National Accreditation Board for Testing and Calibration Laboratories

SCOPE OF ACCREDITATION

Laboratory Name : TERAWATT TESTING AND RESEARCH INSTITUTE PRIVATE LIMITED, H-400,RIICO INDUSTRIAL AREA, KHUSKHERA, BHIWADI, ALWAR, RAJASTHAN, INDIA

Accreditation Standard ISO/IEC 17025:2017

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Validity 16/11/2021 to 15/11/2023 **Last Amended on** 22/04/2023

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	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered agricultural water pumps (0.25 hp to 20 hp)	System Performance diagrams :P-Q, H-Q, startup power measurement and design check of the PV pumping system in respect to the daily water volume	Cl.no. 5.3, 5.3.2, 5.3.3, 5.3.4,6.3, 6.6 of IEC 62253
2	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered agricultural water pumps (1 hp to 20 hp)	Constructional features	Cl. No. 3, 3.1, 3.2, 3.3, 3.4, 3.5, 3.6, 3.7 & 3.8 of MNRE Specifications for solar photovoltaic water pumping systems, Annexure –A of circular no. F.no. 41/3/2018 SPV Division dated 22.03.2023
3	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered agricultural water pumps (1 hp to 20 hp)	Measurement of head	Cl. No. 6.2 of MNRE, guidelines on testing procedure for solar photovoltaic water pumping systems, Annexure –B of circular no. F.no. 41/3/2018-SPV division dated 22.03.2023
4	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered agricultural water pumps (1 hp to 20 hp)	Measurement of rate of flow	Cl. No. 6.3 of MNRE, guidelines on testing procedure for solar photovoltaic water pumping systems, Annexure –B of circular no. F.no. 41/3/2018-SPV division dated 22.03.2023
5	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered agricultural water pumps (1 hp to 20 hp)	Per day water flow test for submersible and surface pumps	Cl. No. 8.1 & 8.2 of MNRE, guidelines on testing procedure for solar photovoltaic water pumping systems, Annexure –B of circular no. F.no. 41/3/2018-SPV division dated 22.03.2023
6	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered agricultural water pumps (1 hp to 20 hp)	Performance requirements	Cl. No. 4 & 4.1 of MNRE Specifications for solar photovoltaic water pumping systems, Annexure –A of circular no. F.no. 41/3/2018 SPV Division dated 22.03.2023
7	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered agricultural water pumps (1 hp to 20 hp)	Protection test (a) dry run test (b) reverse polarity test (c) open circuit / no-load (d) output short-circuit(e) Under voltage	Cl. No. 5.0 of MNRE, guidelines on testing procedure for solar photovoltaic water pumping systems, Annexure –B of circular no. F.no. 41/3/2018-SPV division dated 22.03.2023

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8	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered agricultural water pumps (1 hp to 20 hp)	Remote monitoring system verification	Cl. No. 5.3 of MNRE, guidelines on testing procedure for solar photovoltaic water pumping systems, Annexure –B of circular no. F.no. 41/3/2018-SPV division dated 22.03.2023
9	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered agricultural water pumps (1 hp to 20 hp)	Solar radiation measurement	Cl. No. 6.1 of MNRE, guidelines on testing procedure for solar photovoltaic water pumping systems, Annexure –B of circular no. F.no. 41/3/2018-SPV division dated 22.03.2023
10	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered agricultural water pumps (1 hp to 20 hp)	Total water output per day for performance tests (a) hot profile performance test (b) cold profile performance test (c) outdoor performance test	Cl. No. 5.0, 5.1, 5.2, 5.3 & 5.4 of MNRE, guidelines on testing procedure for solar photovoltaic water pumping systems, Annexure –B of circular no. F.no. 41/3/2018-SPV division dated 22.03.2023
11	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered drinking water pumps (1 hp)	Protection test (a) dry run test (b) reverse polarity test (c) open circuit / no-load (d) output short-circuit	MNRE test methods for SPV water pumping systems
12	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered drinking water pumps (1 hp)	Total water output per day for performance tests (a)hot profile performance test (b) cold profile performance test (c) outdoor performance test	MNRE test methods for SPV water pumping systems
13	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered micro water pumps (0.20 hp to 0.50 hp)	Measurement of head	MNRE specification for solar PV water pumping systems for micro pumping application
14	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered micro water pumps (0.20 hp to 0.50 hp)	Measurement of rate of flow	MNRE specification for solar PV water pumping systems for micro pumping application
15	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered micro water pumps (0.20 hp to 0.50 hp)	Per day water Water flow test	MNRE specification for solar PV water pumping systems for micro pumping application
16	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered micro water pumps (0.20 hp to 0.50 hp)	Protection test (a) dry run test (b) reverse polarity test (c) open circuit / no-load (d) output short-circuit	MNRE specification for solar PV water pumping systems for micro pumping application
17	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered micro water pumps (0.20 hp to 0.50 hp)	Solar radiation measurement	MNRE specification for solar PV water pumping systems for micro pumping application

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18	ELECTRICAL- ROTATING ELECTRICAL MACHINES	AC/DC standalone solar powered micro water pumps (0.20 hp to 0.50 hp)	Total water output per day for performance tests (a) hot profile performance test (b) cold profile performance test (c) outdoor performance test	MNRE specification for solar PV water pumping systems for micro pumping application
19	ELECTRICAL- ROTATING ELECTRICAL MACHINES	Agricultural and Water Supply Pumps (0.25 hp to 40 hp)	Measurement of Flow Rate	Cl. No. 3.2.1.4.d of IS 11346
20	ELECTRICAL- ROTATING ELECTRICAL MACHINES	Agricultural and Water Supply Pumps (0.25 hp to 40 hp)	Measurement of Head	Cl. No. 3.2.2 of IS 11346
21	ELECTRICAL- ROTATING ELECTRICAL MACHINES	Agricultural and Water Supply Pumps (0.25 hp to 40 hp)	Verification of Guarantee with respect to Rate of Flow, Total Head and overall efficiency	Cl. No. 5.2,7,8.1 of IS 11346
22	ELECTRONICS-MISCELLANEOUS PRODUCTS	Bi-Facial Photovoltaic Module	I-V characterization	Cl. No. 7 IEC 60904-1-2
23	ELECTRONICS-MISCELLANEOUS PRODUCTS	Bi-Facial Photovoltaic Module	I-V characterization	Cl. No. 7 IS 12762-1-2
24	ELECTRONICS-MISCELLANEOUS PRODUCTS	Solar Photovoltaic module	Maximum Power Determination	Cl. 4.2 of IEC 61215-2
25	ELECTRONICS-MISCELLANEOUS PRODUCTS	Solar Photovoltaic module	Maximum Power Determination	Cl. 4.2 of IS 14286-2
26	ELECTRONICS-MISCELLANEOUS PRODUCTS	Solar Photovoltaic module	Maximum Power Determination	Cl. No. –10.4 of IEC 61730
27	ELECTRONICS-MISCELLANEOUS PRODUCTS	Solar Photovoltaic module	Measuring at STC	Cl. No. –4.6.3.1 of IEC 61215-2
28	ELECTRONICS-MISCELLANEOUS PRODUCTS	Solar Photovoltaic module	Performance at STC	Cl. No. – 4.6 IEC 61215
29	ELECTRONICS-MISCELLANEOUS PRODUCTS	Solar Photovoltaic module	Performance at STC	Cl. No. –10.3 of IEC 61730-2
30	ELECTRONICS-MISCELLANEOUS PRODUCTS	Solar Photovoltaic module	Use of other brand of solar modules(I-V Power Measurements	Cl. No. 13 of MNRE, guidelines on testing procedure for solar photovoltaic water pumping system, annexure –II of circular no. F.no. 41/3/2018- SPV division

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31	ELECTRONICS-MISCELLANEOUS PRODUCTS	Solar Photovoltaic module	Visual inspection	Cl. 4.1 of IEC 61215-2
32	ELECTRONICS-MISCELLANEOUS PRODUCTS	Solar Photovoltaic module	Visual inspection	Cl. 4.1 of IS 14286
33	ELECTRONICS-MISCELLANEOUS PRODUCTS	Solar Photovoltaic module	Visual inspection	Cl. No. – 10.2of IEC 61730