

TUV Rheinland (India) Pvt. Ltd.
Product Safety & Quality

Test Report

**Salt Mist corrosion Testing of
Photovoltaic modules acc IEC 61701:2011,
EN 61701:2012**

TÜV Report No: 19631623.001

Bangalore APRIL 2018



Certificate No. TC -5688

Test report no.: <i>Prüfbericht - Nr.:</i>	19631623.001		
Client (Customer no. and address): <i>Auftraggeber</i> <i>(Kunden-Nr. u. Adresse):</i>	476410 Waaree Energies Limited, Plot no 231-236, Surat special economic zone, Diamond park, Sachin Surat – 394230 India		
Test item: <i>Gegenstand der Prüfung:</i>	Photovoltaic (PV) Module(s)	Date of receipt: <i>Eingangsdatum:</i>	19-02-2018
Module type designation: <i>Modultypen-Bezeichnung:</i>	Refer Page.no 3 (only valid for the material combination as listed in the constructional data form in the annex of this test report)		
Order no.: <i>Auftragsnummer:</i>	1803298483	Quotation no.: <i>Angebotsnummer:</i>	402046785 dtd 05-02-2018
Testing location: <i>Prüfart:</i>	TUV Rheinland(India) Pvt.Ltd Plot No.17B,Electronic city, Phase II, Industrial Area,Begur Hobli, Bangalore(south)-560 100,India Tel: +91 80 3923 4301		
Test specification: <i>Prüfgrundlage:</i>	IEC 61701:2011, EN 61701:2012 severity 1, (Salt mist corrosion testing of photovoltaic (PV) modules)		
Test result: <i>Prüfergebnis:</i>	All of the required tests were passed according to the pass criteria outlined in test specification noted above.		
compiled by / erstellt:		reviewed by / kontrolliert:	
06-04-2018	Purushothama A	06-04-2018	K. Ganesh Kamath
Date <i>Datum</i>	Title/Name <i>Titel/Name</i>	Date <i>Datum</i>	Title/Name <i>Titel/Name</i>
<p>This test report relates to the listed test samples. Without permission of the test centre this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any safety mark on this or similar products.</p> <p>Dieser Prüfbericht bezieht sich nur auf die gelisteten Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens.</p>			

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Product description:

1	<p>Produktdetails <i>Product details:</i> <u>With 6" Poly crystalline cells</u> WS-xxx (xxx = 300 -350Wp with 5W interval with 72 cells) WS-xxx (xxx = 250 -295Wp with 5W interval with 60 cells) WS-xxx (xxx = 200 -245Wp with 5W interval with 54 cells) WS-xxx (xxx = 125 -160Wp with 5W interval with 36 cells) <u>With 6" Mono crystalline cells</u> WSM-xxx (xxx = 320 -360Wp with 5W interval with 72 cells) WSM-xxx (xxx = 255 -300Wp with 5W interval with 60 cells)</p> <p>xxx represents Output power in Wp</p>
2	<p>Verwendete Materialien <i>Used materials</i></p> <p>see Constructional Data Form (CDF) in the annex of this test report</p>
3	<p>Adresse(n) der Fertigungsstätte(n) <i>Address(es) of the manufacturing site(s)</i></p> <p>Waaree Energies Limited, Plot no 231-236, Surat special economic zone, Diamond park, Sachin, Surat – 394230 India</p>
4	<p>Zusammenfassung der Prüfergebnisse <i>Summary of test results</i></p> <p>According to the inquiry of manufacturer for resistance to salt mist corrosion of photovoltaic (PV) modules should be assessed in accordance with IEC 61701:2011, EN 61701:2012 - Severity 1. For the qualification of the modules to this test, initial and final control measurements were performed before and after the salt mist corrosion testing. The measurements included relative power measurements, insulation testing and visual inspections. The maximum permissible power degradation of 5 % must not be exceeded. Furthermore the minimum requirements for the –Dielectric-insulation test and wet leakage test as defined in MST 16 of IEC 61730-2 and IEC 61215:2005-10.15 have to be met. No major visual defects as defined in IEC 61730-2 shall occur. " The tests have been performed on the representative sample of the above said type and results were incorporated in this report: 19631623.001</p> <p>The tests of the requirements of IEC 61701:2011, EN 61701:2012 - Severity 1. were all fulfilled according to its regulations of the pass criteria. The above listed module types have passed all tests of the IEC 61215:2005 standard before salt mist corrosion test was applied.</p> <p>Test failures: - N/A</p> <p>This test report includes a history of certification in appendix</p>