Prüfbericht-Nr.: *Test report no.*:	**CN248WVV 001**	**Auftrags-Nr.:** *Order no.*:	244591111	
Kunden-Referenz-Nr.: *Client reference no.*:	2062211	**Auftragsdatum:** *Order date:*	23/01/2024	
Auftraggeber: *Client*:	Zhejiang Aiko Solar Technology Co., Ltd. No.655, Haopai Road, Suxi Town, Yiwu 322009 Zhejiang, P.R.China			
Prüfgegenstand: *Test item*:	Photovoltaic (PV) module			
Bezeichnung / Typ-Nr.: *Identification / Type no.*:	See module type designation on page 3			
Auftrags-Inhalt: *Order content*:	Design qualification and type approval of photovoltaic (PV) modules			
Prüfgrundlage: *Test specification*:	Photovoltaic (PV) modules *Testing follow Client's Requirements according to IEC 61215-2:2021*			

Wareneingangsdatum: *Date of sample receipt*:	10/01/2024
Prüfmuster-Nr.: *Test sample no:*	See clause 7
Prüfzeitraum: *Testing period*:	01/02/2024 - 01/03/2024
Ort der Prüfung: *Place of testing*:	Refer to page 5
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shanghai) Co., Ltd.
Prüfergebnis*: *Test result**:	Pass

geprüft von:
tested by: x Elle Hu

Signed by: Elle Hu

Datum:
Date: 01/04/2024

genehmigt von:
authorized by: x Chris Wang

Signed by: Chris Wang

Ausstellungsdatum:
Issue date: 01/04/2024

Stellung / Position: Project engineer

Stellung / Position: Authorizer

Sonstiges /
Other:

- Testing follow Client's Requirements according to IEC 61215-2:2021 for module types listed on page 3
- Valid only for the material combinations as listed in Constructional Data Form (CDF) No. CN248WVV 001.

Zustand des Prüfgegenstandes bei Anlieferung: Prüfmuster vollständig und unbeschädigt
Condition of the test item at delivery: *Test item complete and undamaged*

* Legende:	P(ass) = entspricht o.g. Prüfgrundlage(n)	F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
* *Legend:*	*P(ass) = passed a.m. test specification(s)*	*F(ail) = failed a.m. test specification(s)*	*N/A = not applicable*	*N/T = not tested*

Prüfbericht-Nr.: CN248WVV 001
Test report no.:

Anmerkungen
Remarks

1	Alle eingesetzten Prüfmittel waren zum angegebenen Prüfzeitraum gemäß eines festgelegten Kalibrierungsprogramms unseres Prüfhauses kalibriert. Sie entsprechen den in den Prüfprogrammen hinterlegten Anforderungen. Die Rückverfolgbarkeit der eingesetzten Prüfmittel ist durch die Einhaltung der Regelungen unseres Managementsystems gegeben. Detaillierte Informationen bezüglich Prüfkonditionen, Prüfequipment und Messunsicherheiten sind im Prüflabor vorhanden und können auf Wunsch bereitgestellt werden. *The equipment used during the specified testing period was calibrated according to our test laboratory calibration program. The equipment fulfils the requirements included in the relevant standards. The traceability of the test equipment used is ensured by compliance with the regulations of our management system. Detailed information regarding test conditions, equipment and measurement uncertainty is available in the test laboratory and could be provided on request.*
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3	Prüfklausel mit der Note * wurden an qualifizierte Unterauftragnehmer vergeben und sind unter der jeweiligen Prüfklausel des Berichts beschrieben. Abweichungen von Prüfspezifikation(en) oder Kundenanforderungen sind in der jeweiligen Prüfklausel im Bericht aufgeführt. *Test clauses with remark of * are subcontracted to qualified subcontractors and descripted under the respective test clause in the report.* *Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.*
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnisen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2021, es sei denn, in der auf Seite 1 dieses Berichts genannten angewandten Norm ist etwas anderes festgelegt oder vom Kunden gewünscht. Dies bedeutet, dass die Messunsicherheit nicht berücksichtigt wird und daher auch nicht im Prüfbericht angegeben wird. Zu weiteren Informationen bezueglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. *The decision rule for statements of conformity, based on numerical measurement results, in this test report is based on the "Zero Guard Band Rule" and "Simple Acceptance" in accordance with ILAC G8:2019 and IEC Guide 115:2021, unless otherwise specified in the applied standard mentioned on Page 1 of this report or requested by the customer. This means that measurement uncertainty is not taken in account and hence also not declared in the test report. For additional information to the resulting risk based of this decision rule please refer to ILAC G8:2019.*

Produktbeschreibung
Product description

I	**General**
1	**New module types:** **Max. System Voltage: Up to 1500 VDC (Voc at STC):** **With 1/2 cut of mono c-Si cells (Under STC):** **AIKO-Axxx-MAH72Dw (xxx=585-625, in steps of 5, 144 cells)** **AIKO-Axxx-MAH60Dw (xxx=490-520, in steps of 5, 120 cells)** **AIKO-Axxx-MAH54Dw (xxx=440-465, in steps of 5, 108 cells)** **AIKO-Axxx-MAH72Db (xxx=585-620, in steps of 5, 144 cells)** **AIKO-Axxx-MAH60Db (xxx=490-515, in steps of 5, 120 cells)** **AIKO-Axxx-MAH54Db (xxx=440-465, in steps of 5, 108 cells)** **AIKO-Gxxx-MCH72Dw (xxx=610-650, in steps of 5, 144 cells)** **AIKO-Gxxx-MCH54Dw (xxx=460-485, in steps of 5, 108 cells)** **With 1/2 cut of mono c-Si cells (Under BNPI):** **AIKO-Axxx-MAH72Dw (xxx=615-655, in steps of 5, 144 cells)** **AIKO-Axxx-MAH60Dw (xxx=515-545, in steps of 5, 120 cells)** **AIKO-Axxx-MAH54Dw (xxx=460-485, in steps of 5, 108 cells)** **AIKO-Axxx-MAH72Db (xxx=615-650, in steps of 5, 144 cells)** **AIKO-Axxx-MAH60Db (xxx=515-540, in steps of 5, 120 cells)** **AIKO-Axxx-MAH54Db (xxx=460-485, in steps of 5, 108 cells)** **AIKO-Gxxx-MCH72Dw (xxx=665-705, in steps of 5, 144 cells)** **AIKO-Gxxx-MCH54Dw (xxx=500-525, in steps of 5, 108 cells)** **xxx represents output power in Wp**
2	**Used materials** See Constructional Data Form (CDF) no. CN248WVV 001
3	**Address(es) of the manufacturing site(s)**

Name / Description:	Guangdong Aiko Solar Technology Co., Ltd.
Street:	No.3, South Qili Avenue, Leping town, Sanshui District
Postcode / City, Country:	Foshan 528137 Guangdong, P.R.China
Type of production:	Crystalline PV-module
Inspection report No / Date:	CN22RFK9 003 / 25/10/2023

Name / Description:	Zhuhai Fushan Aiko Solar Technology Co., Ltd.
Street:	No.681, Fuguo Road, Doumen District
Postcode / City, Country:	Zhuhai 519175 Guangdong, P.R.China
Type of production:	Crystalline PV-module
Inspection report No / Date:	CN23G279 002 / 24/10/2023

Produktbeschreibung
Product description

Name / Description:	Zhejiang Aiko Solar Technology Co., Ltd.
Street:	No.888, Longqi Road, Suxi Town
Postcode / City, Country:	Yiwu 322009 Zhejiang, P.R.China
Type of production:	Crystalline PV-module
Inspection report No / Date:	CN244YJV 001 / 10/01/2024

4 Summary of test results

- Testing follow Client's Requirements according to IEC 61215-2:2021 for module types as listed in section 1.
- The tests have been performed on AIKO-G630-MCH72Dw (144 pcs of ½ cut mono c-Si solar cell) with bill of materials as listed on page 7 as representative model. The test results are presented within this test report.

- Below model type were introduced base on representative module types, the only different is solar cell types, less cell quantity and module dimension.no additional test was considered necessary:
  1. AIKO-Axxx-MAH72Dw & AIKO-Axxx-MAH72Db / AIKO-Axxx-MAH60Dw & AIKO-Axxx-MAH60Db / AIKO-Axxx-MAH54Dw & AIKO-Axxx-MAH54Db are for module with 144/120/108 pcs of ½ cut 182 BC solar cell.
  2. AIKO-Gxxx-MCH72Dw / AIKO-Gxxx-MCH54Dw are for module with 144/108 pcs of ½ cut 182.2×192.5-20BB BC solar cell.

  Remark: Letters "w" are introduced for white module; Letters "b" are introduced for black module.

- The materials and combinations in below table have been approved on module with glass-backsheet construction in test report No. CN24E3E3 001 which are applicable for module with glass-glass construction.No additional testing is considered necessary for the following modifications

Object	Manufacturer / trademark	Type / model	Technical data / ratings	Previous approved test report No.
Solar cell	Manufactory 1: Guangdong Aiko Solar Technology Co., Ltd. Manufactory 2: Tianjin Aiko Solar Technology Co., Ltd. Manufactory 3: Zhejiang Aiko Solar Technology Co., Ltd. Manufactory 4: Zhuhai Fushan Aiko Solar Technology Co., Ltd.	182.2×187.75-20BB BC	Mono c-Si BC cell with 20 busbars 182.2mm×93.875mm (±0.5mm)×131± 15μm	CN24E3E3 001

The test report is valid only for the materials as listed in Constructional Data Form (CDF) No. CN248WVV 001.

This test report includes Electroluminescence Images , measurement reports, photo and Constructional Data Form (CDF) No. CN248WVV 001 in the appendix.

Summary of test locations:

All the tests were tested at TÜV Rheinland (Suzhou) Co., Ltd., which is located at No.14 building and north half of No.10 workshop building, No.525, Yuewang Lingang South Road, Pingqian (Taicang) Modern Industrial Park, Shaxi Town, Taicang City, Jiangsu Province, P.R. China.

Absatz	**Photovoltaic (PV) modules**	Messergebnisse - Bemerkungen	Ergebnis
Clause	Anforderungen - Prüfungen / *Requirements - Tests*	*Measuring results - Remarks*	*Result*
5	**Test specification**		
	IEC 61215-1:2021; EN 61215-1:2021: Terrestrial photovoltaic (PV) modules – Design qualification and type approval – Part 1: Test requirements	N/A	—
	IEC 61215-1-1:2021; EN 61215-1-1:2021: Terrestrial photovoltaic (PV) modules – Design qualification and type approval – Part 1-1: Special requirements for testing of crystalline silicon photovoltaic (PV) modules	N/A	
	IEC 61215-2:2021; EN 61215-2:2021: Terrestrial photovoltaic (PV) modules – Design qualification and type approval – Part 2: Test procedures	applicable	
	IEC 61730-1:2023; EN IEC 61730-1:2018: Photovoltaic (PV) module safety qualification – Part 1: Requirements for construction	N/A	
	IEC 61730-2:2023; EN IEC 61730-2:2018: Photovoltaic (PV) module safety qualification – Part 2: Requirements for testing	N/A	

Absatz	**Photovoltaic (PV) modules**	Messergebnisse - Bemerkungen	Ergebnis
Clause	Anforderungen - Prüfungen / *Requirements - Tests*	*Measuring results - Remarks*	*Result*

6	**List of test samples**	

☐ The modules tested were taken at random from a production batch and subjected to manufacturer's normal quality control and inspection for safety testing

☒ The modules tested were prototypes of a new design and not taken from a production batch.

Module type: AIKO-G630-MCH72Dw

Sample no.	Sample SN	Test sequence	Remarks / constructional characteristics (e.g. cell, backsheet, frame type)
1	Y1124107G0218000387	A	Front cover: 2.0mm External AR coated semi-tempered glass from CSG Holding Co., Ltd. Rear cover: 2.0mm Glazed semi-tempered glass, from CSG Holding Co., Ltd. Encapsulation material: POE: TF4, thickness =0.50mm, 360g/m^2 (between glass and solar cell) and thickness =0.60mm, 520g/m^2 (between solar cell and rear cover) from Hangzhou First Applied Material Co., Ltd. Frame: Anodized aluminium alloy :6005-T6, thickness=35mm from Yingkou Changtai Aluminum Material Co., Ltd. Adhesive of frame: HT906Z from Shanghai Huitian New Material Co., Ltd. Solar cell: 182.2×192.5-20BB BC from Guangdong Aiko Solar Energy Technology Co., Ltd. Cell connector: (0.25 -0.01/+0.015)mm× (0.6±0.05)mm, Sn60Pb40 from Suzhou YourBest New-type Materials Co.,Ltd. String connector: (0.30±0.01) × (6.0±0.05)mm, (0.30±0.01) × (4.0±0.05)mm , Sn60Pb40 from Suzhou YourBest New-type Materials Co.,Ltd. Solder paste: SnP-sol-183, Sn63/36.8/AG0.2 from Beijing Rtax Technology Co., Ltd. Insulating adhesive: White-ins from ShenZhen RongDa Photosensitive Science & Technology Co., Ltd. Fluxing agent: WTO-PV105A from Suzhou Vital Electronics Material Technology Co., Ltd. Fixing Tape: DT-9609 from Darbond Technology Co.,Ltd. Insulation material: BEC-201 from Suzhou First PV Material Co., Ltd. Junction box: AIKO-JB-xyz-01 from Zhejiang Aiko Solar Technology Co., Ltd. Cable: 62930 IEC 131 1x4,0mm ² HALOGEN FREE LOW SMOKE from Zhejiang Zhonghuan Sunter PV Technology Co., Ltd. Connector: PV-ZH202B from Zhejiang Zhonghuan Sunter PV Technology Co., Ltd. Bypass Diode: 35SQ045 from Zhejiang Zhonghuan Sunter PV Technology Co., Ltd. Potting material: 5299W-S from Shanghai Huitian New Material Co., Ltd. Adhesive (junction box): HT906Z from Shanghai Huitian New Material Co., Ltd.
2	Y1124105G0216000243	E2	
3	Y1124105G0216000182	E2	

—

Supplementary information: See test chart in Appendix A for full test sequences.

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Absatz	**Photovoltaic (PV) modules**	Messergebnisse - Bemerkungen	Ergebnis
Clause	Anforderungen - Prüfungen / *Requirements - Tests*	*Measuring results - Remarks*	*Result*

III	**IEC 61215-2:2021 and IEC 61730-2:2023 – Test procedures**

9	**Overview of tests and test results**

Initial examination	—	—
Visual inspection (MQT 01 / MST 01)	See table 9.1	P
Insulation test (MQT 03 / MST 16)	See table 9.2	P
Wet leakage current test (MQT 15 / MST 17)	See table 9.3	P
Accessibility test (MST 11)	N/A	N/A
Continuity test of equipotential bonding (MST 13)	N/A	N/A
Maximum power determination (MQT 02 / MST 03)	N/A	N/A
Initial stabilization (MQT 19.1)	N/A	N/A
Performance at STC (MQT 06.1 / MST 03)	See table 9.8	N/A
Gate #1 evaluation	N/A	N/A

Sequence A	—	—
Measurement of temperature coefficients (MQT 04)	N/A	N/A
Performance at low irradiance (MQT 07)	N/A	N/A

Sequence B1	—	—
Outdoor exposure test (MQT 08)	N/A	N/A

Sequence B2	—	—
Hot-spot endurance test (MQT 09 / MST 22)	N/A	N/A
Reverse current overload test (MST 26)	N/A	N/A

Sequence B3	—	—
Bypass diode thermal test (MQT 18.1 / MST 25)	N/A	N/A

Sequence C	—	—
UV preconditioning test (MQT 10 / MST 54)	N/A	N/A
Cyclic (dynamic) mechanical load test (MQT 20)	N/A	N/A
Thermal cycling test (50 cycles) (MQT 11 / MST 51)	N/A	N/A
Humidity-freeze test (MQT 12 / MST 52)	N/A	N/A

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Absatz *Clause*	**Photovoltaic (PV) modules** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Ergebnis *Result*
	Sequence C1	—	—
	Retention of junction box on mounting surface (MQT 14.1 / MST 42)	N/A	N/A
	Test of cord anchorage (MQT 14.2)	N/A	N/A
	Sequence D	—	—
	Thermal cycling test (200 cycles) (MQT 11 / MST 51)	N/A	N/A
	Sequence D1	—	—
	Robustness of terminations test (MQT 14.1 / MST 42)	N/A	N/A
	Sequence E	—	—
	Damp heat test (MQT 13 / MST 53)	N/A	N/A
	Sequence E1	—	—
	Retention of junction box on mounting surface (MQT 14.1 / MST 42)	N/A	N/A
	Static mechanical load test (MQT 16 / MST 34)	N/A	N/A
	Sequence E2	—	—
	Hail test (MQT 17)	See table 9.27	P
	Sequence F	—	—
	Materials creep test (MST 37)	N/A	N/A
	Sequence Gf and CJ2	—	—
	Damp heat test (200h) (MST 53)	N/A	N/A
	UV test (front side) (MST 54)	N/A	N/A
	Humidity-freeze test (MST 52)	N/A	N/A
	Insulation thickness test (MST 04)	N/A	N/A
	Sequence Gb and CJ2	—	—
	Damp heat test (200h) (MST 53)	N/A	N/A
	UV test (back side) (MST 54)	N/A	N/A
	Humidity-freeze test (MST 52)	N/A	N/A
	Insulation thickness test (MST 04)	N/A	N/A

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Test Report No.:

Absatz *Clause*	**Photovoltaic (PV) modules** Anforderungen - Prüfungen / *Requirements - Tests*	Messergebnisse - Bemerkungen *Measuring results - Remarks*	Ergebnis *Result*
	Sequence G1	—	—
	Cold conditioning test 1 (MST 55)	N/A	N/A
	Dry heat conditioning test (MST 56)	N/A	N/A
	Humidity-freeze test 1 (MST 52)	N/A	N/A
	Cold conditioning test 2 (MST 55)	N/A	N/A
	Humidity-freeze test 2 (MST 52)	N/A	N/A
	Sequence H	—	—
	Impulse voltage test (MST 14)	N/A	N/A
	Sequence M	—	—
	Module breakage test (MST 32)	N/A	N/A
	Sequence I	—	—
	Ignitability test (MST 24)	N/A	N/A
	Sequence K	—	—
	Potential induced degradation test (MQT 21)	N/A	N/A
	Sequence J	—	—
	Fire test (MST 23)	N/A	N/A
	Final measurements	—	—
	Final stabilization (MQT 19.2 / MQT 19.3)	N/A	N/A
	Maximum power determination (MQT 02 / MST 03)	N/A	N/A
	Performance at STC (MQT 06.1 / MST 03)	See table 9.47	P
	Gate #2 evaluation	N/A	N/A
	Bypass diode functionality test (MQT 18.2 / MST 07)	N/A	N/A
	Cut susceptibility test (MST 12)	N/A	N/A
	Accessibility test (MST 11)	N/A	N/A
	Continuity test of equipotential bonding (MST 13)	N/A	N/A
	Screw connections test (MST 33)	N/A	N/A
	Durability of markings (MST 05)	N/A	N/A
	Sharp edge test (MST 06)	N/A	N/A
	Component tests	—	—
	Peel test (MST 35)	No cemented joints	N/A
	Lap shear strength test (MST 36)	No cemented joints	N/A
	Supplementary information: See Appendix A: Test charts for more details.		

ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

9.1	**Visual inspection (initial) – MQT 01 / MST 01**		
Test date (dd/mm/yyyy)	01/02/2024		—
Sample no.	Requirement	Nature and position of initial findings	
1	No major visual defects	No major visual defects	P
2		No major visual defects	P
3		No major visual defects	P
Supplementary information: N/A			

9.2	**Insulation test (initial) – MQT 03 / MST 16**					
Test date (dd/mm/yyyy)				06/02/2024		—
Maximum system voltage [V_{DC}]				1500		
Cemented joints?				☒ No	☐ Yes	
High voltage applied [V_{DC}]				8000		
Insulation resistance measured at [V_{DC}]				1500		
Sample no.	R_{iso} [GΩ]	A [m²]	R_{iso}·A [GΩ·m²]	Dielectric breakdown		
				Yes (description)	No	
1	7.25	2.70	19.58	-	No	P
2	7.88	2.70	21.28	-	No	P
3	8.28	2.70	22.36	-	No	P
Supplementary information: Minimum requirement is 0.04 GΩ·m² for A > 0.1 m² and 0.4 GΩ for A ≤ 0.1 m².						

9.3	**Wet leakage current test (initial) – MQT 15 / MST 17**			
Test date (dd/mm/yyyy)		06/02/2024		—
Maximum system voltage [V_{DC}]		1500		
Cemented joints?		☒ No	☐ Yes	
Insulation resistance measured at [V_{DC}]		1500		
Solution resistivity [Ω·cm]		≤ 3500		
Solution temperature [°C]		22 ± 2		
Sample no.	R_{iso} [MΩ]	A [m²]	R_{iso}·A [MΩ·m²]	
1	3820.0	2.70	10314.0	P
2	4250.0	2.70	11475.0	P
3	3590.0	2.70	9093.0	P
Supplementary information: Minimum requirement is 40 MΩ·m².				

9.8 Performance at STC (initial) – MQT 06.1

9.8.1 Performance at STC (initial) (front side) – MQT 06.1

Test date (dd/mm/yyyy)			05/02/2024				—
Test method			☒ Simulator ☐ Natural sunlight				
Illuminated side			☒ Front side ☐ Rear side				
Ambient temperature [°C]			25 ± 2				
Irradiance [W/m²]			1000*				
Module temperature [°C]			25 ± 0.2				
Spectral mismatch			N/A				
Sample no.	P_{max} [W]	V_{mpp} [V]	I_{mpp} [A]	V_{oc} [V]	I_{sc} [A]	FF [%]	
1	630.8	45.63	13.824	53.33	14.756	80.2	N/A
2	624.3	45.37	13.763	53.16	14.735	79.7	N/A
3	626.1	45.43	13.782	53.20	14.740	79.8	N/A

Supplementary information: The non-illuminated side was covered with non-reflective background and aperture.
*A pulse solar simulator class AAA conforming to the requirements of IEC 60904-9 is used.

9.27	**Hail test – MQT 17**		
Test date (dd/mm/yyyy)		27/02/2024 for 2; 28/02/2024 for 3	—
Ice ball diameter [mm]		35	
Ice ball mass [g]		20.7 ± 5 %	
Ice ball velocity [m/s]		27.2 ± 5 %	
Number of impact locations		11	
Sample no.		—	
2		—	N/A
3		—	N/A
Supplementary information: N/A			

9.27.1	**Visual inspection after Hail test – MQT 01**		
Test date (dd/mm/yyyy)		27/02/2024 for 2; 28/02/2024 for 3	—
Sample no.	Requirement	Nature and position of findings	
2	No major visual defects	No major visual defects	P
3	No major visual defects	No major visual defects	P
Supplementary information: N/A			

9.27.2	**Insulation test after Hail test – MQT 03**					
Test date (dd/mm/yyyy)				28/02/2024		—
Maximum system voltage [V_{DC}]				1500		
Cemented joints?				☒ No	☐ Yes	
High voltage applied [V_{DC}]				8000		
Insulation resistance measured at [V_{DC}]				1500		
Sample no.	R_{iso} [GΩ]	A [m²]	R_{iso}·A [GΩ·m²]	Dielectric breakdown		
				Yes (description)	No	
2	7.20	2.70	18.94	-	No	P
3	7.44	2.70	19.57	-	No	
Supplementary information: Minimum requirement is 0.04 GΩ·m² for A > 0.1 m² and 0.4 GΩ for A ≤ 0.1 m².						

ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

9.27.3	**Wet leakage current test after Hail test – MQT 15**

Test date (dd/mm/yyyy)		28/02/2024		—
Maximum system voltage [V_{DC}]		1500		
Cemented joints?		☒ No ☐ Yes		
Insulation resistance measured at [V_{DC}]		1500		
Solution resistivity [Ω·cm]		≤ 3500		
Solution temperature [°C]		22 ± 2		
Sample no.	R_{iso} [MΩ]	A [m²]	R_{iso}·A [MΩ·m²]	
2	3640.0	2.70	9573.2	P
3	3270.0	2.70	8600.1	

Supplementary information:
Minimum requirement is 40 MΩ·m².

9.47	**Performance at STC (final) – MQT 06.1**

9.47.1	**Performance at STC (final) – MQT 06.1**

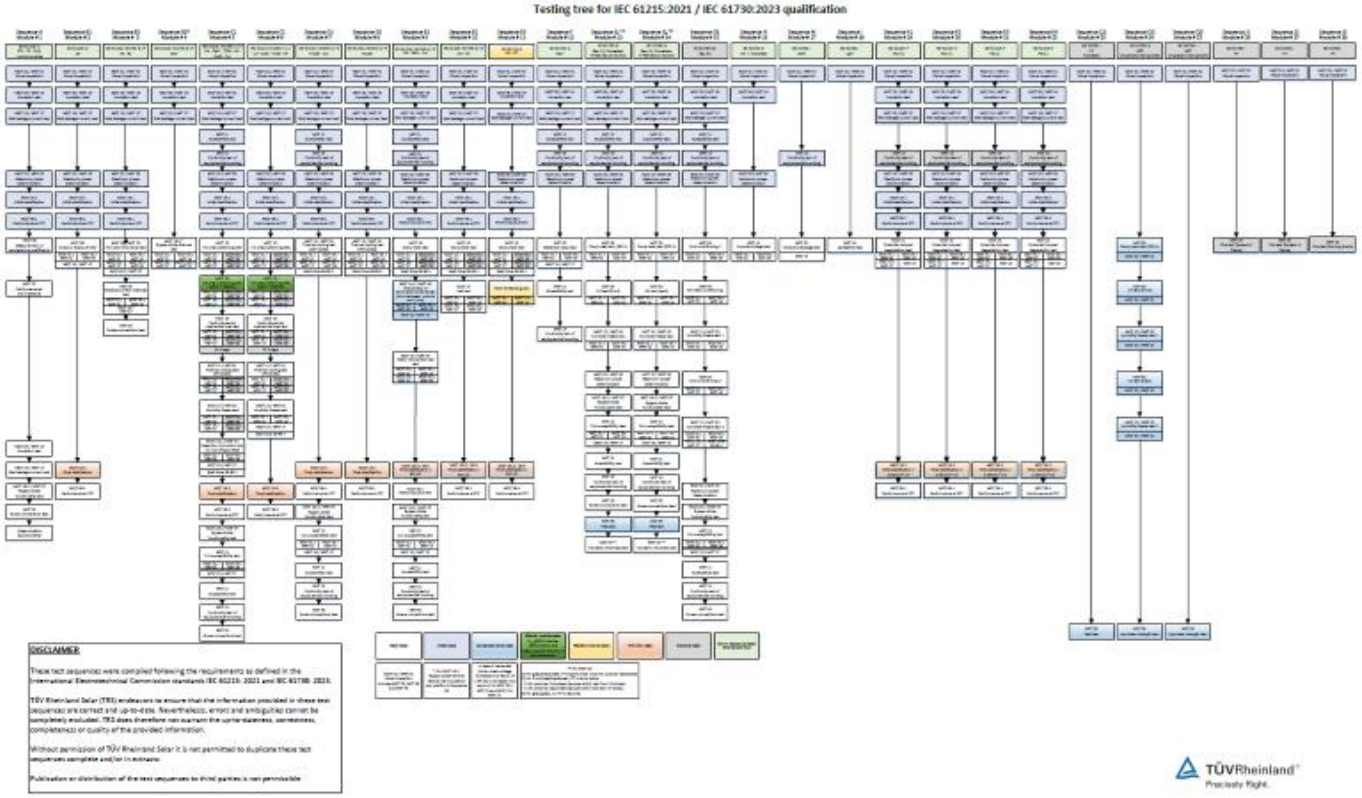
Test date (dd/mm/yyyy)			01/03/2024					—
Test method			☒ Simulator ☐ Natural sunlight					
Illuminated side			☒ Front side ☐ Rear side					
Ambient temperature [°C]			25 ± 2					
Irradiance [W/m²]			1000 ± 10					
Module temperature [°C]			25 ± 0.2					
Spectral mismatch			N/A					
Sample no.	P_{max} [W]	V_{mpp} [V]	I_{mpp} [A]	V_{oc} [V]	I_{sc} [A]	FF [%]	Degra-dation [%]	
2	616.8	45.09	13.678	53.01	14.651	79.4	-1.20	P
3	621.8	45.38	13.700	53.08	14.664	79.9	-0.69	P

Supplementary information:
Negative degradation means power *loss*.

ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

Appendix A: Test charts

Acc. to IEC 61215:2021 / IEC 61730:2023:



ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

Appendix B: Abbreviations used in the report

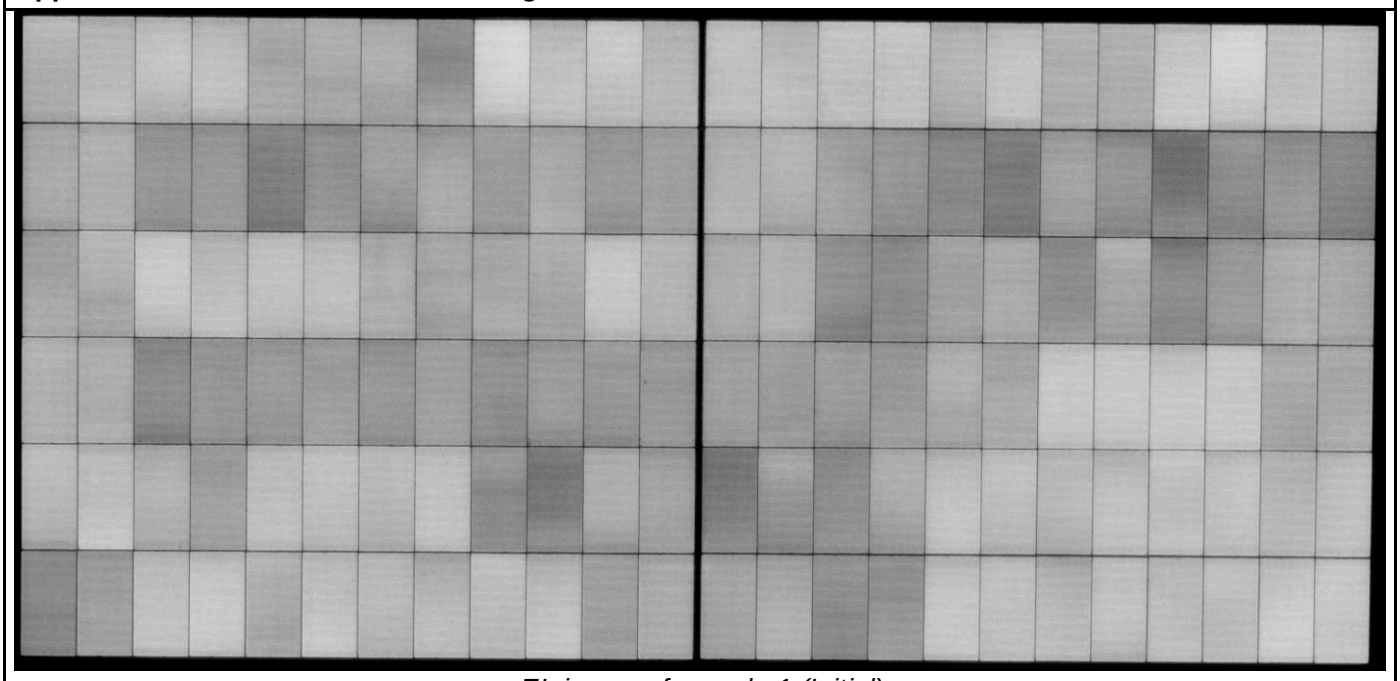
STC	Standard Test Conditions
P_{max}	Maximum power
I_{mpp}	Maximum power point current
V_{mpp}	Maximum power point voltage
I_{sc}	Short circuit current
V_{oc}	Open circuit voltage
FF	Fill factor
α	Current temperature coefficient
β	Voltage temperature coefficient
γ	Power temperature coefficient
S	Series connection
SP	Series-parallel connection
PS	Parallel-series connection
R_{iso}	Electrical insulation resistance
A	Module area
BNPI	Bifacial nameplate irradiance
BSI	Bifacial stress irradiance
G_{BNPI}	Equivalent bifacial nameplate irradiance
aBSI	Applied bifacial stress irradiance
φ	Bifaciality refers to the ratios between the main I-V characteristics of the rear side and the front side of a bifacial device, typically at Standard Test Conditions (STC) unless otherwise specified. It is quantified with reference to bifaciality coefficients, namely as φ.
$φ_{Pmax}$	Maximum power bifaciality coefficient
$φ_{Voc}$	Open-circuit voltage bifaciality coefficient
$φ_{Isc}$	Short-circuit current bifaciality coefficient

Statement of the estimated uncertainty of the test verdicts

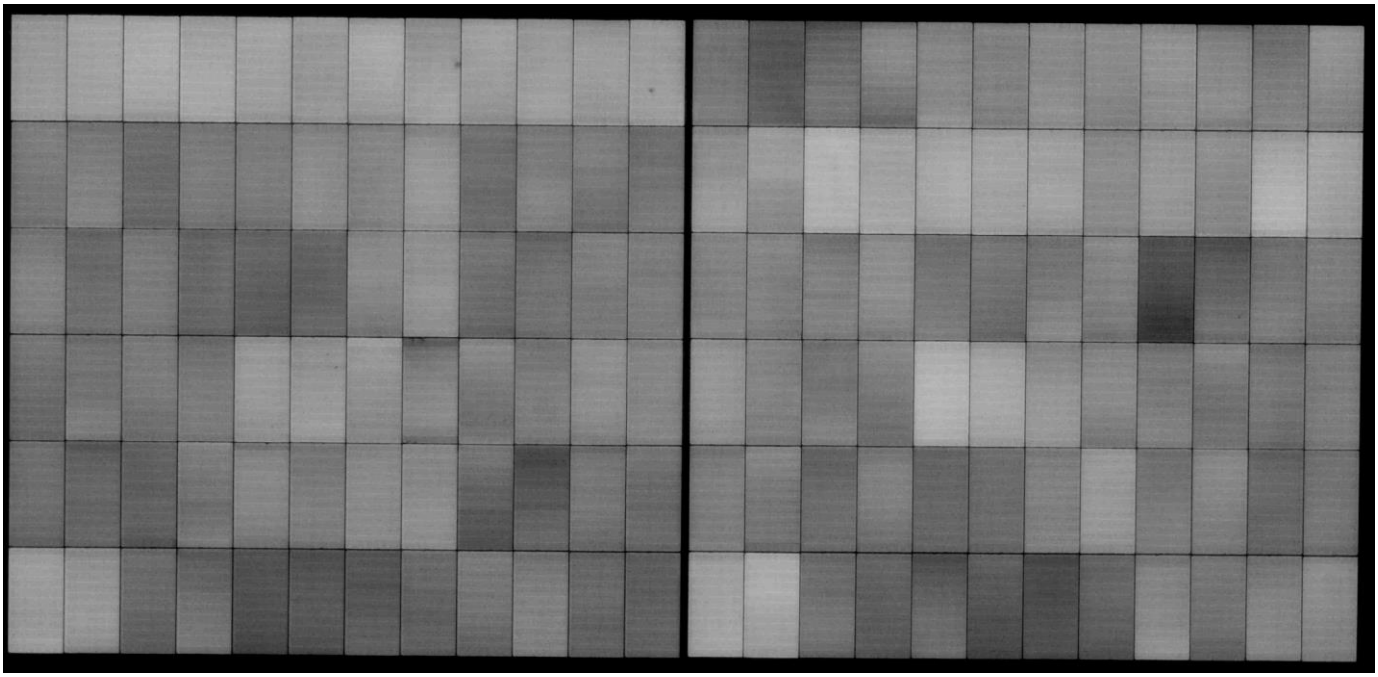
- Electrical performance rating is outside the scope of IEC 61215:2021 qualification testing. The verdicts of performance rating are only related to the test samples that were subjected to the tests. They cannot be generalised to the modules from the series production.
- The calibration to STC was performed with a class AAA solar simulator. The extended measurement uncertainty is:
  - 2σ (P_{mpp}) ≤ ± 3.0 %
  - 2σ (I_{SC}) ≤ ± 2.8 %
  - 2σ (V_{OC}) ≤ ± 0.9 %
- The reproducibility parameter r with the solar simulator is N/A.
- Relative measurements were performed with a flash type solar simulator.

ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

Appendix C: Electroluminescence Images



EL-image of sample 1 (Initial)



EL-image of sample 2 (Initial)

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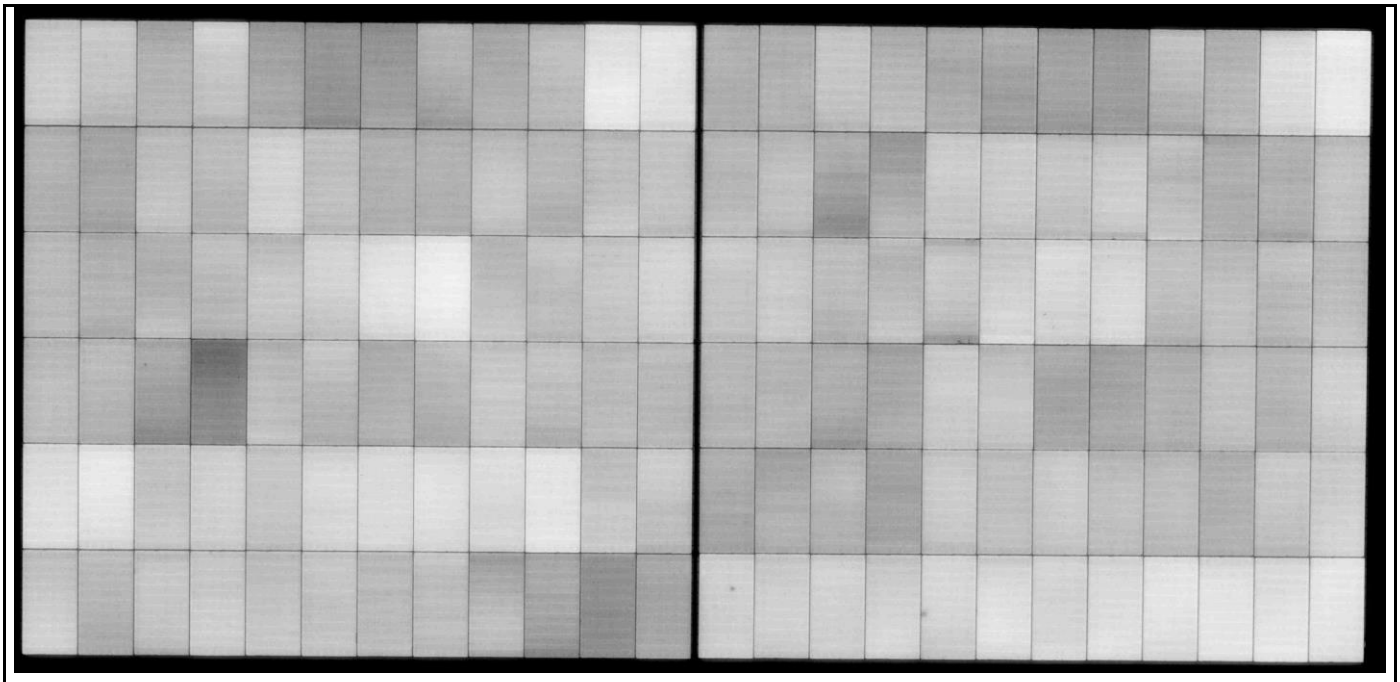
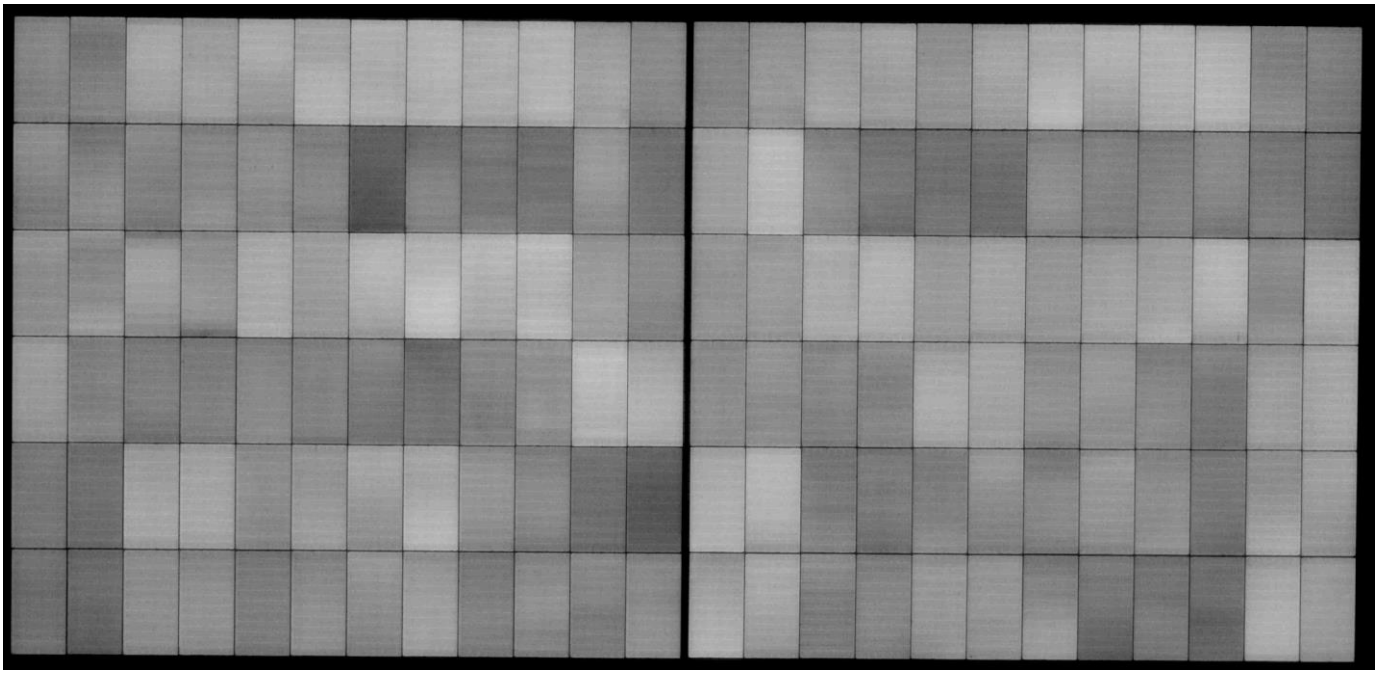
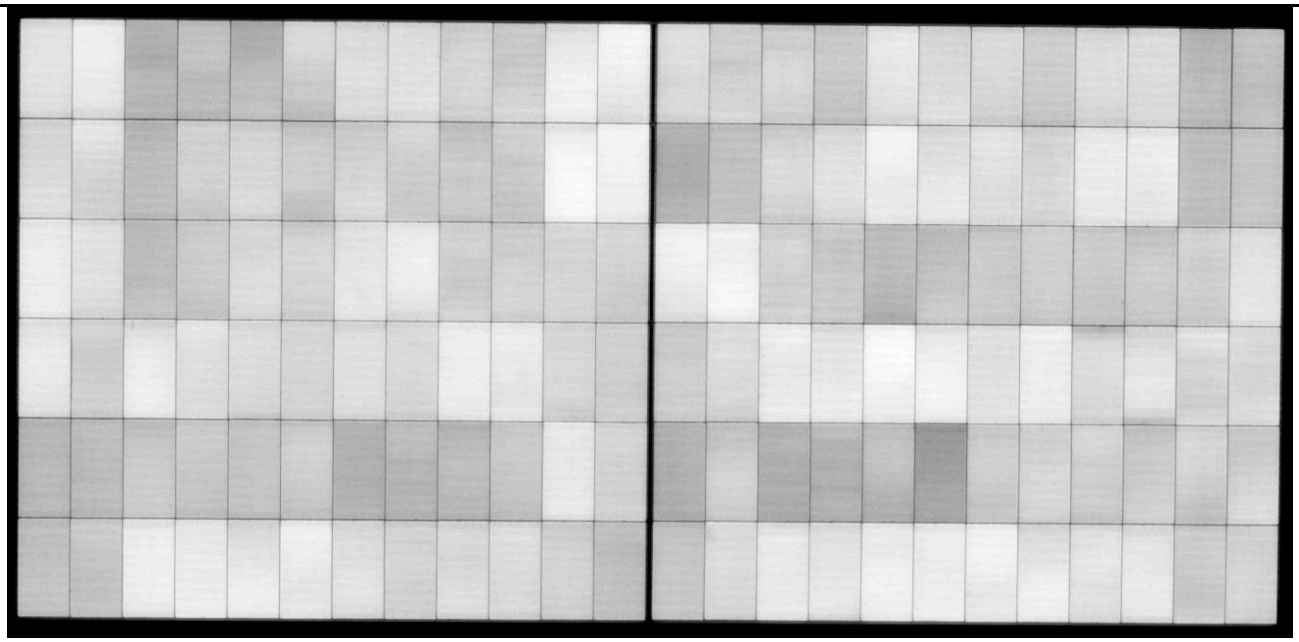


EL-image of sample 2 (Final)



EL-image of sample 3 (Initial)

ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION



EL-image of sample 3 (Final)

Appendix D: Measurement reports

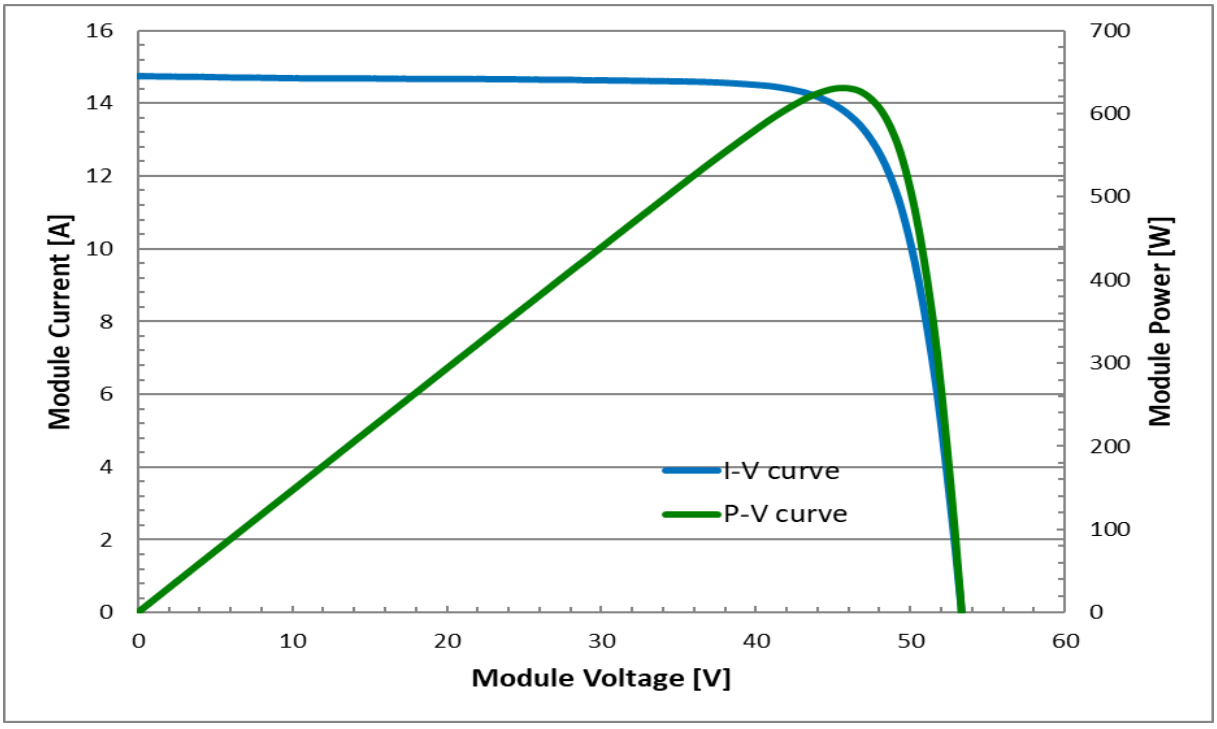


Fig. 1: IV-curves of module no. Y1124107G0218000387 (initial)

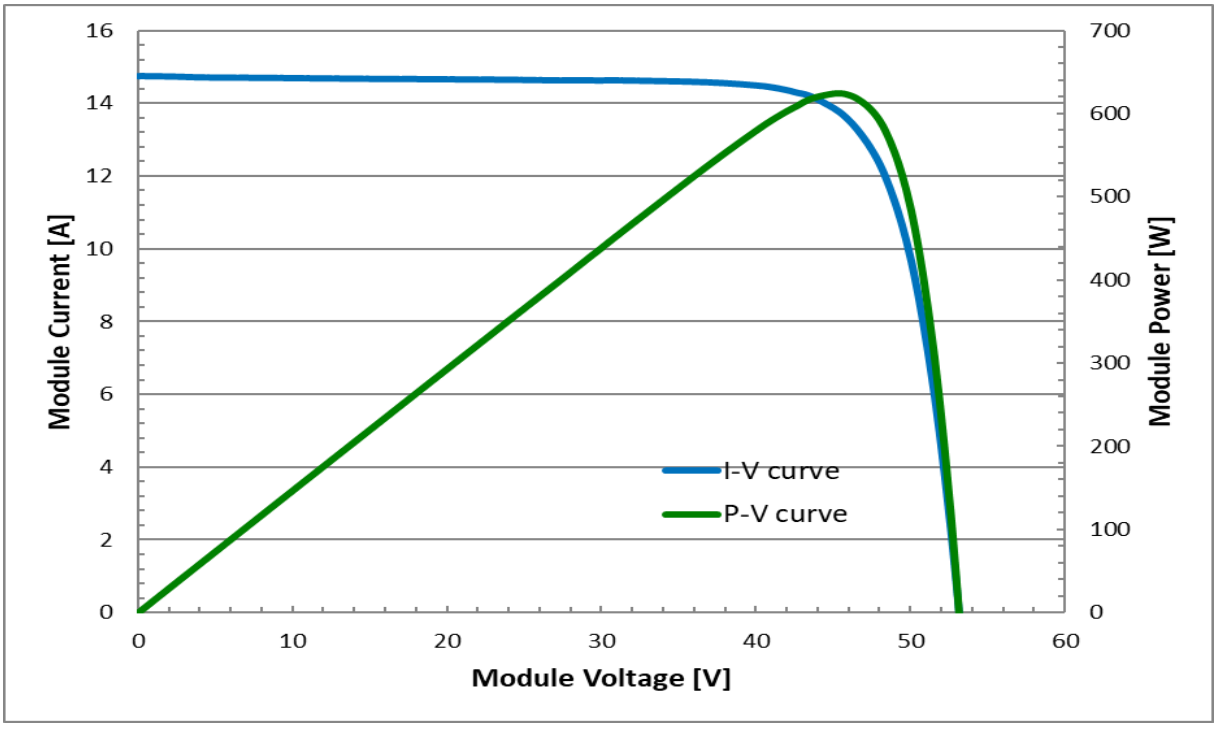


Fig. 2: IV-curves of module no. Y1124105G0216000243 (initial)

ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

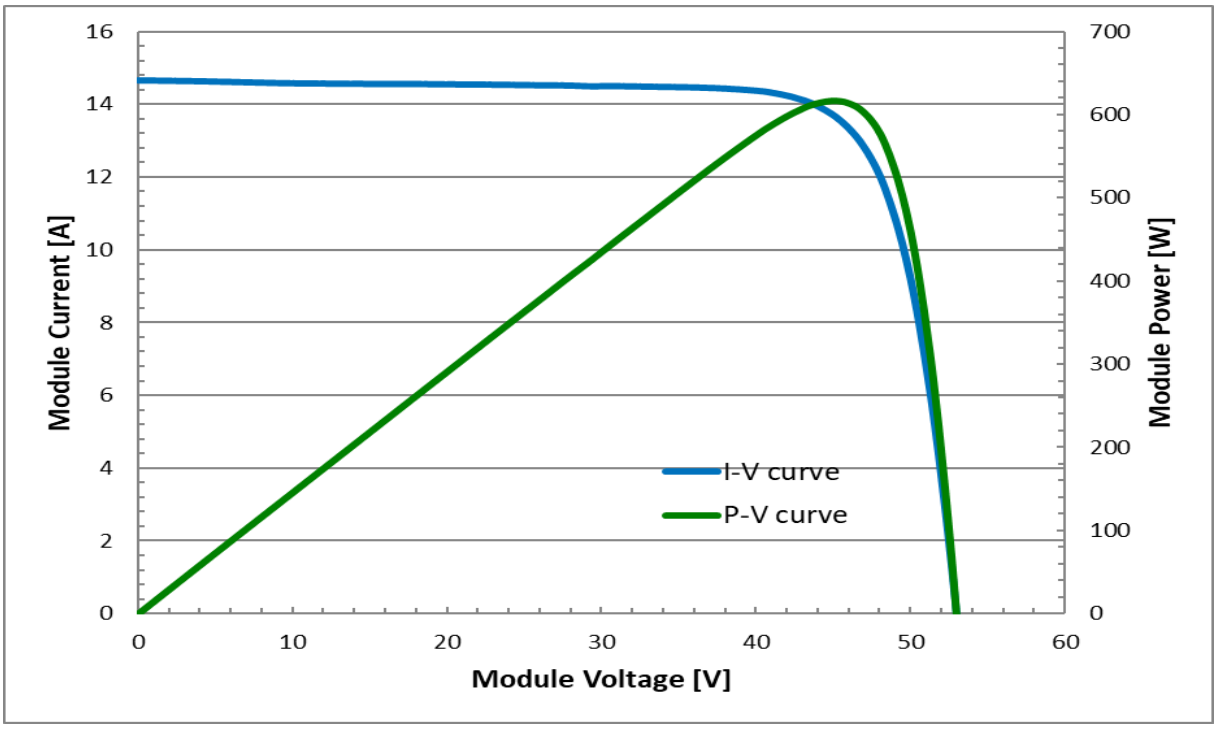


Fig. 3: IV-curves of module no. Y1124105G0216000243 (final)

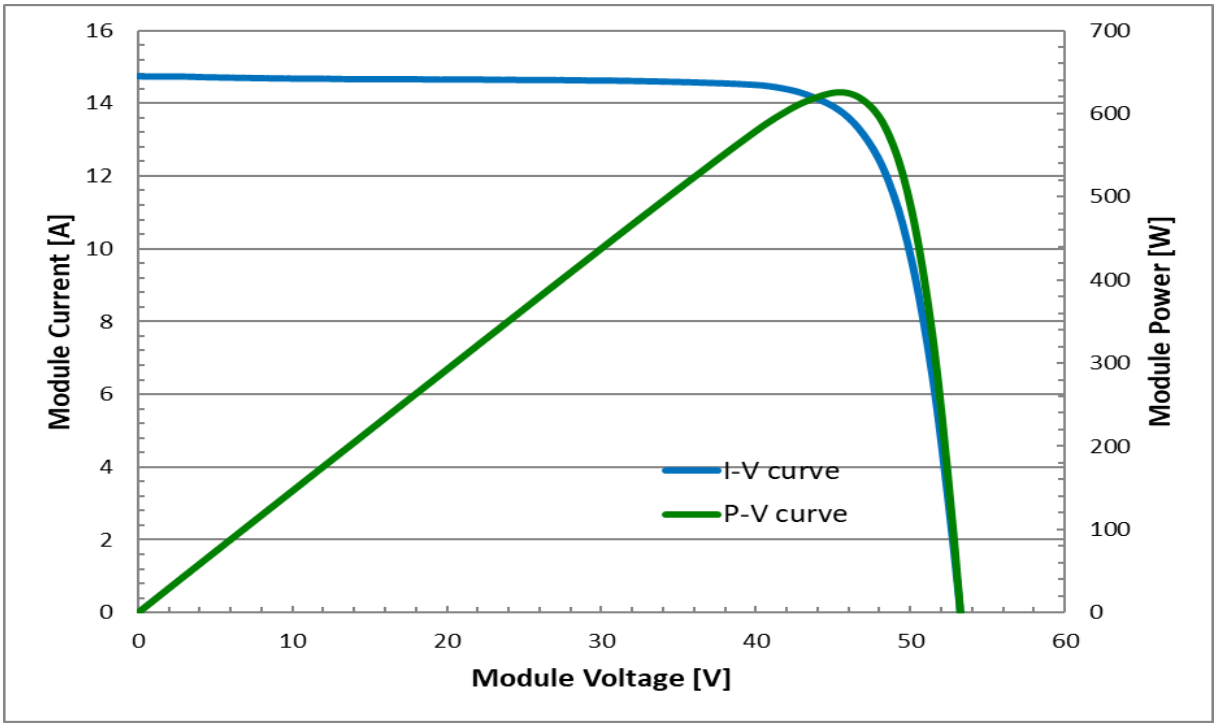


Fig. 4: IV-curves of module no. Y1124105G0216000182 (initial)

ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

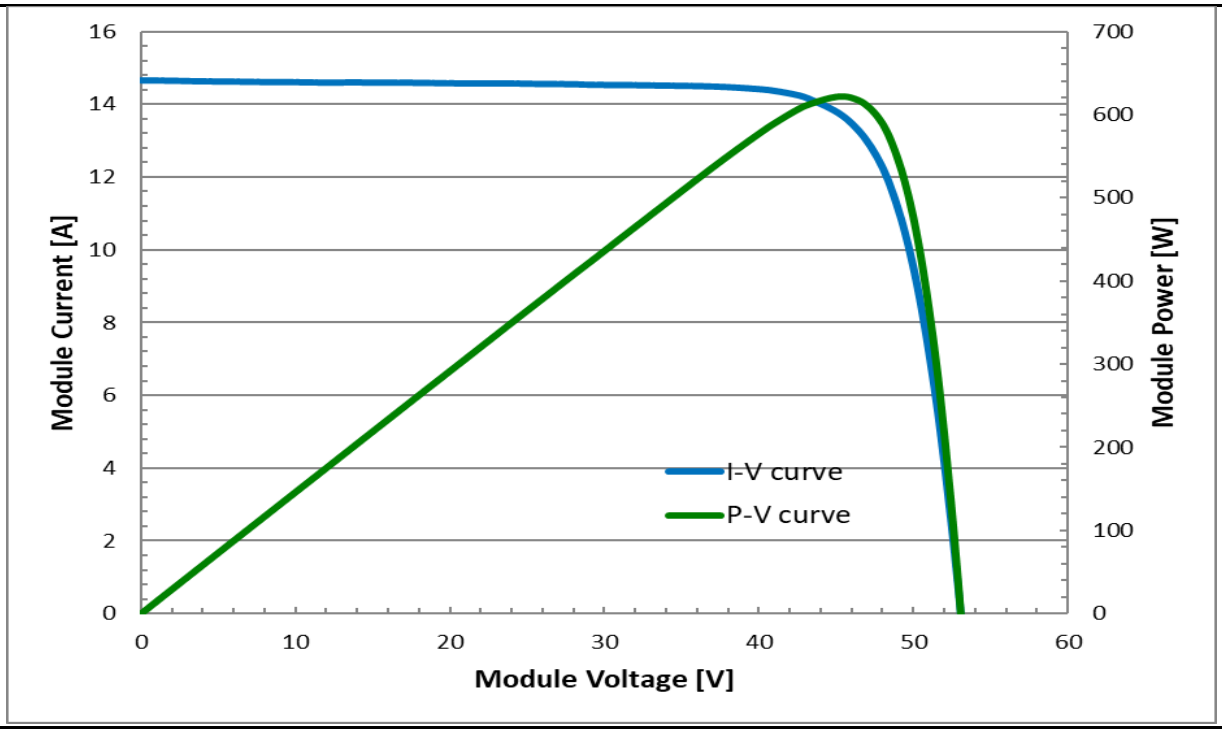


Fig. 5: IV-curves of module no. Y1124105G0216000182 (final)

FOTO-DOKUMENTATION
PHOTO DOCUMENTATION

Appendix E: Photos

Fig. 6: front view of test sample

Fig. 7: rear view of test sample

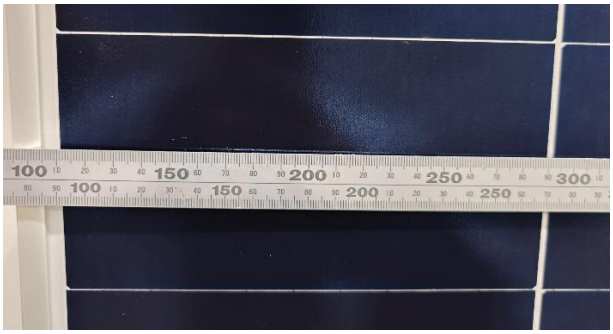


Fig. 8: detail view of solar cell

Fig. 9: detail view of type label

FOTO-DOKUMENTATION
PHOTO DOCUMENTATION

Fig. 10: detail view of closed junction box

Fig. 11: detail view of connector

Fig. 12: detail view of cable

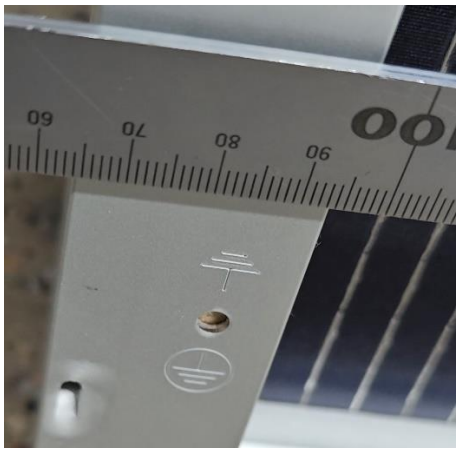


Fig. 13: detail view of equipotential bonding hole and symbol

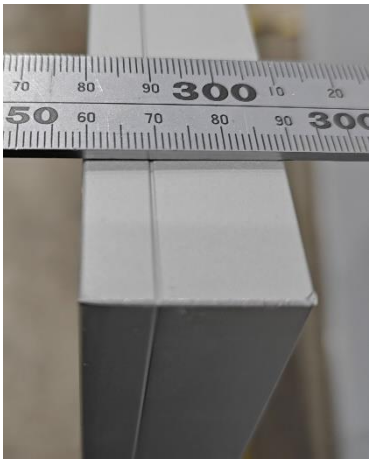


Fig. 14: detail view of frame corner

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ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

Appendix F: Constructional Data Form (CDF) No. CN248WVV 001

TÜVRheinland®	Customers reference no.: 2062211	TÜV Rheinland report no.: CN248WVV 001 TÜV Rheinland project no.: 244591111	Certificate: N/A File: N/A (For TUV Rheinland of N.A., Inc. use only)	Page 1 of 9

Constructional Data Form for Photovoltaic Modules

License Holder ..... : (full address)	Zhejiang Aiko Solar Technology Co., Ltd. No.655, Haopai Road, Suxi Town, Yiwu 322009 Zhejiang, P.R.China		
Production Factory 1 ..... : (full address)	Guangdong Aiko Solar Technology Co., Ltd. No.3, South Qili Avenue, Leping Town, Sanshui District, Foshan 528137 Guangdong, P.R.China		
Production Factory 2 ..... : (full address)	Zhuhai Fushan Aiko Solar Technology Co., Ltd. No.681, Fuguo Road, Doumen District, Zhuhai 519175 Guangdong, P.R.China		
Production Factory 3 ..... : (full address)	Zhejiang Aiko Solar Technology Co., Ltd. No.888, Longqi Road, Suxi Town, Yiwu 322009 Zhejiang, P.R.China		
Type of Product..... :	Photovoltaic (PV) Modules		
Trademark ..... :	AIKO		
Module family A: With 1/2 cut of mono c-Si cells (BC 20BB with cell size: 182.2mm×93.875mm)			
Type Name or Model No (STC)..... :	AIKO-Axxx-MAH72Dw (xxx=585-625, in steps of 5, 144 cells)	AIKO-Axxx-MAH60Dw (xxx=490-520, in steps of 5, 120 cells)	AIKO-Axxx-MAH54Dw (xxx=440-465, in steps of 5, 108 cells)
Type Name or Model No (BNPI)....:	AIKO-Axxx-MAH72Dw (xxx=615-655, in steps of 5, 144 cells)	AIKO-Axxx-MAH60Dw (xxx=515-545, in steps of 5, 120 cells)	AIKO-Axxx-MAH54Dw (xxx=460-485, in steps of 5, 108 cells)
Maximum System Voltage [V_{DC}] ... :	1500	1500	1500
Rated Maximum Power [W] (STC) :	585;590;595;600;605; 610;615;620;625	490;495;500;505;510; 515;520	440;445;450;455;460; 465
Rated Maximum Power [W] (BNPI):	615;620;625;630;635; 640;645;650;655	515;520;525;530;535; 540;545	460;465;470;475;480; 485
Tolerance of Rating [%]..... :	±3	±3	±3
Rated Short Circuit Current [A] (STC):	13.90;13.98;14.06;14.14; 14.22;14.30;14.38;14.46; 14.54	13.96;14.05;14.14;14.23; 14.32;14.41;14.50	13.94;14.04;14.14;14.24; 14.34;14.44
Rated Short Circuit Current [A] (BNPI):	14.52;14.60;14.68;14.76; 14.84;14.92;15.00;15.08; 15.16	14.58;14.67;14.76;14.85; 14.94;15.03;15.12	14.53;14.63;14.73;14.83; 14.93;15.03
Tolerance of Rating [%]..... :	±3	±3	±3
Rated Short Circuit Current [A] (BSI):	15.76±3%		
Rated Open Circuit Voltage [V] (STC):	53.84;53.94;54.04;54.14; 54.24;54.34;54.44;54.57; 54.70	44.92;45.02;45.12;45.22; 45.32;45.42;45.52	40.41;40.51;40.61;40.71; 40.81;40.93
Rated Open Circuit Voltage [V]	53.93;54.03;54.13;54.23;	44.99;45.09;45.19;45.29;	40.42;40.52;40.62;40.72;

Shenzhen	2024-03-25	Zhejiang	2024-03-25
(Place)	(date)	(Place)	(date)
(stamp and/or signature of TÜV Rheinland)		(stamp and/or signature of applicant)	

Note: Any errors or omissions in the CDF shall be reported to TÜV Rheinland immediately upon receipt by the applicant.

Appendix 1 of Preparing a Constructional Data Form/ Critical Component Lists (CDF) (MS-0004352)
Constructional Data Form for Electrical Products Version 6.1

ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

TÜVRheinland®	Customers reference no.: 2062211	TÜV Rheinland report no.: CN248WVV 001 TÜV Rheinland project no.: 244591111	Certificate: N/A File: N/A (For TUV Rheinland of N.A., Inc. use only)	Page 2 of 9

Constructional Data Form for Photovoltaic Modules

(BNPI):	54.33;54.43;54.53;54.63; 54.73	45.39;45.49;45.59	40.82;40.92
Tolerance of Rating [%]……:	±3	±3	±3
Over-current protection rating [A]:	25	25	25
Number of solar cells……:	144	120	108
Cells per bypass diode……:	48	40	36
Number of diodes……:	3	3	3
Serial/parallel connection of cells (S, SP, SPS) ……:	SP	SP	SP
Protection Class ……:	Class II	Class II	Class II
Fire Class (IEC 61730) ……:	Class C	Class C	Class C
Pollution Degree……:	I	I	I
Dimensions (l x w x h) [mm]……:	2323×1134×35	1946×1134×35	1757×1134×35
Module area [m²]……:	2.63	2.21	1.99
Min- creepage distance [mm] ……:	13.4±1.0 (to string connector) 12.9±1.0 (to cell)	13.6±1.0 (to string connector) 12.9±1.0 (to cell)	13.5±1.0 (to string connector) 12.9±1.0 (to cell)
Max. operational altitude [masl]….:	≤2000	≤2000	≤2000
Design load – downwards [Pa]…..:	3600	3600	3600
Design load – upwards [Pa]……:	1600	1600	1600
Safety factor for mechanical load.:	1.5	1.5	1.5
Type Name or Model No (STC) …..:	AIKO-Axxx-MAH72Db (xxx=585-620, in steps of 5, 144 cells)	AIKO-Axxx-MAH60Db (xxx=490-515, in steps of 5, 120 cells)	AIKO-Axxx-MAH54Db (xxx=440-465, in steps of 5, 108 cells)
Type Name or Model No (BNPI)….:	AIKO-Axxx-MAH72Db (xxx=615-650, in steps of 5, 144 cells)	AIKO-Axxx-MAH60Db (xxx=515-540, in steps of 5, 120 cells)	AIKO-Axxx-MAH54Db (xxx=460-485, in steps of 5, 108 cells)
Maximum System Voltage [V_{DC}] …:	1500	1500	1500
Rated Maximum Power [W] (STC) :	585;590;595;600;605; 610;615;620	490;495;500;505;510; 515	440;445;450;455;460; 465
Rated Maximum Power [W] (BNPI):	615;620;625;630;635; 640;645;650	515;520;525;530;535; 540	460;465;470;475;480; 485
Tolerance of Rating [%]……:	±3	±3	±3
Rated Short Circuit Current [A] (STC):	13.85;13.93;14.01;14.09; 14.17;14.25;14.33;14.41	13.88;13.97;14.06;14.15; 14.24;14.33	13.85;13.95;14.05;14.15; 14.25;14.35

Shenzhen	2024-03-25	Zhejiang	2024-03-25
(Place)	(date)	(Place)	(date)
(stamp and/or signature of TÜV Rheinland)		(stamp and/or signature of applicant)	

Note: Any errors or omissions in the CDF shall be reported to TÜV Rheinland immediately upon receipt by the applicant.

Appendix 1 of Preparing a Constructional Data Form/ Critical Component Lists (CDF) (MS-0004352)
Constructional Data Form for Electrical Products Version 6.1

ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

TÜVRheinland®	Customers reference no.: 2062211	TÜV Rheinland report no.: CN248WVV 001 TÜV Rheinland project no.: 244591111	Certificate: N/A File: N/A (For TUV Rheinland of N.A., Inc. use only)	Page 3 of 9

Constructional Data Form for Photovoltaic Modules

Rated Short Circuit Current [A] (BNPI):	14.46;14.54;14.62;14.70; 14.78;14.86;14.94;15.02	14.50;14.59;14.68;14.77; 14.86;14.95	14.43;14.53;14.63;14.73; 14.83;14.93
Tolerance of Rating [%]……:	±3	±3	±3
Rated Short Circuit Current [A] (BSI):	15.76±3%		
Rated Open Circuit Voltage [V] (STC):	54.04;54.14;54.24;54.34; 54.44;54.57;54.70;54.83	45.12;45.22;45.32;45.45; 45.58;45.71	40.61;40.71;40.81;40.93; 41.06;41.19
Rated Open Circuit Voltage [V] (BNPI):	54.13;54.23;54.33;54.43; 54.53;54.63;54.73;54.83	45.19;45.29;45.39;45.49; 45.59;45.69	40.62;40.72;40.82;40.92; 41.02;41.12
Tolerance of Rating [%]……:	±3	±3	±3
Over-current protection rating [A]:	25	25	25
Number of solar cells……:	144	120	108
Cells per bypass diode……:	48	40	36
Number of diodes……:	3	3	3
Serial/parallel connection of cells (S, SP, SPS) ……:	SP	SP	SP
Protection Class ……:	Class II	Class II	Class II
Fire Class (IEC 61730) ……:	Class C	Class C	Class C
Pollution Degree……:	I	I	I
Dimensions (l x w x h) [mm]……:	2323×1134×35	1946×1134×35	1757×1134×35
Module area [m²]……:	2.63	2.21	1.99
Min- creepage distance [mm] ……:	13.4±1.0 (to string connector) 12.9±1.0 (to cell)	13.6±1.0 (to string connector) 12.9±1.0 (to cell)	13.5±1.0 (to string connector) 12.9±1.0 (to cell)
Max. operational altitude [masl]….:	≤2000	≤2000	≤2000
Design load – downwards [Pa]…..:	3600	3600	3600
Design load – upwards [Pa]……:	1600	1600	1600
Safety factor for mechanical load.:	1.5	1.5	1.5
Module family B: With 1/2 cut of mono c-Si cells (BC 20BB with cell size: 182.2mm×96.25mm)			
Type Name or Model No (STC)…..:	AIKO-Gxxx-MCH72Dw (xxx=610-650, in steps of 5, 144 cells)	N/A	AIKO-Gxxx-MCH54Dw (xxx=460-485, in steps of 5, 108 cells)
Type Name or Model No (BNPI)….:	AIKO-Gxxx-MCH72Dw	N/A	AIKO-Gxxx-MCH54Dw

Shenzhen	2024-03-25	Zhejiang	2024-03-25
(Place)	(date)	(Place)	(date)
(stamp and/or signature of TÜV Rheinland)		(stamp and/or signature of applicant)	

Note: Any errors or omissions in the CDF shall be reported to TÜV Rheinland immediately upon receipt by the applicant.

Appendix 1 of Preparing a Constructional Data Form/ Critical Component Lists (CDF) (MS-0004352)
Constructional Data Form for Electrical Products Version 6.1

ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

TÜVRheinland®	Customers reference no.: 2062211	TÜV Rheinland report no.: CN248WVV 001 TÜV Rheinland project no.: 244591111	Certificate: N/A File: N/A (For TUV Rheinland of N.A., Inc. use only)	Page 4 of 9

Constructional Data Form for Photovoltaic Modules

	(xxx=665-705, in steps of 5, 144 cells)		(xxx=500-525, in steps of 5, 108 cells)
Maximum System Voltage [V_{DC}] ...:	1500	N/A	1500
Rated Maximum Power [W] (STC) :	610;615;620;625;630; 635;640;645;650	N/A	460;465;470;475;480; 485
Rated Maximum Power [W] (BNPI):	665;670;675;680;685; 690;695;700;705	N/A	500;505;510;515;520; 525
Tolerance of Rating [%].....:	±3	N/A	±3
Rated Short Circuit Current [A] (BSI):	17.62±3%		
Rated Short Circuit Current [A] (STC):	14.60;14.66;14.72;14.78; 14.84;14.90;14.96;15.02; 15.08	N/A	14.69;14.75;14.82;14.89; 14.96;15.03
Rated Short Circuit Current [A] (BNPI):	15.73;15.81;15.89;15.97; 16.05;16.13;16.21;16.29; 16.37	N/A	15.76;15.86;15.96;16.06; 16.16;16.26
Tolerance of Rating [%].....:	±3	N/A	±3
Rated Open Circuit Voltage [V] (STC):	53.70;53.80;53.90;54.00; 54.10;54.20;54.30;54.40; 54.50	N/A	40.27;40.37;40.50;40.63; 40.76;40.89
Rated Open Circuit Voltage [V] (BNPI):	53.74;53.84;53.94;54.04; 54.14;54.24;54.34;54.44; 54.54	N/A	40.33;40.43;40.53;40.63; 40.73;40.83
Tolerance of Rating [%].....:	±3	N/A	±3
Over-current protection rating [A]:	30	N/A	30
Number of solar cells.....:	144	N/A	108
Cells per bypass diode.....:	48	N/A	36
Number of diodes.....:	3	N/A	3
Serial/parallel connection of cells (S, SP, SPS) .....:	SP	N/A	SP
Protection Class .....:	Class II	N/A	Class II
Fire Class (IEC 61730) .....:	Class C	N/A	Class C
Pollution Degree.....:	I	N/A	I
Dimensions (l x w x h) [mm].....:	2382×1134×35	N/A	1802×1134×35
Module area [m²].....:	2.70	N/A	2.04

Shenzhen	2024-03-25	Zhejiang	2024-03-25
(Place)	(date)	(Place)	(date)
(stamp and/or signature of TÜV Rheinland)		(stamp and/or signature of applicant)	

Note: Any errors or omissions in the CDF shall be reported to TÜV Rheinland immediately upon receipt by the applicant.

Appendix 1 of Preparing a Constructional Data Form/ Critical Component Lists (CDF) (MS-0004352)
Constructional Data Form for Electrical Products Version 6.1

ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

TÜVRheinland®	Customers reference no.: 2062211	TÜV Rheinland report no.: CN248WVV 001 TÜV Rheinland project no.: 244591111	Certificate: N/A File: N/A (For TUV Rheinland of N.A., Inc. use only)	Page 5 of 9

Constructional Data Form for Photovoltaic Modules

Min- creepage distance [mm] ..... :	13.3±1.0 (to string connector) 12.9±1.0 (to cell)	N/A	13.8±1.0 (to string connector) 12.9±1.0 (to cell)
Max. operational altitude [masl]....:	≤2000	N/A	≤2000
Design load – downwards [Pa].....:	3600	N/A	3600
Design load – upwards [Pa].....:	1600	N/A	1600
Safety factor for mechanical load.:	1.5	N/A	1.5

Shenzhen	2024-03-25	Zhejiang	2024-03-25
(Place)	(date)	(Place)	(date)
(stamp and/or signature of TÜV Rheinland)		(stamp and/or signature of applicant)	

Note: Any errors or omissions in the CDF shall be reported to TÜV Rheinland immediately upon receipt by the applicant.

Appendix 1 of Preparing a Constructional Data Form/ Critical Component Lists (CDF) (MS-0004352)
Constructional Data Form for Electrical Products Version 6.1

ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

TÜVRheinland®	Customers reference no.: 2062211	TÜV Rheinland report no.: CN248WVV 001 TÜV Rheinland project no.: 244591111	Certificate: N/A File: N/A (For TUV Rheinland of N.A., Inc. use only)	Page 6 of 9

Constructional Data Form for Photovoltaic Modules

Copy of marking plate:

Shenzhen	2024-03-25	Zhejiang	2024-03-25
(Place)	(date)	(Place)	(date)
(stamp and/or signature of TÜV Rheinland)		(stamp and/or signature of applicant)	

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Appendix 1 of Preparing a Constructional Data Form/ Critical Component Lists (CDF) (MS-0004352)
Constructional Data Form for Electrical Products Version 6.1

ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION

TÜVRheinland®	Customers reference no.: 2062211	TÜV Rheinland report no.: CN248WVV 001 TÜV Rheinland project no.: 244591111	Certificate: N/A File: N/A (For TUV Rheinland of N.A., Inc. use only)	Page 7 of 9

Constructional Data Form for Photovoltaic Modules

List of Critical Components 1

Object	Manufacturer / trademark	Type / model	Technical data / ratings	Standard (if applicable)	Certificates (if applicable)
Front cover 1	CSG Holding Co., Ltd.	External AR coated semi-tempered glass	Thickness =2.0±0.2mm	—	—
Rear cover 1	CSG Holding Co., Ltd.	Semi-tempered glass (Glazed and No-Glazed)	Thickness =2.0±0.2mm	—	—
Encapsulation material 1	Hangzhou First Applied Material Co., Ltd.	Type: POE:TF4 (between glass and solar cell & between solar cell and rear cover)	Thickness =0.50mm, 360g/m^2; (between glass and solar cell) Thickness =0.60mm, 520g/m^2; (between solar cell and rear cover)	—	—
Frame parts 1	Yingkou Changtai Aluminum Material Co., Ltd.	Anodized aluminium alloy :6005-T6 Coating thickness: AA10 & AA15 Color: Silver & Black	Thickness = 35mm Long side:Thickness = 35×30mm Short side:Thickness = 35×15mm	—	—
Adhesive (frame) 1	Shanghai Huitian New Material Co., Ltd.	HT906Z	Color: White or Black	—	—
Solar cell 1	Manufactory 1: Guangdong Aiko Solar Technology Co., Ltd. Manufactory 2: Tianjin Aiko Solar Technology Co., Ltd. Manufactory 3: Zhejiang Aiko Solar Technology Co., Ltd. Manufactory 4: Zhuhai Fushan Aiko Solar Technology Co., Ltd.	182.2×187.75-20BB BC	Mono c-Si BC cell with 20 busbars 182.2mm×93.875mm (±0.5mm)×131± 15μm	—	—
Solar cell 2		182.2×192.5-20BB BC	Mono c-Si BC cell with 20 busbars 182.2mm×96.25mm (±0.5mm)×130± 20μm	—	—
Cell connectors 1	Suzhou YourBest New-type Materials Co., Ltd.	(0.25 -0.01/+0.015)mm ×(0.6±0.05)mm	Sn60%Pb40%	—	—
String connectors 1	Suzhou YourBest New-type Materials Co., Ltd.	(0.30±0.01) × (6.0±0.05)mm (0.30±0.01) × (4.0±0.05)mm	Sn60%Pb40%	—	—
Solder paste 1	Beijing Rtax Technology Co., Ltd.	SnP-sol-183	Sn63/36.8/AG0.2	—	—
Insulating adhesive 1	ShenZhen RongDa Photosensitive Science & Technology Co., Ltd.	White-ins	—	—	—
Fluxing agent 1	Suzhou Vital Electronics Material Technology Co., Ltd	WTO-PV105A	—	—	—
Fixing tape 1	Darbond Technology Co.,Ltd	DT-9609	Thickness=0.065±0.005mm	—	—

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Constructional Data Form for Photovoltaic Modules

Insulation material 1	Suzhou First PV Material Co., Ltd.	BEC-201 / BEC-201B	Thickness=0.265±0.13mm Color: White / Black	—	—

Junction box combination 1:					
Junction box	Zhejiang Aiko Solar Technology Co., Ltd.	AIKO-JB-xyz-01 (x=1 or 2; y=1 or 2; z=C)	Rated Voltage=1500VDC Rated Current=25A (y=1) Rated Current=30A (y=2) Reverse Current=40A RTI=110°C or 125°C	IEC 62790:2020 EN IEC 62790:2020	R 50618096
PV cable 1	Zhejiang Zhonghuan Sunter PV Technology Co., Ltd.	62930 IEC 131 1x4,0mm ² HALOGEN FREE LOW SMOKE	Rated Voltage=1500VDC	IEC 62930:2017	R 50436635
Connector 1	Zhejiang Zhonghuan Sunter PV Technology Co., Ltd.	PV-ZH202B	Rated Voltage=1500VDC Rated Current=40A	IEC 62852:2014 IEC 62852:2014/AMD1:2020 EN 62852:2015/A1:2020	Certified
Connector 2	Staubli Electrical Connectors AG	PV-KST4-EVO 2/xy_UR (male) PV-KBT4-EVO 2/xy_UR (Female)	Rated Voltage=1500VDC Rated Current=45A	IEC 62852:2014+A1	R 60127169
Bypass diode 1	1. Yangzhou Yangjie Electronic Technology Co., Ltd. 2. Panjit Electronics (Wuxi) CO., LTD. 3. Anhui Juxin Semiconductor Technology Co., Ltd. 4. ChangZhou Star Sea Electronics Co., Ltd. 5. Nantong Hornby Electronic Co., Ltd.	35SQ045 (y=1)	Tj max =200°C	—	—
Bypass diode 2	6. Hangzhou Daoming Microelectronics Co., Ltd. 7. Yangzhou Hongyang Technology Development Co., Ltd. 8. Zhejiang Zhonghuan Sunter PV Technology Co., Ltd. 9. NANTONG GAOXIN SCIENCE AND TECHNOLOGY DEVELOPMENT CO., LTD	40SQ045 (y=2)	Tj max =200°C	—	—
Adhesive 1 (junction box)	Zhenjiang Raybond New Material Technology Co Ltd.	RS-3316 (A/B)	Color: White or Black	—	—
Adhesive 2 (junction box)	H.B. Fuller (Suzhou) Advanced Material Co., Ltd	1527	Color: White or Black	—	—
Adhesive 3 (junction box)	Shanghai Huitian New Material Co., Ltd.	HT906Z	Color: White or Black	—	—

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Constructional Data Form for Photovoltaic Modules

Adhesive 4 (junction box)	Jiangsu Tianchen New Materials Co., Ltd.	HT-8258	Color: Black	—	—
Adhesive 5 (junction box)	Jiangsu Tianchen New Materials Co., Ltd.	HT-8366A/B	Color: Black	—	—
Potting material 1	Zhenjiang Raybond New Material Technology Co Ltd.	RS-3200 (A/B)	Color: White or Black	—	—
Potting material 2	H.B. Fuller (Suzhou) Advanced Material Co., Ltd	1533	Color: White or Black	—	—
Potting material 3	Shanghai Huitian New Material Co., Ltd.	5299W-S	Color: White or Black	—	—
Potting material 4	Jiangsu Tianchen New Materials Co., Ltd.	HT-6360	Color: Black	—	—

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