National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name : MICROTEK TEST LAB, MICROTEK INTERNATIONAL PRIVATE LIMITED, H-41, UDYOG NAGAR, MAIN ROHTAK ROAD, NEW DELHI, DELHI, INDIA

Accreditation Standard ISO/IEC 17025:2017

Certificate Number TC-10533 **Page No** 1 of 4

Validity 20/04/2022 to 19/04/2024 **Last Amended on** -

S.No	Discipline / Group	Materials or Products tested	Component, parameter or characteristic tested / Specific Test Performed / Tests or type of tests performed	Test Method Specification against which tests are performed and / or the techniques / equipment used
Permanent Facility				
1	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Automatic Line Voltage Corrector (step type) (Up to 5KVA)	Physical Examination	Cl 12.2, IS 8448
2	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Automatic Line Voltage Correctors (Step Type) for Domestic Use (Upto 5 kVA)	Construction	Cl 6, IS 8448
3	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Automatic Line Voltage Correctors (Step Type) for Domestic Use (Upto 5 kVA)	Induced Voltage	Cl 12.8, IS 8448
4	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Automatic Line Voltage Correctors (Step Type) for Domestic Use (Upto 5 kVA)	Insulation Resistance	Cl 12.4, IS 8448
5	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Automatic Line Voltage Correctors (Step Type) for Domestic Use (Upto 5 kVA)	Marking	Cl 11, IS 8448
6	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Automatic Line Voltage Correctors (Step Type) for Domestic Use (Upto 5 kVA)	No-load current	Cl 12.6, IS 8448
7	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Automatic Line Voltage Correctors (Step Type) for Domestic Use (Upto 5 kVA)	Output Voltage	Cl 12.3, IS 8448
8	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Automatic Line Voltage Correctors (Step Type) for Domestic Use (Upto 5 kVA)	Stability test for relay operation	Cl 12.10, IS 8448
9	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Automatic Line Voltage Correctors (Step Type) for Domestic Use (Upto 5 kVA)	Test for continuous operation	Cl 12.11, IS 8448
10	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Photovoltaic Power System - Inverters (Up to 10kVA)	Backfeed Voltage Protection	Cl. No:4.6, IEC 62109-1, IS 16221 (Part 1)
11	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Photovoltaic Power System - Inverters (Up to 10kVA)	Efficiency Calculations	Cl 5.0, IS/IEC 61683
12	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Photovoltaic Power System - Inverters (Up to 10kVA)	Efficiency test circuits	Cl 6.0, IS/IEC 61683
13	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Photovoltaic Power System - Inverters (Up to 10kVA)	Electrical Rating Test	Cl 4.7, IS 16221 (Part 2), IEC 62109-2, Cl.4.7, IS 16221(Part 1), IEC 62109-1
14	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Photovoltaic Power System - Inverters (Up to 10kVA)	Handles & Manual Controls of securing of parts	Cl. No 13.1, IEC 62109-1, IS 16221 (Part 1)
15	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Photovoltaic Power System - Inverters (Up to 10kVA)	Internal wiring & connections	Cl. No 13.4, IEC 62109-1, IS 16221 (Part 1)
16	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Photovoltaic Power System - Inverters (Up to 10kVA)	Loss Measurement	Cl 7.1,7.2 IS/IEC 61683
17	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Photovoltaic Power System - Inverters (Up to 10kVA)	Marking and documentation	Cl 5, IS 16221 (Part 2), IEC 62109-2, Cl. 5 IS 16221(Part 1), IEC 62109-1

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18	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Photovoltaic Power System - Inverters (Up to 10kVA)	Thermal Testing	Cl 4, IS 16221 (Part 2), IEC 62109-2, Cl.4.3, IS 16221(Part 1), IEC 62109-1
19	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Photovoltaic Power System - Inverters (Up to 10kVA)	Thickness requirements for metal enclosures	Cl. No 13.8, IEC 62109-1, IS 16221 (Part 1)
20	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Servo-Motor Operated Automatic Line Voltage Correctors for Single Phase applications	Test for rate of correction	Cl 11.13, IS 9815 (Part 1)
21	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Servo-Motor Operated Automatic Line Voltage Correctors for Single-Phase applications (Upto 10kVA)	Induced Voltage Test	Cl 11.10, IS 9815 (Part 1)
22	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Servo-Motor Operated Automatic Line Voltage Correctors for Single-Phase applications (Upto 10kVA)	Physical Examination	Cl 6 & 10, IS 9815 (Part 1)
23	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Servo-Motor Operated Automatic Line Voltage Correctors for Single-Phase applications (upto 10kVA)	Insulation Resistance	Cl 11.4, IS 9815 (Part 1)
24	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Servo-Motor Operated Automatic Line Voltage Correctors for Single-Phase applications (Upto 10kVA)	Load Loss test and efficiency	Cl 11.9, IS 9815 (Part 1)
25	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Servo-Motor Operated Automatic Line Voltage Correctors for Single-Phase applications (Upto 10kVA)	Locked rotor test for servo-motor	Cl 11.14, IS 9815 (Part 1)
26	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Servo-Motor Operated Automatic Line Voltage Correctors for Single-Phase applications (Upto 10kVA)	Locked rotor test for servo-motor	Cl 11.14, IS 9815 (Part 1)
27	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Servo-Motor Operated Automatic Line Voltage Correctors for Single-Phase applications (Upto 10kVA)	Measurement of no-load losses	Cl 11.8, IS 9815 (Part 1)
28	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Servo-Motor Operated Automatic Line Voltage Correctors for Single-Phase applications (Upto 10kVA)	No-Load Current	Cl 11.7, IS 9815 (Part 1)
29	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Servo-Motor Operated Automatic Line Voltage Correctors for Single-Phase applications (Upto 10kVA)	Output Voltage	Cl 11.6, IS 9815 (Part 1)
30	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Servo-Motor Operated Automatic Line Voltage Correctors for Single-Phase applications (Upto 10kVA)	Test for continuous operation	Cl 11.11, IS 9815 (Part 1)
31	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Output – Linear load(4) output stored energy mode-full load	Cl. 6.4.2.4, IS 16242 (Part 3)/ IEC 62040-3
32	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Abnormal operating and fault Conditions	Cl 8.3, IS 16242 (Part 1), IEC 62040-1
33	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	AC and D.C power isolation	Cl 5.4, IS 16242 (Part 1), IEC 62040-1
34	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	AC Input Failure	Cl. 6.2.2.7, IS 16242 (Part 3), IEC 62040-3
35	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	AC Input Failure	Cl. 6.2.2.7, IS 16242 (Part 3)/ IEC 62040-3

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36	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	AC Input Return	Cl. 6.2.2.8, IS 16242 (Part 3)/ IEC 62040-3
37	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	AC Input Return	Cl. 6.2.2.8, IS 16242 (Part 3)/ IEC 62040-3
38	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Battery Location	Cl 7.6 (Excluding: 7.6.7), IS 16242 (Part 1), IEC 62040-1
39	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Cable and Interconnection Check	Cl. 6.2.2.2, IS 16242 (Part 3)/ IEC 62040-3
40	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Communication Circuits	Cl. 5.6, IS 16242 (Part 3)/ IEC 62040-3
41	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Components	Cl 4.5, IS 16242 (Part 1), IEC 62040-1
42	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Electrical Strength	Cl 8.2, IS 16242 (Part 1), IEC 62040-1
43	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Full Load	Cl. 6.2.2.5, IS 16242 (Part 3)/ IEC 62040-3
44	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Input – a.c. supply compatibility (1) Steady state input voltage tolerance test	Cl. 6.4.1.1, IS 16242 (Part 3)/ IEC 62040-3
45	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Input – a.c. supply compatibility (2) Input frequency tolerance	Cl. 6.4.1.2, IS 16242 (Part 3) / IEC 62040-3
46	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Input – a.c. supply compatibility (3) Inrush current	Cl. 6.4.1.3, IS 16242 (Part 3)/ IEC 62040-3
47	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Input – a.c. supply compatibility(5) Power factor	Cl. 6.4.1.5, IS 16242 (Part 3) / IEC 62040-3
48	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Input – a.c. supply compatibility(6) Efficiency	Cl. 6.4.1.6, IS 16242 (Part 3)/ IEC 62040-3
49	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Light Load and Functional test	Cl. 6.2.2.3, IS 16242 (Part 3)/ IEC 62040-3
50	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Marking and Instructions	Cl. 5.1.2, IS 16242 (Part 3)/ IEC 62040-3
51	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Marking and Instructions-Durability of Marking	Cl 4.7 (Excluding: 2.1.1.5/RD), IS 16242 (Part 1), IEC 62040-1
52	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	No Load	Cl. 6.2.2.4, IS 16242 (Part 3)/ IEC 62040-3
53	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Output – Linear load (1)output normal mode-no load	Cl. 6.4.2.1, IS 16242 (Part 3)/ IEC 62040-3

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54	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Output – Linear load (2)output normal mode-Full load	Cl. 6.4.2.2, IS 16242 (Part 3) / IEC 62040-3
55	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Output – Linear load(10) Over load and fault clearing capability	Cl. 6.4.2.10, IS 16242 (Part 3)/ IEC 62040-3
56	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Output – Linear load(3) output stored energy mode-no load	Cl. 6.4.2.3, IS 16242 (Part 3)/ IEC 62040-3
57	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Output – Linear load(3) output stored energy mode-no load	Cl. 6.4.2.3, IS 16242 (Part 3) / IEC 62040-3
58	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Output – Linear load(4) output stored energy mode-full load	Cl. 6.4.2.4, IS 16242 (Part 3)/ IEC 62040-3
59	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Output – Linear load(6) DC component	Cl. 6.4.2.6, IS 16242 (Part 3)/ IEC 62040-3
60	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Output – Linear load(8) Output over voltage test	Cl. 6.4.2.8, IS 16242 (Part 3) / IEC 62040-3
61	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Output – Linear load(9) Periodic output voltage variation test	Cl. 6.4.2.9, IS 16242 (Part 3)/ IEC 62040-3
62	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Output – Non-linear load (2) Stored energy mode – Full load	Cl. No 6.4.3.2, IS 16242 (Part 3)/ IEC 62040-3
63	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Output – Non-linear load(1) Normal mode – Full load	Cl. No 6.4.3.1, IS 16242 (Part 3)/ IEC 62040-3
64	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Over current and earth fault condition	Cl 5.5, IS 16242 (Part 1), IEC 62040-1
65	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Performance Classification	Cl. 5.3.4, IS 16242 (Part 3)/IEC 62040-3
66	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Power Interface	Cl 4.6, IS 16242 (Part 1), IEC 62040-1
67	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Temperature Rise	Cl 7.7 (Excluding: 4.5.5/RD) IS 16242 (Part 1), IEC 62040-1
68	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Transfer to Bypass	Cl. 6.2.2.9, IS 16242 (Part 3) /IEC 62040-3
69	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Wiring terminals for external power conductors	Cl 6.3, IS 16242 (Part 1), IEC 62040-1
70	ELECTRONICS- POWER SUPPLIES & STABILIZERS	Uninterruptible power systems (UPS) (Upto 10kVA)	Wiring, connections and supply - General	Cl 6.1, IS 16242 (Part 1), IEC 62040-1