C				
	-209.037	J Type - T/C	-209.00	0.037	0.05
	0.470	(-210 to 1200 °C)	0.50	0.030	0.05
	99.961		100.00	0.039	0.05
	499.948		500.00	0.052	0.05
	1199.991		1200.00	0.009	0.05
	-200.125	K Type - T/C	-200.00	0.125	0.2
	0.441	(-200 to 1372 °C)	0.50	0.059	0.2
	99.966		100.00	0.034	0.2
	499.950		500.00	0.050	0.2
	1369.971		1370.00	0.029	0.2
	-200.190	N Type- T/C	-200.00	0.190	0.20
	0.427	(-200 to 1300 °C)	0.50	0.073	0.16
	99.977		100.00	0.023	0.16
	499.953		500.00	0.047	0.16
	1299.967		1300.00	0.033	0.16
	2.700	R Type - T/C	3.00	0.300	0.08
	99.800	(0 to 1767 °C)	100.00	0.200	0.08
	499.882		500.00	0.118	0.08
	999.869		1000.00	0.131	0.08
	1499.843		1500.00	0.157	0.08
	1766.842		1767.00	0.158	0.08
	2.860	S Type - T/C	3.00	0.140	0.08
	99.800	(0 to 1767 °C)	100.00	0.200	0.08
	499.900		500.00	0.100	0.08
	999.891		1000.00	0.109	0.08
	1499.817		1500.00	0.183	0.08
	1766.800		1767.00	0.200	0.08

Note : 1) Value mentioned above is a mean of 5 readings.
2) Above calibration is carried out by simulation method.
3) While doing above temperature calibration RJ setting was in External Mode at 0°C.

PANKAJ VASUDEO AMBEKAR
Digitally signed by PANKAJ VASUDEO AMBEKAR
Date: 2025.02.20 11:50:43 +05'30'
Authorised Signatory

ilac-MRA
CC/2267

Instrument Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

THERMOCOUPLE CALIBRATION SOURCE MODE

Calibration Standard		Device Under Calibration		Error in	Expanded Uncertainty (±) in °C
Range	Reading	Range	Reading	Units	
	°C		°C	°C	
Auto mVDC	600.000	B Type- T/C (600 to 1820 °C)	600.00	0.000	0.07
	899.988		900.00	0.012	0.07
	1200.036		1200.00	-0.036	0.07
	1500.008		1500.00	-0.008	0.07
	1819.982		1820.00	0.018	0.07
	-229.864	T Type- T/C (-250 to 400 °C)	-230.00	-0.136	0.12
	0.426		0.50	0.074	0.10
	99.957		100.00	0.043	0.10
	199.975		200.00	0.025	0.10
	399.981		400.00	0.019	0.10
	-199.453	L Type- T/C (-200 °C to 900 °C	-199.00	0.453	0.07
	0.492		0.50	0.008	0.07
	100.028		100.00	-0.028	0.07
	500.173		500.00	-0.173	0.07
	899.061		899.00	-0.061	0.07
	-199.720	U Type- T/C -200 °C to 600 °C	-200.00	-0.280	0.07
	0.455		0.50	0.045	0.07
	100.002		100.00	-0.002	0.07
	300.017		300.00	-0.017	0.07
	599.111		599.00	-0.111	0.07
	0.877	C Type - T/C 0°C to 2316°C	1.00	0.123	0.10
	99.925		100.00	0.075	0.07
	499.995		500.00	0.005	0.07
	1000.089		1000.00	-0.089	0.07
	1500.319		1500.00	-0.319	0.07
	2000.575		2000.00	-0.575	0.07
	2300.690		2300.00	-0.690	0.07
	-250.070	E Type - T/C -250°C to 1000°C	-250.00	0.070	0.2
	0.466		0.50	0.034	0.16
	99.991		100.00	0.009	0.16
	499.985		500.00	0.015	0.16
	999.927		1000.00	0.073	0.16

Note : 1) Value mentioned above is a mean of 5 readings.
2) Above calibration is carried out by simulation method.
3) While doing above temperature calibration RJ setting was in External Mode at 0°C.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:51:19 +05'30'
Authorised Signatory

ilac-MRA

CC/2787

Instrument Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

THERMOCOUPLE CALIBRATION MESURE MODE

Calibration Standard		Device Under Calibration		Error	Expanded Uncertainty (±) in °C
Range	Reading	Range	Reading	Units	
	°C		°C	°C	
Auto mVDC	-209.00	J Type- T/C	-209.01	-0.010	0.05
	0.22	(-210 to 1200 °C)	0.19	-0.030	0.05
	100.00		100.02	0.020	0.05
	500.00		500.02	0.020	0.05
	1200.00		1199.96	-0.040	0.05
	-200.00	K Type- T/C	-199.88	0.120	0.2
	0.282	(-200 to 1372 °C)	0.32	0.038	0.2
	100.00		100.05	0.050	0.2
	500.00		500.02	0.020	0.2
	1370.00		1370.07	0.070	0.2
	3.00	R Type- T/C	2.98	-0.020	0.08
	100.00	(0 to 1767 °C)	99.93	-0.070	0.08
	500.00		499.92	-0.080	0.08
	1000.00		999.96	-0.040	0.08
	1500.00		1500.01	0.010	0.08
	1767.000		1767.06	0.060	0.08
	3.00	S Type- T/C	3.04	0.040	0.08
	100.00	(0 to 1767 °C)	99.98	-0.020	0.08
	500.00		499.92	-0.080	0.08
	1000.00		999.92	-0.080	0.08
	1500.00		1499.99	-0.010	0.08
	1767.00		1766.90	-0.100	0.08
	-230.00		-229.99	0.010	0.12
	0.28	T Type - T/C	0.29	0.008	0.12
	100.00	(-250 to 400 °C)	100.02	0.020	0.10
	200.00		199.99	-0.010	0.10
	400.00		399.96	-0.040	0.10

Note : 1) Value mentioned above is mean of 5 readings.
2) Above calibration is carried out by simulation method.
3) While doing above temperature calibration RJ setting was in External Mode at 0°C.

PANKAJ VASUDEO AMBEKAR
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TF-INS-09

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई ४०००२२
INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI - 400 022

Instrument Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

THERMOCOUPLE CALIBRATION MESURE MODE

Calibration Standard		Device Under Calibration		Error	Expanded Uncertainty (±) in °C
Range	Reading	Range	Reading	Units	
	°C		°C	°C	
Auto mVDC	600.00	B Type- T/C (600 to 1820 °C)	600.00	0.00	0.07
	900.00		900.02	0.02	0.07
	1200.00		1199.96	-0.04	0.07
	1500.00		1500.01	0.01	0.07
	1800.00		1799.99	-0.01	0.07
	-200.00	N Type- T/C (-200 to 1300 °C)	-199.82	0.18	0.20
	0.423		0.52	0.097	0.16
	100.00		100.04	0.04	0.16
	500.00		500.04	0.04	0.16
	1300.00		1300.04	0.04	0.16
	-200.00	L Type- T/C (-200 °C to 900 °C	-199.50	0.50	0.07
	0.22		0.21	-0.01	0.07
	100.00		99.94	-0.06	0.07
	500.00		499.79	-0.21	0.07
	900.00		899.92	-0.08	0.07
	-200.00	U Type- T/C -200 °C to 600 °C	-200.46	-0.46	0.07
	0.28		0.28	0.005	0.07
	100.00		99.96	-0.04	0.07
	300.00		299.95	-0.05	0.07
	600.00		599.86	-0.14	0.07
	1.00	C Type - T/C 0°C to 2316°C	1.03	0.03	0.10
	100.00		100.00	0.00	0.07
	500.00		499.93	-0.07	0.07
	1000.00		999.80	-0.20	0.07
	1500.00		1499.56	-0.44	0.07
	2000.00		1999.27	-0.73	0.07
	2300.00		2299.09	-0.91	0.07
	-249.00	E Type - T/C -250°C to 1000°C	-249.03	-0.03	0.2
	0.19		0.20	0.01	0.16
	100.00		100.00	0.00	0.16
	500.00		499.99	-0.01	0.16
	1000.00		1000.03	0.03	0.16

Note : 1) Value mentioned above is mean of 5 readings.
2) Above calibration is carried out by simulation method.
3) While doing above temperature calibration RJ setting was in External Mode at 0°C.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:52:45 +05'30'
Authorised Signatory

Instrument Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

OSCILLOSCOPE OPTION DC VOLTAGE

Calibration Standard		Device Under Calibration		Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Units	% of Rdg.	
	mV		**mV**	**mV**		
Auto	1.0099	0 mV to	1.000	-0.0099	-0.98	0.5
Volts	10.0096	± 130 V	10.000	-0.0096	-0.10	0.05
Volts	24.9128	DC	24.900	-0.0128	-0.05	0.05
DC	25.011	**at 1 MΩ**	25.00	-0.011	-0.04	0.05
DC	50.014		50.00	-0.014	-0.03	0.05
	109.918		109.90	-0.018	-0.02	0.02
	110.009		110.0	-0.009	-0.01	0.02
	V		**V**	**V**		
	1.0001		1.0000	-0.0001	-0.010	0.01
	2.1903		2.1900	-0.0003	-0.014	0.01
	2.2003		2.200	-0.0003	-0.014	0.01
	10.0015		10.000	-0.0015	-0.015	0.01
	10.9916		10.990	-0.0016	-0.015	0.01
	11.0000		11.00	0.0000	0.000	0.01
	50.0024		50.00	-0.0024	-0.005	0.01
	100.0054		100.00	-0.0054	-0.005	0.01
	130.0070		130.00	-0.0070	-0.005	0.01
	mV		**mV**	**mV**		
	1.0028	0 mV to	1.000	-0.0028	-0.3	0.5
	10.0156	± 6.6 V	10.000	-0.0156	-0.2	0.05
	24.9261	DC	24.900	-0.0261	-0.1	0.05
	25.0262	**at 50 Ω**	25.00	-0.0262	-0.10	0.05
	50.0430		50.00	-0.0430	-0.09	0.05
	100.0704		100.00	-0.0704	-0.07	0.02
	109.9763		109.90	-0.0763	-0.07	0.02
	110.0680		110.0	-0.0680	-0.06	0.02
	V		**V**	**V**		
	1.0006		1.0000	-0.0006	-0.06	0.01
	2.1914		2.1900	-0.0014	-0.06	0.01
	2.2014		2.200	-0.0014	-0.06	0.01
	6.6032		6.599	-0.0042	-0.06	0.01

Note : Value mentioned above is mean of 5 readings.

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Date: 2025.02.20 11:53:31 +05'30'
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CC-2267
FF-INS-09

Instrument Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

OSCILLOSCOPE OPTION AC VOLTAGE CALIBRATION

Calibration Standard		Device Under Calibration		Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Units	% of Rdg.	
	mVp-p		**mVp-p**	**mVp-p**		
Auto	1.0031	1 mVp-p to	1.000	-0.0031	-0.31	0.5
Volts	9.9972	130 Vp-p	10.000	0.0028	0.03	0.05
DC	24.9158	AC	24.900	-0.0158	-0.06	0.03
	25.0090	**at 1 MΩ**	25.00	-0.0090	-0.04	0.02
	50.0249	**1 kHz**	50.00	-0.0249	-0.05	0.02
	109.9695		109.90	-0.0695	-0.06	0.02
	110.0233		110.0	-0.0233	-0.02	0.02
	Vp-p		**Vp-p**	**Vp-p**		
	0.5001		0.5000	-0.0001	-0.02	0.01
	1.0005		1.0000	-0.0005	-0.05	0.01
	2.1913		2.1900	-0.0013	-0.06	0.01
	2.2007		2.200	-0.0007	-0.032	0.01
	10.0064		10.000	-0.0064	-0.064	0.01
	10.9967		10.990	-0.0067	-0.06	0.01
	10.9999		11.00	0.0001	0.001	0.01
	49.9960		50.00	0.0040	0.008	0.01
	100.0035		100.00	-0.0035	-0.003	0.01
	130.0140		130.00	-0.0140	-0.011	0.01
	mVp-p		**mVp-p**	**mVp-p**		
	0.9909	1 mVp-p to	1.000	0.0091	0.92	0.5
	9.9897	6.6 Vp-p	10.000	0.0103	0.10	0.05
	24.8943	AC	24.900	0.0057	0.02	0.03
	24.9960	**at 50 Ω**	25.00	0.0040	0.02	0.02
	50.0063	**1 kHz**	50.00	-0.0063	-0.01	0.02
	100.0255		100.00	-0.0255	-0.03	0.02
	109.9232		109.90	-0.0232	-0.02	0.02
	109.9828		110.0	0.0172	0.02	0.02
	Vp-p		**Vp-p**	**Vp-p**		
	0.50001		0.5000	-0.00001	-0.002	0.01
	1.00019		1.0000	-0.00019	-0.02	0.01
	2.19049		2.1900	-0.00049	-0.02	0.01
	2.20031		2.200	-0.00031	-0.01	0.01
	6.60112		6.599	-0.00212	-0.03	0.01

Note : Value mentioned above is mean of 5 readings.

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Date: 2025.02.20 11:54:13 +05'30'
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CC-2287
FT-IMS-09

Instrument Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

LEVELED SINE WAVE FUNCTION CALIBRATION

Calibration Standard		Device Under Calibration		Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Units	% of Rdg.	
	mVp-p		**mVp-p**	**mVp-p**		
Auto	99.452		100.0 mV 50 kHz	0.548	0.6	0.5
Volts	100.253	5 mVp-p to	100.0 mV 10 MHz	-0.253	-0.3	5
AC	99.943	5.5 Vp-p	100.0 mV 50 MHz	0.057	0.1	5
	99.920	at 50 Ω	100.0 mV 100 MHz	0.080	0.1	5
	100.411		100.0 mV 200 MHz	-0.411	-0.4	5
	99.688		100.0 mV 300 MHz	0.312	0.3	5
	99.632		100.0 mV 500 MHz	0.368	0.4	7
	99.819		100.0 mV 600 MHz	0.181	0.2	7
	98.128		100.0 mV 1100 MHz	1.872	1.9	7
	Vp-p		**Vp-p**	**Vp-p**		
	0.9980		1.000 V 50 kHz	0.0020	0.2	0.5
	0.9915		1.000 V 10 MHz	0.0085	0.9	5
	0.9933		1.000 V 50 MHz	0.0067	0.7	5
	1.0112		1.000 V 100 MHz	-0.0112	-1.1	5
	1.0112		1.000 V 200 MHz	-0.0112	-1.1	5
	0.9937		1.000 V 300 MHz	0.0063	0.6	5
	1.0132		1.000 V 500 MHz	-0.0132	-1.3	7
	0.9964		1.000 V 600 MHz	0.0036	0.4	7
	0.9797		1.000 V 1100 MHz	0.0203	2.1	7
	2.5052		2.500 V 50 kHz	-0.0052	-0.2	0.5
	2.4952		2.500 V 10 MHz	0.0048	0.2	5
	2.5153		2.500 V 50 MHz	-0.0153	-0.6	5
	2.5057		2.500 V 100 MHz	-0.0057	-0.2	5
	2.4913		2.500 V 200 MHz	0.0087	0.3	5
	2.4816		2.500 V 300 MHz	0.0184	0.7	5
	2.4591		2.500 V 500 MHz	0.0409	1.7	7
	2.4743		2.500 V 600 MHz	0.0257	1.0	7
	2.4331		2.500 V 1100 MHz	0.0669	2.7	7
	3.5013		3.500 V 50 kHz	-0.0013	-0.04	0.5
	3.4993		3.500 V 10 MHz	0.0007	0.02	5
	3.5090		3.500 V 50 MHz	-0.0090	-0.3	5
	3.5019		3.500 V 100 MHz	-0.0019	-0.1	5
	3.5039		3.500 V 200 MHz	-0.0039	-0.1	5
	3.4962		3.500 V 300 MHz	0.0038	0.1	5
	3.4679		3.500 V 500 MHz	0.0321	0.9	7
	3.4398		3.500 V 600 MHz	0.0602	1.8	7
	3.3958		3.500 V 1100 MHz	0.1042	3.1	7
	5.0031		5.000 V 50 kHz	-0.0031	-0.1	0.5
	5.0084		5.000 V 10 MHz	-0.0084	-0.2	5
	5.0097		5.000 V 50 MHz	-0.0097	-0.2	5
	5.0039		5.000 V 100 MHz	-0.0039	-0.1	5
	4.9986		5.000 V 200 MHz	0.0014	0.03	5
	5.0026		5.000 V 300 MHz	-0.0026	-0.1	5
	4.8654		5.000 V 600 MHz	0.1346	2.8	7

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:55:02 +05'30'
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CC 2287
TC-MS-09

वैद्युतिक मापन उपयंत्र अभिकल्प संस्थान, मुंबई ४०००२२
INSTITUTE FOR DESIGN OF ELECTRICAL
MEASURING INSTRUMENTS, MUMBAI - 400 022

Instrument Sr. No. : 3043901
Date of Calibration : 10/02 to 18/02/2025
ULR No. : CC228725100000389F

Certificate No. : CC/ECL/1811/24-25

Calibration Results :

TIME MARKER CALIBRATION

Calibration Standard		Device Under Calibration		Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Units	% of Rdg.	
	ns		**ns**	**ns**		
Auto Range	0.99999930	1 ns to 5 s	1.000	0.00000070	0.00007	0.0001
	1.99999848		2.000	0.00000152	0.00008	0.0001
	4.99999595		5.000	0.00000405	0.00008	0.0001
	9.99999200		10.00	0.00000800	0.00008	0.0001
	19.99998368		20.00	0.00001632	0.00008	0.0001
	49.999963		50.00	0.000037	0.00007	0.0001
	99.99992		100.0	0.00008	0.00008	0.0001
	499.99960		500.0	0.00040	0.00008	0.0001
	µs		**µs**	**µs**		
	0.9999992		1.000	0.0000008	0.00008	0.0001
	1.9999984		2.000	0.0000016	0.00008	0.0001
	4.9999961		5.000	0.0000039	0.00008	0.0001
	9.999992		10.00	0.000008	0.00008	0.0001
	19.999984		20.00	0.000016	0.00008	0.0001
	49.99996		50.00	0.00004	0.00008	0.0001
	99.99992		100.0	0.00008	0.00008	0.0001
	199.99984		200.0	0.00016	0.00008	0.0001
	499.99962		500.0	0.00038	0.00008	0.0001
	ms		**ms**	**ms**		
	0.9999993		1.000	0.0000007	0.00007	0.0001
	1.9999984		2.000	0.0000016	0.00008	0.0001
	4.9999962		5.000	0.0000038	0.00008	0.0001
	9.999992		10.00	0.000008	0.00008	0.0001
	19.999984		20.00	0.000016	0.00008	0.0001
	50.000043		50.00	-0.000043	-0.00009	0.0001
	100.000046		100.0	-0.000046	-0.00005	0.0001
	s		**s**	**s**		
	1.0000023		1.000	-0.0000023	-0.00023	0.002
	5.0000569		5.000	-0.0000569	-0.00114	0.01

OSCILLOSCOPE OPTION LEVSINE FREQUENCY CALIBRATION

Calibration Standard		Device Under Calibration		Error		Expanded Uncertainty (±) in %
Range	Reading	Range	Reading	Units	% of Rdg.	
	kHz		**kHz**	**kHz**		
Auto Hz	50.000026	50 kHz to 1100 MHz at 3 Vp-p	50	-0.000026	-0.00005	0.0001
	MHz		**MHz**	**MHz**		
	1.0000006		1.00	-0.0000006	-0.00006	0.0001
	10.00001		10.00	-0.00001	-0.00006	0.0001
	100.00007		100.00	-0.00007	-0.00007	0.0001
	300.00021		300.00	-0.00021	-0.00007	0.0001
	500.00035		500.00	-0.00035	-0.00007	0.0001
	600.00044		600.00	-0.00044	-0.00007	0.0001
	800.00057		800.00	-0.00057	-0.00007	0.0001
	1100.00068		1100.00	-0.00068	-0.00006	0.0001

Note : Value mentioned above is mean of 5 readings.

PANKAJ VASUDEO AMBEKAR
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Date: 2025.02.20 11:55:56 +05'30'

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CC-2287

FF-INS-09

END OF CALIBRATION CERTIFICATE