Business Stream Products
Renewable and Solar Technology

Attn: Kyocera Solar
7812 E. Acoma Drive
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March 12, 2014
Rev. 1

Subject: Salt Corrosion Testing per IEC 61701:2011, Severity (6)

Type of Equipment: PV Module
Model Designation: See **Appendix A** for each model type

TÜV Rheinland Project Number: KYO130909
TÜV Rheinland Report Number: R-KYO130909

To Whom It May Concern,

TÜV Rheinland PTL (TUV-PTL) has completed a third party investigation of PV Modules manufactured by Kyocera Solar, for suitability of resistance to salt corrosion. Applicable model numbers are provided in **Appendix A**.

The resistance to salt corrosion of photovoltaic (PV) modules has been assessed in accordance with Salt Mist Corrosion Testing of Photovoltaic (PV) Modules to IEC 61701:2011. For qualification of the PV modules to this test, both initial and final control measurements were performed before and after the salt mist corrosion testing. The measurements include relative power measurements, component function testing, insulation testing, and visual inspections.

Salt Mist Corrosion testing was performed on the provided samples representative of the PV Modules to IEC 61701:2011 for Severity (6). Severity (6), the most severe condition, is intended for PV modules exposed to salt-laden and dry atmospheres.

It is our assumption that the PV Modules, have already met the safety qualifications and construction requirements of IEC 61730-1, as these model are listed by TUVR Japan under certification number PV 50264601, and by JET under certification numbers PV03-53202-1010, PV03-53202-1012, PV03-53202-1013, PV03-53202-1023, PV03-53202-1031, PV03-53202-1043, PV03-53202-1044 when our investigation occurred. Reference file numbers and models are provided in **Appendix A**.

All of the required tests were passed according to the pass criteria outlined in the test specification noted above. It is therefore declared, that the Kyocera Solar PV Modules, model type designated in **Appendix A**, of defined construction, to have fulfilled the requirements of IEC 61701, Severity (6).

If you should have any questions, please do not hesitate to contact us.

Sincerely,

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Appendix A: Reference File Number and Designation for Applicable Models

Reference File Number: ***TÜV Rheinland PV 50264601 (IEC 61730-1/-2)***
Module Designation:

KDxxxSX-1PU and **KDxxxSX-1FU** and **KDxxxSX-1YU**
xxx=130, 135, 140, 145, 150 (36 Cells)

KDxxxGH-4FB2 and **KDxxxGH-4YB2**
xxx = 255 (60 Cells)

KDxxxSX-1FBS and **KDxxxSX-1YBS**
xxx=130, 135, 140, 145, 150 (36 Cells)

KDxxxGH-4PB and **KDxxxGH-yFB** and **KDxxxGH-yYB**
xxx = 335, 330, 325, 320, 315, 310, 305, 300, y = 2 or 4 (80 Cells)
xxx = 250, 245, 240, 235, 230, y = 2 or 4 (60 Cells)
xxx = 225, 220, 215, 210, 205, y = 2 or 4 (54 Cells)
xxx = 200, 195, 190, 185, 180, y = 2 or 4 (48 Cells)
xxx = 150, 145, 140, 135, 130, y = 2 or 4 (36 Cells)

KDxxxGH-yPB2 and **KDxxxGH-yFB2** and **KDxxxGH-yYB2**
xxx = 250, 245, 240, 235, 230, y = 2 or 4 (60 Cells)
xxx = 225, 220, 215, 210, 205, y = 2 or 4 (54 Cells)
xxx = 200, 195, 190, 185, 180, y = 2 or 4 (48 Cells)
xxx = 150, 145, 140, 135, 130, y = 2 or 4 (36 Cells)

KDxxxGH-yFBS and **KDxxxGH-yYBS**
xxx = 225, 220, 215, 210, 205, y = 2 or 4 (54 Cells)
xxx = 200, 195, 190, 185, 180, y = 2 or 4 (48 Cells)
xxx = 150, 145, 140, 135, 130, y = 2 or 4 (36 Cells)

KDxxxGH-yPU and **KDxxxGH-yFU** and **KDxxxGH-yYU**
xxx = 225, 220, 215, 210, 205, y = 2 or 4 (54 Cells)
xxx = 200, 195, 190, 185, 180, y = 2 or 4 (48 Cells)
xxx = 150, 145, 140, 135, 130, y = 2 or 4 (36 Cells)

The following models have been certified by **Japan Electrical Testing (JET) Laboratory** to IEC 61730-1 under the respective reference file numbers**:**

Reference File Number:	**Module Designation:**
PV03-53202-1010	**KDxxxSX-UPU**
PV03-53202-1012	**KDxxxGX-LFU** and **KDxxxGX-LFBS** and **KDxxxGX-LFB**
PV03-53202-1013	**KDxxxGX-LPB**
PV03-53202-1023	**KDxxxGX-LPU** and **KDxxxGX-LPB**
PV03-53202-1031	**KDxxxSX-UPU** and **KDxxxGX-LPB**
PV03-53202-1043	**KDxxxGX-LPB**
PV03-53202-1044	**KDxxxSX-UFU** and **KDxxxSX-UFBS** **KDxxxGX-LPB2** and **KDxxxGX-LFB2**

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KKM-SE-00289

Supplemental Remarks on Salt Mist Corrosion Testing Project KYO130909 conducted by TUV Rheinland PTL (TUV-PTL)

These Supplemental Remarks (KKM-SE-00289) shall always accompany the Salt Corrosion Test completion notice letter or report issued by TUV-PTL.

The test concludes and represents that Kyocera PV modules provided in Appendix A fulfill the requirements of IEC 61701 Edition 2: 2011 Salt Mist Corrosion Testing of Photovoltaic (PV) Modules, Severity (6).

In contrast, however, the Kyocera Limited Warranty for Photovoltaic Modules does not cover defects and/or failures caused by salt damage even though such defects and/or failures are discovered within the applicable warranty period.

For details, please refer to our Limited Warranty.

Tsuyoshi Yasutomi

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