Laboratory	**Government Electrical Standards Laboratory, Office of The Chief Electrical Inspector to Government, Thiru. Vi. Ka. Industrial Estate, Guindy, Chennai, Tamil Nadu**		
Accreditation Standard	**ISO/IEC 17025: 2005**		
Discipline	**Electro-Technical Calibration**	**Issue Date**	**19.07.2014**
Certificate Number	**C-0832**	**Valid Until**	**18.07.2016**
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	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
	SOURCE			
1.	**DC VOLTAGE$**	10 mV to 100 mV	0.057 % to 0.012 %	Using Universal Calibration System Fluke 9100E By Direct Method
		100 mV to 1 V	0.012 %	
		1 V to 100 V	0.12 % to 0.013 %	
		100 V to 1000 V	0.013 % to 0.0093 %	
2.	**AC VOLTAGE$**	**50 Hz**		
		10 mV to 100 mV	4.48 % to 0.077 %	Universal Calibration System Fluke 9100E By Direct Method
		100 mV to 1 V	0.077 % to 0.070 %	
		1 V to 100 V	0.70 % to 0.056 %	
		100 V to 1000 V	0.056 % to 0.074 %	
3.	**DC CURRENT$**	100 µA to 100 mA	0.031 % to 0.038 %	Using Universal Calibration System Fluke 9100E. By Direct Method
		100 mA to 1 A	0.038 % to 0.36 %	
		1 A to 10 A	0.36 % to 0.11 %	
		10 A to 100 A	0.11 % to 0.39 %	Using Universal Calibration System Fluke 9100E,Current Coil By Direct Method
		100 A to 990 A	0.39 % to 0.41 %	
4.	**AC CURRENT$**	**50Hz**		
		1 mA to 100 mA	0.68 % to 0.16 %	Using Universal Calibration System Fluke 9100E. By Direct Method
		100 mA to 1 A	0.16 % to 0.21 %	
		1 A to 10 A	0.21 % to 0.29 %	
		10 A to 100 A	0.29 % to 0.86 %	
		100 A to 990 A	0.86 % to 0.82 %	Using Universal Calibration System Fluke 9100E, with Current Coil by Direct Method

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Program Manager

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Convenor

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
5.	**RESISTANCE$**	0.1 Ω to 1 Ω	0.61 % to 0.18 %	Using Vaiseshika High Precision DRB 7400 by Direct Method
		1 Ω to 10 Ω 10 Ω to 100 Ω 100 Ω to 100 kΩ 100k Ω to 100 MΩ	0.18 % to 0.70 % 0.70 % to 0.16 % 0.16 % to 0.070 % 0.070 % to1.60 %	Using 9100 E by Direct Method
		100 MΩ to 1 GΩ 1 GΩ to 10 GΩ 10 GΩ to 100 GΩ 100 GΩ to 1000 GΩ	1.60 % to 2.61 % 2.61 % to 5.95 % 5.95 % to 6.16 % 6.16 %	Using Vaiseshika with Electronic Megger by Direct Method
6.	**FREQUENCY$**	10 Hz to 30 kHz	0.009 % to 0.01 %	Using Universal Calibration System Fluke 9100E. By Direct Method
	MEASURE			
1.	**DC VOLTAGE$**	100 mV to 1 V 1 V to 100 V 100 V to 1000 V	0.054 % to 0.0040 % 0.0040 % to 0.0010 % 0.0010 %	Using 8.5 Digit Reference Multimeter Fluke 8508A By Direct Method
2.	**AC VOLTAGE$**	**50 Hz**		
		100 mV to 1 V 1 V to100 V 100 V to 1000 V	0.30 % 0.30 % to 0.018 % 0.018 % to 0.037 %	Using 8.5 Digit Reference Multimeter Fluke 8508A By Direct Method
3.	**DC RESISTANCE$**	10 Ω to 100 Ω 100 Ω to 10 kΩ 10 kΩ to 100 kΩ 100 kΩ to 10 MΩ 10 MΩ to 400 MΩ	3.30 % to 0.0011 % 0.0011 % to 0.0010 % 0.0010 % 0.0010 % to 0.017 % 0.017 % to 1.55 %	Using 8.5 Digit Reference Multimeter Fluke 8508A By Direct Method

	Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
4.	**AC POWER[$]**	**240V @ 50 Hz**		Using ZERA Com 3003
	3 PHASE	5 mA to 50 mA	0.025 %	By Comparison Method
	ACTIVE PF: 0.5 to UPF	>50 mA to 10 A	0.015 %	
		>10 A to 120 A	0.017 %	
		63.5 V @ 50 Hz		
		5 mA to 50 mA	0.054 %	Using ZERA COM 3003 by
		50 mA to 10 A	0.015 %	Comparison Method
	ACTIVE POWER	**240V@47.5 Hz & 52.5 Hz**		Using ZERA COM 3003 by
	0.5 PT TO UPF	100mA to 10 A	0.015 %	Comparison Method
		>10A to 100 A	0.017 %	
		63.5V @47.5 Hz & 52.5Hz		Using ZERA COM 3003 by Comparison Method
		100 mA to 10A	0.015 %	
	REACTIVE POWER	**240 V @ 50 Hz**		Using ZERA COM 3003 by
	0.5 PF TO UPF	5 mA to 50 mA	0.023 %	Comparison Method
		50 mA to 10 A	0.015 %	
		>10 A to 120 A	0.018 %	
		63.5 V@50 Hz		Using ZERA COM 3003 by
		5 mA to 50 mA	0.056 %	Comparison Method
		>50 mA to 10 A	0.015 %	
	APPARENT POWER	**240 V @ 50 Hz**		Using ZERA COM 3003 by
		5 mA to 50 mA	0.014 %	Comparison Method
		>50mA to 10 A	0.012 %	
		>10 A to 120 A	0.013 %	

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Quantity Measured/ Instrument	Range / Frequency	*Calibration Measurement Capability (±)	Remarks
	63.5V@ 50Hz		
	5 mA to 50 mA	0.036 %	
	>50 mA to 10 A	0.018 %	
5. AC POWER AND ENERGY$			
1PHASE	**240V@ 50 Hz**		Using ZERA COM 3003 by
ACTIVE PF:	5mA to 50 mA	0.055 %	Comparison Method
0.5PF to UPF	>50mA to 10 A	0.015 %	
	10 A to 120 A	0.017 %	

*** Measurement Capability is expressed as an uncertainty (±) at a confidence probability of 95%**

$Only in Permanent Laboratory

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