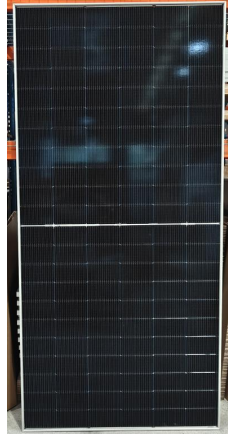


Prüfbericht-Nr.: <i>Test report no.:</i>	CN26Q2T9 001	Auftrags-Nr.: <i>Order no.:</i>	326144702	Seite 1 von 87 Page 1 of 87
Kunden-Referenz-Nr.: <i>Client reference no.:</i>	2545004	Auftragsdatum: <i>Order date:</i>	18/12/2025	
Auftraggeber: <i>Client:</i>	Shenzhen Qiming Photovoltaic Technology Co., Ltd. 201, Building 10, No. 2-1, Xiguangyue Third Road, Loucun Community, Xinhua Street, Guangming District, Shenzhen 518107 Guangdong, P.R.China			
Prüfgegenstand: <i>Test item:</i>	Photovoltaic (PV) module			
Bezeichnung / Typ-Nr.: <i>Identification / Type no.:</i>	See module type designation on page 22-24			
Auftrags-Inhalt: <i>Order content:</i>	Design qualification and type approval of photovoltaic (PV) modules			
Prüfgrundlage: <i>Test specification:</i>	Photovoltaic (PV) modules IEC 61215-1:2021; IEC 61215-1-1:2021; IEC 61215-2:2021; IEC 61730-1:2023; IEC 61730-2:2023; EN IEC 61215-1:2021; EN IEC 61215-1-1:2021; EN IEC 61215-2:2021; EN IEC 61730-1:2018; EN IEC 61730-2:2018			
Wareneingangsdatum: <i>Date of sample receipt:</i>	16/01/2026			
Prüfmuster-Nr.: <i>Test sample no.:</i>	See clause 12			
Prüfzeitraum: <i>Testing period:</i>	21/01/2026 - 23/01/2026			
Ort der Prüfung: <i>Place of testing:</i>	Refer to page 21			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shanghai) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von: <i>tested by:</i>	X 	genehmigt von: <i>authorized by:</i>	X 	
Datum: <i>Date:</i>	26/01/2026 Signed by: Jiayu Song	Ausstellungsdatum: <i>Issue date:</i>	26/01/2026 Signed by: Anderson Ruan	
Stellung / Position:	Project Engineer	Stellung / Position:	Authorizer	
Sonstiges / <i>Other:</i>	- Basic qualification for module types listed on page 22-24. - Refer to page 3-21 and Constructional Data Form (CDF) CN26Q2T9 001 for more details.			
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>	Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>			
* 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
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the above mentioned test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				

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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. <i>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.</i>
2	Wie vertraglich vereinbart, wurde dieses Dokument nur digital unterzeichnet. Der TÜV Rheinland hat nicht überprüft, welche rechtlichen oder sonstigen diesbezüglichen Anforderungen für dieses Dokument gelten. Diese Überprüfung liegt in der Verantwortung des Benutzers dieses Dokuments. Auf Verlangen des Kunden kann der TÜV Rheinland die Gültigkeit der digitalen Signatur durch ein gesondertes Dokument bestätigen. Diese Anfrage ist an unseren Vertrieb zu richten. Eine Umweltgebühr für einen solchen zusätzlichen Service wird erhoben. Informationen zur Verifizierung der Authentizität unserer Dokumente erhalten Sie auf folgender Webseite: go.tuv.com/digital-signature <i>As contractually agreed, this document has been signed digitally only. TUV Rheinland has not verified and unable to verify which legal or other pertaining requirements are applicable for this document. Such verification is within the responsibility of the user of this document. Upon request by its client, TUV Rheinland can confirm the validity of the digital signature by a separate document. Such request shall be addressed to our Sales department. An environmental fee for such additional service will be charged. For information on verifying the authenticity of our documents, please visit the following website: go.tuv.com/digital-signature</i>
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. <i>Test clauses with remark of * are subcontracted to qualified subcontractors and described under the respective test clause in the report.</i> <i>Deviations of testing specification(s) or customer requirements are listed in specific test clause in the report.</i>
4	Die Entscheidungsregel für Konformitätserklärungen basierend auf numerischen Messergebnissen in diesem Prüfbericht basiert auf der "Null-Grenzwert-Regel" und der "Einfachen Akzeptanz" gemäß ILAC G8:2019 und IEC Guide 115:2023, 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 bezüglich des Risikos durch diese Entscheidungsregel siehe ILAC G8:2019. <i>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 115:2023, 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.</i>

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Zusammenfassung der Prüfung Summary of testing

- 5** All of the required tests of the standards IEC 61215 / EN 61215 and IEC 61730 / EN 61730 were passed according to its regulations of the pass criteria. It is therefore declared, that the photovoltaic modules of the aforementioned types fulfil the requirements of the above mentioned standards, and it is recommended that certification should be granted.
- The Static mechanical load test (MQT 16) was performed with design load/safety factor based on test reports No. 492013492.001-012 from TÜV NORD (Hangzhou) Co., Ltd.:
- Positive: 3600Pa/1.5 (downward)
Negative: 1600Pa/1.5 (upward)
Remark: Except for QM182NTHCD-xxx-78, QM182NTHCD-xxx-72, QM182NTHCD-xxx-60 and QM182NTHCDH-xxx-54 type, see CDF for more details.
- Positive: 3600Pa/1.5 (downward)
Negative: 2400Pa/1.5 (upward)
Remark: Only for QM182NTHCD-xxx-78, QM182NTHCD-xxx-72, QM182NTHCD-xxx-60 and QM182NTHCDH-xxx-54 type, see CDF for more details.
- The fire tests (Class C) were performed according to UL 790 based on test reports No. 492013492.001-012 from TÜV NORD (Hangzhou) Co., Ltd.
- Basic qualification testing for model types on page 22-24. The relevant tests were performed in test report No. 492013492.001-012 from TÜV NORD (Hangzhou) Co., Ltd. The differences are as below.
- “QM182NTHCD-xxx-78”, “QM182NTHCD-xxx-72”, “QM182NTHCD-xxx-60” and “QM182NTHCDH-xxx-54” are introduced for the cell dimension 16BB TOPCon 182mm*91mm, 182mm*91.875mm with 156pcs, 144pcs, 120pcs and 108pcs.
- “QM188RTHCDH-xxx-54” is introduced for the cell dimension 16BB TOPCon 182.2* 93.75mm with 108pcs.
- “QM182NTHCDQ-xxx-78”, “QM182NTHCDQ-xxx-72”, “QM182NTHCDQ-xxx-60”, “QM182NTHCDQH-xxx-54” and “QM182NTHCDZ-xxx-78”, “QM182NTHCDZ-xxx-72”, “QM182NTHCDZ-xxx-60”, “QM182NTHCDZH-xxx-54”, “QM182NTHCDW-xxx-14”, “QM182NTHCDW-xxx-8”, “QM182NTHCDW-xxx-4” are introduced for the cell dimension 16BB TOPCon 182.2*91.875mm with 156pcs, 144pcs, 120pcs, 108pcs, 28pcs, 16pcs and 8pcs.
- “QM182NTHCDCr-xxx-78”, “QM182NTHCDCo-xxx-78”, “QM182NTHCDCy-xxx-78”, “QM182NTHCDCg-xxx-78”, “QM182NTHCDCb-xxx-78”, “QM182NTHCDCi-xxx-78”, “QM182NTHCDCp-xxx-78”, “QM182NTHCDCr-xxx-72”, “QM182NTHCDCo-xxx-72”, “QM182NTHCDCy-xxx-72”, “QM182NTHCDCg-xxx-72”, “QM182NTHCDCb-xxx-72”, “QM182NTHCDCi-xxx-72”, “QM182NTHCDCp-xxx-72”, “QM182NTHCDCr-xxx-60”, “QM182NTHCDCo-xxx-60”, “QM182NTHCDCy-xxx-60”, “QM182NTHCDCg-xxx-60”, “QM182NTHCDCb-xxx-60”, “QM182NTHCDCi-xxx-60”, “QM182NTHCDCp-xxx-60”, “QM182NTHCDCr-xxx-54”, “QM182NTHCDCo-xxx-54”, “QM182NTHCDCy-xxx-54”, “QM182NTHCDCg-xxx-54”, “QM182NTHCDCb-xxx-54”, “QM182NTHCDCi-xxx-54”, “QM182NTHCDCp-xxx-54” are introduced for the cell dimension 16BB TOPCon 182mm*91 mm with 156pcs, 144pcs, 120pcs and 108pcs.
- “QM210NTHCD-xxx-66” and “QM210NTHCD-xxx-60” are introduced for the cell dimension 18BB TOPCon 210mm*105mm with 132pcs and 120pcs.
- “QM210RTHCD-xxx-66”, “QM210RTHCD-xxx-60”, “QM210RTHCDH-xxx-54” and “QM210RTHCDH-xxx-48” are introduced for the cell dimension 16BB TOPCon 182.3 mm*105mm with 132pcs, 120pcs, 108pcs and 96pcs.

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Produktbeschreibung
Product description

“QM210VTHCD-xxx-78” is introduced for the cell dimension 18BB TOPCon 210mm*91.1mm with 156pcs.

1. “QM” stand for Shenzhen Qiming Photovoltaic Technology Co., Ltd.
2. “Q” series are for curved screen series module, “Z” series are for straight screen series module, “W” series are for photovoltaic tile module. “Cr” series are for red front glass, transparent back glass module, “Co” series are for orange front glass, transparent back glass module, “Cy” series are for yellow front glass, transparent back glass module, “Cg” series are for green front glass, transparent back glass module, “Cb” series are for blue front glass, transparent back glass module, “Ci” series are for indigo front glass, transparent back glass and indigo front glass and back glass series module, “Cp” series are for violet front glass, transparent back glass series module,
3. “H” series are for black module.

All the module types are under 1500V maximum system voltage.

- Constructional check and maximum power determination were performed on the representative model type QM210RTHCD-630-66 with bill of materials listed on page 27. The visual inspection/constructional check documented in this report showed conformity with the product from report No. 492013492.001-012 and the output power was within the tolerance.

- The name of the module types designation is changed to the corresponding model, see the correspondence below and please see the declaration from client in appendix E for more detail.No additional test was considered necessary.,

Old Type	New type
156 cells: QM182THCD-xxx-78 (xxx=610-640, in steps of 5)	156 cells: QM182NTHCD-xxx-78 (xxx=610 - 650, in steps of 5)
156 cells: QM182THCD-xxx-78 (xxx=615-650, in steps of 5)	
156 cells: QM182THCDQ-xxx-78 (xxx=615-650, in steps of 5)	156 cells: QM182NTHCDQ-xxx-78 (xxx = 615 - 650, in steps of 5)
156 cells: QM182THCDZ-xxx-78 (xxx=615-650, in steps of 5)	156 cells: QM182NTHCDZ-xxx-78 (xxx = 615 - 650, in steps of 5)
144 cells: QM182THCD-xxx-72 (xxx=565-590, in steps of 5)	144 cells: QM182NTHCD-xxx-72 (xxx = 565 - 595, in steps of 5)
144 cells: QM182THCD-xxx-72 (xx =570-595, in steps of 5)	
144 cells: QM182THCDQ-xxx-72 (xxx=570 - 595, in steps of 5)	144 cells: QM182NTHCDQ-xxx-72 (xxx = 570 - 595, in steps of 5)
144 cells: QM182THCDZ-xxx-72 (xxx=570 - 595, in steps of 5)	144 cells: QM182NTHCDZ-xxx-72 (xxx = 570 - 595, in steps of 5)
120 cells: QM182THCD-xxx-60 (xxx=470 - 490, in steps of 5)	120 cells: QM182NTHCD-xxx-60 (xxx = 470 - 500, in steps of 5)
120 cells: QM182THCD-xxx-60 (xxx=475 - 500, in steps of 5)	
120 cells: QM182THCDQ-xxx-60 (xxx=475 - 500, in steps of 5)	120 cells: QM182NTHCDQ-xxx-60 (xxx = 475 - 500, in steps of 5)
120 cells: QM182THCDZ-xxx-60 (xxx =475 - 500, in steps of 5)	120 cells: QM182NTHCDZ-xxx-60 (xxx = 475 - 500, in steps of 5)
108 cells: QM182THCD-xxx-54 (xxx =425 - 440, in steps of 5)	108 cells: QM182NTHCDH-xxx-54 (xxx = 425 - 450, in steps of 5)
108 cells: QM182THCD-xxx-54 (xxx =425 - 450, in steps of 5)	
108 cells: QM182THCDQ-xxx-54 (xxx =425 - 450, in steps of 5)	108 cells: QM182NTHCDQH-xxx-54 (xxx = 425 - 450, in steps of 5)
108 cells: QM182THCDZ-xxx-54 (xxx =425 - 450, in steps of 5)	108 cells: QM182NTHCDZH-xxx-54 (xxx = 425 - 450, in steps of 5)
28 cells: QM182THCDW-xxx-14 (xxx=105-110, in steps of 5)	28 cells: QM182NTHCDW-xxx-14 (xxx=105-110, in steps of 5)
16 cells: QM182THCDW-xxx-8 (xxx=60)	16 cells: QM182NTHCDW-xxx-8 (xxx=60)
8 cells: QM182THCDW-xxx-4 (xxx=30)	8 cells: QM182NTHCDW-xxx-4 (xxx=30)
108 cells: QM182THCD-xxx-54 (xxx=435 - 450, in steps of 5)	108 cells: QM188RTHCDH-xxx-54 (xxx = 435 - 450, in steps of 5)

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Produktbeschreibung
Product description

156 cells: QM182THCDC-xxx-78 (xxx=350-375, 410-445, 465-500, 540- 560, in steps of 5)	156 cells: QM182NTHCDCr-xxx-78 (xxx=350-375, in steps of 5) 156 cells: QM182NTHCDCo-xxx-78 (xxx=410-435, in steps of 5) 156 cells: QM182NTHCDCy-xxx-78(xxx=470-490, in steps of 5) 156 cells: QM182NTHCDCg-xxx-78 (xxx=480-500, in steps of 5) 156 cells: QM182NTHCDCb-xxx-78 (xxx=540-560, in steps of 5) 156 cells: QM182NTHCDCi-xxx-78 (xxx=420-445, in steps of 5) 156 cells: QM182NTHCDCp-xxx-78 (xxx=465-490, in steps of 5)
144 cells: QM182THCDC-xxx-72 (xxx=325-345, 380-410, 435-460, 500- 515, in steps of 5)	144 cells: QM182NTHCDCr-xxx-72 (xxx=325-345, in steps of 5) 144 cells: QM182NTHCDCo-xxx-72 (xxx=380-400, in steps of 5) 144 cells: QM182NTHCDCy-xxx-72(xxx=435-450, in steps of 5) 144 cells: QM182NTHCDCg-xxx-72 (xxx=445-460, in steps of 5) 144 cells: QM182NTHCDCb-xxx-72 (xxx=500-515, in steps of 5) 144 cells: QM182NTHCDCi-xxx-72 (xxx=390-410, in steps of 5) 144 cells: QM182NTHCDCp-xxx-72 (xxx=430-450, in steps of 5)
120 cells: QM182THCDC-xxx-60 (xxx=270-285, 315-340, 360-385, 415- 430, in steps of 5)	120 cells: QM182NTHCDCr-xxx-60(xxx=270-285, in steps of 5) 120 cells: QM182NTHCDCo-xxx-60 (xxx=315-335, in steps of 5) 120 cells: QM182NTHCDCy-xxx-60 (xxx=360-375, in steps of 5) 120 cells: QM182NTHCDCg-xxx-60 (xxx=370-385, in steps of 5) 120 cells: QM182NTHCDCb-xxx-60 (xxx=415-430, in steps of 5) 120 cells: QM182NTHCDCi-xxx-60 (xxx=325-340, in steps of 5) 120 cells: QM182NTHCDCp-xxx-60 (xxx=360-375, in steps of 5)
108 cells: QM182THCDC-xxx-54 (xxx=245-260, 285-305, 320-345, 375- 385, in steps of 5)	108 cells: QM182NTHCDCr-xxx-54(xxx=245-260, in steps of 5) 108 cells: QM182NTHCDCo-xxx-54 (xxx=285-300, in steps of 5) 108 cells: QM182NTHCDCy-xxx-54 (xxx=325-340, in steps of 5) 108 cells: QM182NTHCDCg-xxx-54 (xxx=335-345, in steps of 5) 108 cells: QM182NTHCDCb-xxx-54 (xxx=375-385, in steps of 5) 108 cells: QM182NTHCDCi-xxx-54 (xxx=290-305, in steps of 5) 108 cells: QM182NTHCDCp-xxx-54(xxx=320-340, in steps of 5)
132 cells: QM210THCD-xxx-66 (xxx=695-720, in steps of 5)	132 cells: QM210NTHCD-xxx-66 (xxx=695-725, in steps of 5)
120 cells: QM210THCD-xxx-60 (xxx=630-655, in steps of 5)	120 cells: QM210NTHCD-xxx-60 (xxx=630-655, in steps of 5)
132 cells: QM210THCD-xxx-66 (xxx=605-630, in steps of 5)	132 cells: QM210RTHCD-xxx-66 (xxx=605-630, in steps of 5)
120 cells: QM210THCD-xxx-60 (xxx=550-570, in steps of 5)	120 cells: QM210RTHCD-xxx-60 (xxx=550-570, in steps of 5)

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Product description

108 cells: QM210THCD-xxx-54 (xxx=495-510, in steps of 5)	108 cells: QM210RTHCDH-xxx-54 (xxx=495-510, in steps of 5)
96 cells: QM210THCD-xxx-48 (xxx=440-455, in steps of 5)	96 cells: QM210RTHCDH-xxx-48 (xxx=440-455, in steps of 5)
156 cells: QM210RTTHCD-xxx-78 (xxx=725-740, in steps of 5)	156 cells: QM210VTHCD-xxx-78 (xxx=725-740, in steps of 5)

- Update electrical parameters of the following models and please see the declaration from client in appendix E for more detail. No additional test was considered necessary.

		Old data				New data			
Type Name or Model Type	Maximum Power (Pmax) [W]	Open Circuit Voltage (Voc) [V]	Short Circuit Current (Isc) [A]	Voltage at Maximum Power (Vmp) [V]	Current at Maximum Power (Imp) [A]	Open Circuit Voltage (Voc) [V]	Short Circuit Current (Isc) [A]	Voltage at Maximum Power (Vmp) [V]	Current at Maximum Power (Imp) [A]
Under STC									
QM182NTHCD-xxx-78 (xxx=610-650, in steps of 5, 156 cells)	610	55.20	14.10	45.98	13.27	55.20	14.10	45.98	13.27
	615	55.97	13.58	47.14	13.04	55.97	13.58	47.14	13.04
	620	56.06	13.64	47.32	13.11	56.06	13.64	47.32	13.11
	625	56.15	13.70	47.47	13.17	56.15	13.70	47.47	13.17
	630	56.24	13.76	47.62	13.23	56.24	13.76	47.62	13.23
	635	56.31	13.82	47.77	13.30	56.31	13.82	47.77	13.30
	640	56.39	13.88	47.92	13.36	56.39	13.88	47.92	13.36
	645	56.47	13.94	48.07	13.42	56.47	13.94	48.07	13.42
	650	56.54	14.00	48.22	13.48	56.54	14.00	48.22	13.48
QM182NTHCD-xxx-72 (xxx=565-595, in steps of 5, 144 cells)	565	51.04	14.17	42.68	13.24	51.04	14.17	42.68	13.24
	570	51.86	13.48	44.49	12.82	51.86	13.48	44.49	12.82
	575	52.05	13.55	44.66	12.88	52.05	13.55	44.66	12.88
	580	52.24	13.62	44.83	12.94	52.24	13.62	44.83	12.94
	585	52.43	13.69	45.00	13.00	52.43	13.69	45.00	13.00
	590	52.63	13.75	45.17	13.06	52.63	13.75	45.17	13.06
	595	52.83	13.82	45.34	13.12	52.83	13.82	45.34	13.12
QM182NTHCD-xxx-60 (xxx=470-500, in steps of 5, 120 cells)	470	42.41	14.15	35.46	13.26	42.41	14.15	35.46	13.26
	475	42.73	13.28	37.76	12.57	42.73	13.28	37.76	12.57
	480	42.85	13.38	37.87	12.67	42.85	13.38	37.87	12.67
	485	42.97	13.48	37.98	12.77	42.97	13.48	37.98	12.77
	490	43.10	13.58	38.09	12.86	43.10	13.58	38.09	12.86
	495	43.22	13.68	38.20	12.96	43.22	13.68	38.20	12.96
	500	43.85	14.25	36.92	13.54	43.85	14.25	36.92	13.54
QM182NTHCDH-xxx-54 (xxx=425-450, in steps of 5,	425	39.05	13.17	34.08	12.48	39.05	13.17	34.08	12.48
	430	39.18	13.28	34.19	12.57	39.18	13.28	34.19	12.57

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Produktbeschreibung
Product description

	108 cells)	435	39.31	13.39	34.30	12.68	39.31	13.39	34.30	12.68
		440	39.44	13.50	34.41	12.79	39.44	13.50	34.41	12.79
		445	39.57	13.61	34.52	12.89	39.57	13.61	34.52	12.89
		450	39.60	14.20	33.39	13.48	39.60	14.20	33.39	13.48
	QM182NTHCDQ- xxx-78 QM182NTHCDZ- xxx-78 (xxx=615- 650, in steps of 5, 156 cells)	615	55.97	13.58	47.14	13.04	55.97	13.58	47.14	13.04
		620	56.06	13.64	47.32	13.11	56.06	13.64	47.32	13.11
		625	56.15	13.70	47.47	13.17	56.15	13.70	47.47	13.17
		630	56.24	13.76	47.62	13.23	56.24	13.76	47.62	13.23
		635	56.31	13.82	47.77	13.30	56.31	13.82	47.77	13.30
		640	56.39	13.88	47.92	13.36	56.39	13.88	47.92	13.36
		645	56.47	13.94	48.07	13.42	56.47	13.94	48.07	13.42
		650	56.54	14.00	48.22	13.48	56.54	14.00	48.22	13.48
	QM182NTHCDQ- xxx-72 QM182NTHCDZ- xxx-72 (xxx=570- 595, in steps of 5, 144 cells)	570	51.86	13.48	44.49	12.82	51.86	13.48	44.49	12.82
		575	52.05	13.55	44.66	12.88	52.05	13.55	44.66	12.88
		580	52.24	13.62	44.83	12.94	52.24	13.62	44.83	12.94
		585	52.43	13.69	45.00	13.00	52.43	13.69	45.00	13.00
		590	52.63	13.75	45.17	13.06	52.63	13.75	45.17	13.06
		595	52.83	13.82	45.34	13.12	52.83	13.82	45.34	13.12
	QM182NTHCDQ- xxx-60 QM182NTHCDZ- xxx-60 (xxx=475- 500, in steps of 5, 120 cells)	475	42.73	13.28	37.76	12.57	42.73	13.28	37.76	12.57
		480	42.85	13.38	37.87	12.67	42.85	13.38	37.87	12.67
		485	42.97	13.48	37.98	12.77	42.97	13.48	37.98	12.77
		490	43.10	13.58	38.09	12.86	43.10	13.58	38.09	12.86
		495	43.22	13.68	38.20	12.96	43.22	13.68	38.20	12.96
		500	43.85	14.25	36.92	13.54	43.85	14.25	36.92	13.54
	QM182NTHCDQH- xxx-54 QM182NTHCDZH- xxx-54 (xxx=425- 450, in steps of 5, 108 cells)	425	39.05	13.17	34.08	12.48	39.05	13.17	34.08	12.48
		430	39.18	13.28	34.19	12.57	39.18	13.28	34.19	12.57
		435	39.31	13.39	34.30	12.68	39.31	13.39	34.30	12.68
		440	39.44	13.50	34.41	12.79	39.44	13.50	34.41	12.79
		445	39.57	13.61	34.52	12.89	39.57	13.61	34.52	12.89
		450	39.60	14.20	33.39	13.48	39.60	14.20	33.39	13.48
	QM188RTHCDH- xxx-54 (xxx = 435-450, in steps of 5, 108 cells)	435	39.65	13.96	33.31	13.06	39.65	13.96	33.31	13.06
		440	39.85	14.03	33.51	13.13	39.85	14.03	33.51	13.13
		445	40.05	14.10	33.71	13.20	40.05	14.10	33.71	13.20
		450	40.25	14.17	33.91	13.27	40.25	14.17	33.91	13.27
	QM182NTHCDW- xxx-14 (xxx=105- 110, in steps of 5,	105	10.22	13.25	8.50	12.45	10.22	13.25	8.50	12.40

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28 cells)	110	10.24	13.45	8.55	12.96	10.24	13.45	8.55	12.92
QM182THCDW-xxx-8 (xxx=60, 16 cells)	60	5.53	13.72	4.69	12.98	5.53	13.72	4.69	12.89
QM182NTHCDW-xxx-4 (xxx=30, 8 cells)	30	2.86	13.45	2.41	12.86	2.86	13.45	2.37	12.86
QM182NTHCDCr-xxx-78 (xxx=350-375, in steps of 5, 156 cells)	350	56.47	7.81	49.15	7.13	56.47	7.81	49.15	7.13
	355	56.48	7.91	49.16	7.23	56.48	7.91	49.16	7.23
	360	56.50	8.02	49.18	7.33	56.50	8.02	49.18	7.33
	365	56.51	8.13	49.19	7.43	56.51	8.13	49.19	7.43
	370	56.53	8.24	49.20	7.53	56.53	8.24	49.20	7.53
	375	56.55	8.35	49.22	7.63	56.55	8.35	49.22	7.62
QM182NTHCDCo-xxx-78 (xxx=410-435, in steps of 5, 156 cells)	410	56.66	9.22	49.32	8.42	56.66	9.12	49.32	8.32
	415	56.68	9.22	49.33	8.42	56.68	9.22	49.33	8.42
	420	56.69	9.33	49.35	8.52	56.69	9.33	49.35	8.52
	425	56.71	9.43	49.36	8.62	56.71	9.43	49.36	8.62
	430	56.72	9.54	49.37	8.72	56.72	9.54	49.37	8.71
	435	56.74	9.65	49.39	8.82	56.74	9.65	49.39	8.81
QM182NTHCDCy-xxx-78 (xxx=470-490, in steps of 5, 156 cells)	470	56.85	10.41	49.49	9.51	56.85	10.41	49.49	9.50
	475	56.87	10.51	49.50	9.61	56.87	10.51	49.50	9.60
	480	56.89	10.62	49.52	9.70	56.89	10.62	49.52	9.70
	485	56.89	10.73	49.52	9.80	56.89	10.73	49.52	9.80
	490	56.90	10.84	49.53	9.90	56.90	10.84	49.53	9.90
QM182NTHCDCg-xxx-78 (xxx=480-500, in steps of 5, 156 cells)	480	56.89	10.62	49.52	9.70	56.89	10.62	49.52	9.70
	485	56.89	10.73	49.52	9.80	56.89	10.73	49.52	9.80
	490	56.90	10.84	49.53	9.90	56.90	10.84	49.53	9.90
	495	56.90	10.95	49.53	10.00	56.90	10.95	49.53	10.00
	500	56.92	11.06	49.55	10.10	56.92	11.06	49.55	10.10
QM182NTHCDCb-xxx-78 (xxx=540-560, in steps of 5, 156 cells)	540	57.05	11.91	49.66	10.88	57.05	11.91	49.66	10.88
	545	57.06	12.02	49.67	10.98	57.06	12.02	49.67	10.98
	550	57.08	12.13	49.69	11.08	57.08	12.13	49.69	11.07
	555	57.10	12.23	49.70	11.18	57.10	12.23	49.70	11.17
	560	57.11	12.34	49.72	11.27	57.11	12.34	49.72	11.27
QM182NTHCDCi-xxx-78 (xxx=425-445, in steps of 5, 156 cells)	420	56.69	9.33	49.35	8.52	56.69	9.33	49.35	8.52
	425	56.71	9.43	49.36	8.62	56.71	9.43	49.36	8.62
	430	56.72	9.54	49.37	8.72	56.72	9.54	49.37	8.71

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		435	56.74	9.65	49.39	8.82	56.74	9.65	49.39	8.81
		440	56.76	9.76	49.40	8.92	56.76	9.76	49.40	8.91
		445	56.77	9.87	49.42	9.02	56.77	9.87	49.42	9.01
QM182NTHCDCp- xxx-78 (xxx=465-490, in steps of 5, 156 cells)	465	56.84	10.30	49.47	9.41	56.84	10.30	49.47	9.40	
	470	56.85	10.41	49.49	9.51	56.85	10.41	49.49	9.50	
	475	56.87	10.51	49.50	9.61	56.87	10.51	49.50	9.60	
	480	56.89	10.62	49.52	9.70	56.89	10.62	49.52	9.70	
	485	56.89	10.73	49.52	9.80	56.89	10.73	49.52	9.80	
	490	56.90	10.84	49.53	9.90	56.90	10.84	49.53	9.90	
QM182NTHCDCr- xxx-72 (xxx=325-345, in steps of 5, 144 cells)	325	52.33	7.82	45.02	7.23	52.33	7.82	45.02	7.23	
	330	52.38	7.93	45.07	7.33	52.38	7.93	45.07	7.33	
	335	52.43	8.05	45.12	7.44	52.43	8.05	45.12	7.43	
	340	52.48	8.16	45.17	7.54	52.48	8.16	45.17	7.53	
	345	52.51	8.27	45.20	7.64	52.51	8.27	45.20	7.64	
QM182NTHCDCo- xxx-72 (xxx=380-400, in steps of 5, 144 cells)	380	52.68	9.08	45.37	8.39	52.68	9.08	45.37	8.38	
	385	52.70	9.20	45.39	8.49	52.70	9.20	45.39	8.49	
	390	52.71	9.31	45.40	8.60	52.71	9.31	45.40	8.60	
	395	52.73	9.43	45.42	8.71	52.73	9.43	45.42	8.70	
	400	52.74	9.55	45.43	8.81	52.74	9.55	45.43	8.81	
QM182NTHCDCy- xxx-72 (xxx=435-450, in steps of 5, 144 cells)	435	53.03	10.33	45.72	9.53	53.03	10.33	45.72	9.52	
	440	53.06	10.44	45.75	9.63	53.06	10.44	45.75	9.62	
	445	53.09	10.55	45.78	9.73	53.09	10.55	45.78	9.73	
	450	53.12	10.66	45.81	9.83	53.12	10.66	45.81	9.83	
QM182NTHCDCg- xxx-72 (xxx=445-460, in steps of 5, 144 cells)	445	53.09	10.55	45.78	9.73	53.09	10.55	45.78	9.73	
	450	53.12	10.66	45.81	9.83	53.12	10.66	45.81	9.83	
	455	53.15	10.78	45.84	9.94	53.15	10.78	45.84	9.93	
	460	53.19	10.89	45.88	10.04	53.19	10.89	45.88	10.03	
QM182NTHCDCb- xxx-72 (xxx=500-515, in steps of 5, 144 cells)	500	53.39	11.79	46.08	10.86	53.39	11.79	46.08	10.86	
	505	53.41	11.90	46.10	10.97	53.41	11.90	46.10	10.96	
	510	53.43	12.02	46.12	11.07	53.43	12.02	46.12	11.06	
	515	53.44	12.13	46.13	11.17	53.44	12.13	46.13	11.17	
QM182NTHCDCi- xxx-72 (xxx=390-410, in steps of 5, 144 cells)	390	52.71	9.31	45.40	8.60	52.71	9.31	45.40	8.60	
	395	52.73	9.43	45.42	8.71	52.73	9.43	45.42	8.70	
	400	52.74	9.55	45.43	8.81	52.74	9.55	45.43	8.81	
	405	52.75	9.67	45.44	8.92	52.75	9.67	45.44	8.92	
	410	52.76	9.90	45.45	9.14	52.76	9.80	45.45	9.03	
QM182NTHCDCp-	430	/	/	/	/	53.01	10.21	45.70	9.42	

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xxx-72 (xxx=430-450, in steps of 5, 144 cells)	435	53.03	10.33	45.72	9.53	53.03	10.33	45.72	9.53
	440	53.06	10.44	45.75	9.63	53.06	10.44	45.75	9.63
	445	53.09	10.55	45.78	9.73	53.09	10.55	45.78	9.73
	450	53.12	10.66	45.81	9.83	53.12	10.66	45.81	9.83
QM182NTHCDCr-xxx-60 (xxx=270-285, in steps of 5, 120 cells)	270	44.36	7.67	36.58	7.39	44.36	7.67	36.58	7.39
	275	44.38	7.81	36.60	7.53	44.38	7.81	36.60	7.52
	280	44.40	7.94	36.62	7.66	44.40	7.94	36.62	7.65
	285	44.42	8.08	36.64	7.79	44.42	8.08	36.64	7.79
QM182NTHCDCo-xxx-60 (xxx=315-335, in steps of 5, 120 cells)	315	44.54	8.91	36.76	8.58	44.54	8.91	36.76	8.58
	320	44.56	9.04	36.78	8.71	44.56	9.04	36.78	8.71
	325	44.58	9.18	36.80	8.84	44.58	9.18	36.80	8.84
	330	44.60	9.32	36.82	8.98	44.60	9.32	36.82	8.97
	335	44.62	9.60	36.84	9.24	44.62	9.48	36.84	9.10
QM182NTHCDCy-xxx-60 (xxx=360-375, in steps of 5, 120 cells)	360	44.72	10.14	36.94	9.76	44.72	10.14	36.94	9.75
	365	44.74	10.27	36.96	9.89	44.74	10.27	36.96	9.88
	370	44.76	10.41	36.98	10.02	44.76	10.41	36.98	10.01
	375	44.78	10.54	37.00	10.15	44.78	10.54	37.00	10.14
QM182NTHCDCg-xxx-60 (xxx=370-385, in steps of 5, 120 cells)	370	44.76	10.41	36.98	10.02	44.76	10.41	36.98	10.01
	375	44.78	10.54	37.00	10.15	44.78	10.54	37.00	10.14
	380	44.80	10.68	37.02	10.28	44.80	10.68	37.02	10.27
	385	44.82	10.82	37.04	10.41	44.82	10.82	37.04	10.40
QM182NTHCDCb-xxx-60 (xxx=415-430, in steps of 5, 120 cells)	415	44.94	11.63	37.16	11.18	44.94	11.63	37.16	11.18
	420	44.96	11.76	37.18	11.31	44.96	11.76	37.18	11.30
	425	44.98	11.89	37.21	11.44	44.98	11.89	37.21	11.43
	430	45.00	12.03	37.23	11.56	45.00	12.03	37.23	11.56
QM182NTHCDCi-xxx-60 (xxx=325-340, in steps of 5, 120 cells)	325	44.58	9.18	36.80	8.84	44.58	9.18	36.80	8.84
	330	44.60	9.32	36.82	8.98	44.60	9.32	36.82	8.97
	335	44.62	9.60	36.84	9.24	44.62	9.48	36.84	9.10
	340	44.64	9.59	36.86	9.24	44.64	9.59	36.86	9.23
QM182NTHCDCp-xxx-60 (xxx=360-375, in steps of 5, 120 cells)	360	44.72	10.14	36.94	9.76	44.72	10.14	36.94	9.75
	365	44.74	10.27	36.96	9.89	44.74	10.27	36.96	9.88
	370	44.76	10.41	36.98	10.02	44.76	10.41	36.98	10.01
	375	44.78	10.54	37.00	10.15	44.78	10.54	37.00	10.14
QM182NTHCDCr-xxx-54 (xxx=245-260, in steps of 5, 108 cells)	245	39.88	7.74	33.82	7.26	39.88	7.74	33.82	7.25
	250	39.90	7.90	33.84	7.40	39.90	7.90	33.84	7.40
	255	39.92	8.05	33.86	7.55	39.92	8.05	33.86	7.54

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		260	39.94	8.20	33.88	7.69	39.94	8.20	33.88	7.68
QM182NTHCDCo- xxx-54 (xxx=285- 300, in steps of 5, 108 cells)		285	40.04	8.97	33.98	8.40	40.04	8.97	33.98	8.40
		290	40.06	9.12	34.00	8.54	40.06	9.12	34.00	8.54
		295	40.08	9.27	34.02	8.69	40.08	9.27	34.02	8.68
		300	40.10	9.42	34.04	8.83	40.10	9.42	34.04	8.82
QM182NTHCDCy- xxx-54 (xxx=325- 340, in steps of 5, 108 cells)		325	40.20	10.18	34.14	9.53	40.20	10.18	34.14	9.53
		330	40.22	10.33	34.16	9.67	40.22	10.33	34.16	9.67
		335	40.24	10.48	34.18	9.82	40.24	10.48	34.18	9.81
		340	40.26	10.64	34.20	9.96	40.26	10.64	34.20	9.95
QM182NTHCDCg- xxx-54 (xxx=335- 345, in steps of 5, 108 cells)		335	40.24	10.48	34.18	9.82	40.24	10.48	34.18	9.81
		340	40.26	10.64	34.20	9.96	40.26	10.64	34.20	9.95
		345	40.28	10.79	34.22	10.10	40.28	10.79	34.22	10.09
QM182NTHCDCb- xxx-54 (xxx=375- 385, in steps of 5, 108 cells)		375	40.40	11.69	34.34	10.93	40.40	11.69	34.34	10.93
		380	40.42	11.84	34.36	11.07	40.42	11.84	34.36	11.07
		385	40.44	11.99	34.38	11.21	40.44	11.99	34.38	11.21
QM182NTHCDCi- xxx-54 (xxx=290- 305, in steps of 5, 108 cells)		290	40.06	9.12	34.00	8.54	40.06	9.12	34.00	8.54
		295	40.08	9.27	34.02	8.69	40.08	9.27	34.02	8.68
		300	40.10	9.42	34.04	8.83	40.10	9.42	34.04	8.82
		305	40.12	9.58	34.06	8.97	40.12	9.58	34.06	8.96
QM182NTHCDCp- xxx-54 (xxx=320- 340, in steps of 5, 108 cells)		320	40.18	10.03	34.12	9.39	40.18	10.03	34.12	9.39
		325	40.20	10.18	34.14	9.53	40.20	10.18	34.14	9.53
		330	40.22	10.33	34.16	9.67	40.22	10.33	34.16	9.67
		335	40.24	10.48	34.18	9.82	40.24	10.48	34.18	9.81
		340	40.26	10.64	34.20	9.96	40.26	10.64	34.20	9.95
QM210NTHCD- xxx-66 (xxx=695- 725, in steps of 5, 132 cells)		695	48.30	18.28	40.30	17.25	48.30	18.28	40.30	17.25
		700	48.60	18.32	40.50	17.29	48.60	18.32	40.50	17.29
		705	48.80	18.36	40.70	17.33	48.80	18.36	40.70	17.33
		710	49.00	18.40	40.90	17.36	49.00	18.40	40.90	17.36
		715	49.20	18.44	41.10	17.40	49.20	18.44	41.10	17.40
		720	49.40	18.49	41.30	17.44	49.40	18.49	41.30	17.44
		725	49.60	18.53	41.50	17.48	49.60	18.53	41.50	17.48
QM210NTHCD- xxx-60 (xxx=630- 655, in steps of 5, 120 cells)		630	43.90	18.24	36.60	17.22	43.90	18.24	36.60	17.22
		635	44.20	18.27	36.80	17.26	44.20	18.27	36.80	17.26
		640	44.50	18.30	37.00	17.30	44.50	18.30	37.00	17.30
		645	44.80	18.33	37.20	17.34	44.80	18.33	37.20	17.34
		650	45.10	18.36	37.40	17.38	45.10	18.36	37.40	17.38
		655	45.40	18.39	37.60	17.43	45.40	18.39	37.60	17.43

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	QM210RTHCD-xxx-66 (xxx=605-630, in steps of 5, 132 cells)	605	48.70	15.83	40.50	14.94	48.70	15.83	40.50	14.94
		610	49.00	15.86	40.80	14.96	49.00	15.86	40.80	14.96
		615	49.30	15.89	41.10	14.98	49.30	15.89	41.10	14.97
		620	49.60	15.91	41.40	14.99	49.60	15.91	41.40	14.98
		625	49.90	15.92	41.70	15.00	49.90	15.92	41.70	14.99
		630	50.20	15.93	42.00	15.01	50.20	15.93	42.00	15.01
	QM210RTHCD-xxx-60 (xxx=550-570, in steps of 5, 120 cells)	550	44.00	15.93	35.30	15.58	44.00	15.93	35.30	15.58
		555	44.30	15.96	35.50	15.63	44.30	15.96	35.50	15.63
		560	44.60	15.99	35.70	15.69	44.60	15.99	35.70	15.69
		565	44.90	16.03	35.90	15.74	44.90	16.03	35.90	15.74
		570	45.20	16.06	36.10	15.79	45.20	16.06	36.10	15.79
	QM210RTHCDH-xxx-54 (xxx=495-510, in steps of 5, 108 cells)	495	39.80	15.81	32.85	15.07	39.80	15.81	32.85	15.07
		500	40.00	15.88	33.05	15.13	40.00	15.88	33.05	15.13
		505	40.20	15.95	33.25	15.19	40.20	15.95	33.25	15.19
		510	40.40	16.02	33.45	15.25	40.40	16.02	33.45	15.25
	QM210RTHCDH-xxx-48 (xxx=440-455, in steps of 5, 96 cells)	440	34.98	15.98	29.50	14.92	34.98	15.98	29.50	14.92
		445	35.19	16.06	29.70	14.99	35.19	16.06	29.70	14.99
		450	35.40	16.14	29.90	15.06	35.40	16.14	29.90	15.06
		455	35.59	16.22	30.10	15.12	35.59	16.22	30.10	15.12
	QM210VTHCD-xxx-78 (xxx=725-740, in steps of 5, 156 cells)	725	57.70	16.00	48.38	14.99	57.70	16.00	48.38	14.99
		730	57.90	16.05	48.55	15.04	57.90	16.05	48.55	15.04
		735	58.10	16.10	48.71	15.09	58.10	16.10	48.71	15.09
		740	58.27	16.16	48.88	15.14	58.27	16.16	48.88	15.14
	Under BNPI									
	QM182NTHCD-xxx-78 (xxx=675-715, in steps of 5, 156 cells)	675	55.60	15.52	46.38	14.55	55.60	15.52	46.38	14.55
		680	55.75	15.69	47.29	14.34	55.75	15.69	47.30	14.38
		685	55.90	15.72	47.38	14.39	55.90	15.72	47.40	14.45
		690	56.05	15.75	47.47	14.44	56.05	15.75	47.50	14.52
		695	56.20	15.78	47.56	14.49	56.20	15.78	47.60	14.60
		700	56.35	15.83	47.64	14.54	56.35	15.83	47.70	14.67
		705	56.50	15.89	47.73	14.59	56.50	15.89	47.80	14.75
		710	56.65	15.92	47.82	14.64	56.65	15.92	47.90	14.82
		715	56.80	15.95	48.01	14.71	56.80	15.95	48.00	14.89
	QM182NTHCD-xxx-72 (xxx=625-655, in steps of 5, 144 cells)	625	51.08	15.60	43.08	14.51	51.08	15.60	43.08	14.51
		630	52.08	15.12	43.74	14.41	52.08	15.12	43.74	14.41
		635	52.24	15.21	43.88	14.48	52.24	15.21	43.88	14.48
		640	52.39	15.30	44.03	14.55	52.39	15.30	44.03	14.54
		645	52.54	15.38	44.17	14.62	52.54	15.38	44.17	14.61
		650	52.68	15.47	44.30	14.69	52.68	15.47	44.30	14.68

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		655	52.83	15.56	44.45	14.75	52.83	15.56	44.45	14.74
QM182NTHCD- xxx-60 (xxx=520- 550, in steps of 5, 120 cells)		520	42.77	15.57	35.82	14.52	42.77	15.57	35.82	14.52
		525	43.25	15.18	36.34	14.45	43.25	15.18	36.34	14.45
		530	43.42	15.27	36.38	14.55	43.42	15.27	36.38	14.56
		535	43.56	15.38	36.55	14.65	43.56	15.38	36.55	14.65
		540	43.72	15.48	36.65	14.75	43.72	15.48	36.65	14.74
		545	43.86	15.59	36.75	14.85	43.86	15.59	36.75	14.84
		550	44.02	15.69	36.85	14.95	44.02	15.69	36.85	14.93
QM182NTHCDH- xxx-54 (xxx=470- 495, in steps of 5, 108 cells)		470	39.01	15.05	32.74	14.36	39.01	15.05	32.74	14.36
		475	39.15	15.18	32.89	14.45	39.15	15.18	32.89	14.45
		480	39.29	15.30	33.05	14.55	39.29	15.30	33.05	14.53
		485	39.46	15.41	33.16	14.65	39.46	15.41	33.16	14.64
		490	39.60	15.53	33.27	14.75	39.60	15.53	33.27	14.74
		495	39.76	15.64	33.38	14.85	39.76	15.64	33.38	14.84
QM182NTHCDQ- xxx-78 QM182NTHCDZ- xxx-78 (xxx=680- 715, in steps of 5, 156 cells)		680	55.75	15.69	47.29	14.34	47.29	14.34	47.30	14.38
		685	55.90	15.72	47.38	14.39	47.38	14.39	47.40	14.45
		690	56.05	15.75	47.47	14.44	47.47	14.44	47.50	14.52
		695	56.20	15.78	47.56	14.49	47.56	14.49	47.60	14.60
		700	56.35	15.83	47.64	14.54	47.64	14.54	47.70	14.67
		705	56.50	15.89	47.73	14.59	47.73	14.59	47.80	14.75
		710	56.65	15.92	47.82	14.64	47.82	14.64	47.90	14.82
		715	56.80	15.95	48.01	14.71	48.01	14.71	48.00	14.89
QM182NTHCDQ- xxx-72 QM182NTHCDZ- xxx-72 (xxx=630- 655, in steps of 5, 144 cells)		630	52.08	15.12	43.74	14.41	43.74	14.41	43.74	14.41
		635	52.24	15.21	43.88	14.48	43.88	14.48	43.88	14.48
		640	52.39	15.30	44.03	14.55	52.39	15.30	44.03	14.54
		645	52.54	15.38	44.17	14.62	52.54	15.38	44.17	14.61
		650	52.68	15.47	44.30	14.69	52.68	15.47	44.30	14.68
		655	52.83	15.56	44.45	14.75	52.83	15.56	44.45	14.74
QM182NTHCDQ- xxx-60 QM182NTHCDZ- xxx-60 (xxx=525- 550, in steps of 5, 120 cells)		525	43.25	15.18	36.34	14.45	43.25	15.18	36.34	14.45
		530	43.42	15.27	36.38	14.55	43.42	15.27	36.38	14.56
		535	43.56	15.38	36.55	14.65	43.56	15.38	36.55	14.65
		540	43.72	15.48	36.65	14.75	43.72	15.48	36.65	14.74
		545	43.86	15.59	36.75	14.85	43.86	15.59	36.75	14.84
		550	44.02	15.69	36.85	14.95	44.02	15.69	36.85	14.93
QM182NTHCDQH -xxx-54 QM182NTHCDZH- xxx-54 (xxx=470- 495, in steps of 5,		470	39.01	15.05	32.74	14.36	39.01	15.05	32.74	14.36
		475	39.15	15.18	32.89	14.45	39.15	15.18	32.89	14.45
		480	39.29	15.30	33.05	14.55	39.29	15.30	33.05	14.53

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108 cells)	485	39.46	15.41	33.16	14.65	39.46	15.41	33.16	14.64
	490	39.60	15.53	33.27	14.75	39.60	15.53	33.27	14.74
	495	39.76	15.64	33.38	14.85	39.76	15.64	33.38	14.84
QM188RTHCDH- xxx-54 (xxx = 481,486,492,497, 108 cells)	481	39.65	15.36	33.31	14.44	39.65	15.36	33.31	14.44
	486	39.85	15.44	33.51	14.50	39.85	15.44	33.51	14.50
	492	40.05	15.51	33.71	14.60	40.05	15.51	33.71	14.60
	497	40.25	15.59	33.91	14.66	40.25	15.59	33.91	14.66
QM182THCDW- xxx-14 (xxx=115- 120, in steps of 5, 28 cells)	115	10.40	14.33	8.60	13.47	10.40	14.33	8.60	13.43
	120	10.59	14.40	8.65	13.98	10.59	14.40	8.65	13.93
QM182THCDW- xxx-8 (xxx=68, 16 cells)	68	6.15	13.82	5.22	13.08	6.15	13.82	5.22	13.08
QM182THCDW- xxx-4 (xxx=35, 8 cells)	35	3.20	13.52	2.73	12.96	3.20	13.52	2.73	12.96
QM182NTHCDCr- xxx-78 (xxx=390- 415, in steps of 5, 156 cells)	390	57.83	8.51	50.64	7.72	57.83	8.51	50.64	7.71
	395	57.85	8.60	50.65	7.81	57.85	8.60	50.65	7.80
	400	57.86	8.70	50.66	7.91	57.86	8.70	50.66	7.90
	405	57.88	8.81	50.68	8.00	57.88	8.81	50.68	8.00
	410	57.90	8.92	50.69	8.10	57.90	8.92	50.69	8.09
	415	57.91	9.02	50.71	8.19	57.91	9.02	50.71	50.71
QM182NTHCDCo- xxx-78 (xxx=460- 485, in steps of 5, 156 cells)	460	58.06	9.97	50.83	9.06	58.06	9.97	50.83	9.05
	465	58.07	10.08	50.85	9.15	58.07	10.08	50.85	9.15
	470	58.09	10.18	50.86	9.25	58.09	10.18	50.86	9.25
	475	58.11	10.29	50.88	9.35	58.11	10.29	50.88	9.34
	480	58.12	10.40	50.89	9.44	58.12	10.40	50.89	9.44
	485	58.14	10.50	50.90	9.54	58.14	10.50	50.90	9.53
QM182NTHCDCy- xxx-78 (xxx=520- 540, in steps of 5, 156 cells)	520	58.22	11.24	50.98	10.21	58.22	11.24	50.98	10.21
	525	58.24	11.35	50.99	10.31	58.24	11.35	50.99	10.31
	530	58.25	11.45	51.00	10.40	58.25	11.45	51.00	10.40
	535	58.27	11.56	51.02	10.50	58.27	11.56	51.02	10.50
	540	58.28	11.66	51.03	10.59	58.28	11.66	51.03	10.59
QM182NTHCDCg- xxx-78 (xxx=530- 550, in steps of 5, 156 cells)	530	58.25	11.45	51.00	10.40	58.25	11.45	51.00	10.40
	535	58.27	11.56	51.02	10.50	58.27	11.56	51.02	10.50
	540	58.28	11.66	51.03	10.59	58.28	11.66	51.03	10.59
	545	/	/	/	/	58.30	11.77	51.05	10.68

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		550	58.32	11.87	51.06	10.78	58.32	11.87	51.06	10.78
		555	58.33	11.97	51.07	10.88	Remov ed	remove d	remove d	removed
	QM182NTHCDCb- xxx-78 (xxx=590- 610, in steps of 5, 156 cells)	590	58.45	12.70	51.17	11.54	58.45	12.70	51.17	11.53
		595	58.46	12.81	51.19	11.63	58.46	12.81	51.19	11.63
		600	58.48	12.91	51.20	11.73	58.48	12.91	51.20	11.72
		605	58.49	13.02	51.22	11.82	58.49	13.02	51.22	11.82
		610	58.51	13.12	51.22	11.92	58.51	13.12	51.22	11.91
	QM182NTHCDCi- xxx-78 (xxx=470- 495, in steps of 5, 156 cells)	470	58.09	10.18	50.86	9.25	58.09	10.18	50.86	9.25
		475	58.11	10.29	50.88	9.35	58.11	10.29	50.88	9.34
		480	58.12	10.40	50.89	9.44	58.12	10.40	50.89	9.44
		485	58.14	10.50	50.90	9.54	58.14	10.50	50.90	9.53
		490	58.15	10.61	50.92	9.63	58.15	10.61	50.92	9.63
		495	58.17	10.71	50.93	9.73	58.17	10.71	50.93	9.72
	QM182NTHCDCp- xxx-78 (xxx=515- 540, in steps of 5, 156 cells)	515	58.20	11.14	50.96	10.12	58.20	11.14	50.96	10.11
		520	58.22	11.24	50.98	10.21	58.22	11.24	50.98	10.20
		525	58.24	11.35	50.99	10.31	58.24	11.35	50.99	10.30
		530	58.25	11.45	51.00	10.40	58.25	11.45	51.00	10.40
		535	58.27	11.56	51.02	10.50	58.27	11.56	51.02	10.49
		540	58.28	11.66	51.03	10.59	58.28	11.66	51.03	10.59
	QM182NTHCDCr- xxx-72 (xxx=360- 380, in steps of 5, 144 cells)	360	52.61	8.62	45.30	7.96	52.61	8.62	45.30	7.95
		365	52.63	8.73	45.32	8.06	52.63	8.73	45.32	8.06
		370	52.66	8.85	45.35	8.17	52.66	8.85	45.35	8.16
		375	52.67	8.96	45.36	8.28	52.67	8.96	45.36	8.27
		380	52.68	9.08	45.37	8.39	52.68	9.08	45.37	8.38
	QM182NTHCDCo- xxx-72 (xxx=425- 445, in steps of 5, 144 cells)	425	52.94	10.11	45.63	9.32	52.94	10.11	45.63	9.32
		430	53.01	10.21	45.70	9.42	53.01	10.21	45.70	9.42
		435	53.03	10.33	45.72	9.53	53.03	10.33	45.72	9.52
440		53.06	10.44	45.75	9.63	53.06	10.44	45.75	9.62	
445		53.09	10.55	45.78	9.73	53.09	10.55	45.78	9.73	
QM182NTHCDCy- xxx-72 (xxx=475- 490, in steps of 5, 144 cells)	475	53.31	11.22	46.00	10.34	53.31	11.22	46.00	10.33	
	480	53.36	11.32	46.05	10.43	53.36	11.32	46.05	10.43	
	485	53.36	11.44	46.05	10.54	53.36	11.44	46.05	10.54	
	490	53.37	11.56	46.06	10.65	53.37	11.56	46.06	10.64	
QM182NTHCDCg- xxx-72 (xxx=485- 500, in steps of 5,144 cells)	485	53.36	11.44	46.05	10.54	53.36	11.44	46.05	10.54	
	490	53.37	11.56	46.06	10.65	53.37	11.56	46.06	10.64	
	495	53.38	11.67	46.07	10.76	53.38	11.67	46.07	10.75	
	500	/	/	/	/	53.39	11.79	46.08	10.86	

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		510	53.43	12.02	46.12	11.07	remov ed	remove d	remove d	removed
QM182NTHCDCb- xxx-72 (xxx=545- 560, in steps of 5, 144 cells)	545	53.55	12.81	46.25	11.79	53.55	12.81	46.25	11.79	
	550	53.57	12.92	46.27	11.90	53.57	12.92	46.27	11.89	
	555	53.57	13.04	46.28	12.00	53.57	13.04	46.28	12.00	
	560	53.59	13.15	46.29	12.11	53.59	13.15	46.29	12.10	
QM182NTHCDCi- xxx-72 (xxx=435- 455, in steps of 5, 144 cells)	435	53.03	10.33	45.72	9.53	53.03	10.33	45.72	9.52	
	440	53.06	10.44	45.75	9.63	53.06	10.44	45.75	9.62	
	445	53.09	10.55	45.78	9.73	53.09	10.55	45.78	9.73	
	450	/	/	/	/	53.12	10.66	45.81	9.83	
	455	53.15	10.78	45.84	9.94	53.15	10.78	45.84	9.94	
	460	53.19	10.89	45.88	10.04	remov ed	remove d	remove d	removed	
QM182NTHCDCp- xxx-72 (xxx=470- 490, in steps of 5, 144 cells)	470	/	/	/	/	53.27	11.11	45.96	10.23	
	475	53.31	11.22	46.00	10.34	53.31	11.22	46.00	10.33	
	480	53.36	11.32	46.05	10.43	53.36	11.32	46.05	10.43	
	485	53.36	11.44	46.05	10.54	53.36	11.44	46.05	10.54	
	490	53.37	11.56	46.06	10.65	53.37	11.56	46.06	10.64	
QM182NTHCDCr- xxx-60 (xxx=300- 315, in steps of 5, 120 cells)	300	44.48	8.49	36.70	8.19	44.48	8.49	36.70	8.18	
	305	44.50	8.63	36.72	8.32	44.50	8.63	36.72	8.31	
	310	44.52	8.77	36.74	8.45	44.52	8.77	36.74	8.45	
	315	44.54	8.91	36.76	8.58	44.54	8.91	36.76	8.58	
QM182NTHCDCo- xxx-60 (xxx=355- 375, in steps of 5, 120 cells)	355	44.70	10.00	36.92	9.63	44.70	10.00	36.92	9.62	
	360	44.72	10.14	36.94	9.76	44.72	10.14	36.94	9.75	
	365	44.74	10.27	36.96	9.89	44.74	10.27	36.96	9.88	
	370	44.76	10.41	36.98	10.02	44.76	10.41	36.98	10.01	
	375	44.78	10.54	37.00	10.15	44.78	10.54	37.00	10.14	
QM182NTHCDCy- xxx-60 (xxx=395- 410, in steps of 5, 120 cells)	395	44.86	11.09	37.08	10.67	44.86	11.09	37.08	10.66	
	400	44.88	11.22	37.10	10.79	44.88	11.22	37.10	10.79	
	405	44.90	11.36	37.12	10.92	44.90	11.36	37.12	10.92	
	410	44.92	11.49	37.14	11.05	44.92	11.49	37.14	11.05	
QM182NTHCDCg- xxx-60 (xxx=405- 420, in steps of 5,120 cells)	405	44.90	11.36	37.12	10.92	44.90	11.36	37.12	10.92	
	410	44.92	11.49	37.14	11.05	44.92	11.49	37.14	11.05	
	415	44.94	11.63	37.16	11.18	44.94	11.63	37.16	11.18	
	420	/	/	/	/	44.96	11.76	37.18	11.30	
	430	45.00	12.03	37.23	11.56	remov ed	remove d	remove d	removed	
QM182NTHCDCb- xxx-60 (xxx=455-	455	45.10	12.70	37.33	12.20	45.10	12.70	37.33	12.20	
	460	45.12	12.83	37.35	12.33	45.12	12.83	37.35	12.32	

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	470, in steps of 5, 120 cells)	465	45.14	12.97	37.37	12.46	45.14	12.97	37.37	12.45
		470	45.16	13.10	37.39	12.58	45.16	13.10	37.39	12.58
	QM182NTHCDCi- xxx-60 (xxx=365- 380, in steps of 5, 120 cells)	365	44.74	10.27	36.96	9.89	44.74	10.27	36.96	9.88
		370	44.76	10.41	36.98	10.02	44.76	10.41	36.98	10.01
		375	44.78	10.54	37.00	10.15	44.78	10.54	37.00	10.14
		380	44.78	10.54	37.00	10.15	44.80	10.68	37.02	10.27
	QM182NTHCDCp- xxx-60 (xxx=395- 410, in steps of 5, 120 cells)	395	44.86	11.09	37.08	10.67	44.86	11.09	37.08	10.66
		400	44.88	11.22	37.10	10.79	44.88	11.22	37.10	10.79
		405	44.90	11.36	37.12	10.92	44.90	11.36	37.12	10.92
		410	44.92	11.49	37.14	11.05	44.92	11.49	37.14	11.05
	QM182NTHCDCr- xxx-54 (xxx=275- 290, in steps of 5, 108 cells)	275	40.00	8.66	33.94	8.12	40.00	8.66	33.94	8.11
		280	40.02	8.81	33.96	8.26	40.02	8.81	33.96	8.25
		285	40.04	8.97	33.98	8.40	40.04	8.97	33.98	8.40
		290	40.06	9.12	34.00	8.54	40.06	9.12	34.00	8.54
	QM182NTHCDCo- xxx-54 (xxx=315- 330, in steps of 5, 108 cells)	315	40.16	9.88	34.10	9.25	40.16	9.88	34.10	9.25
		320	40.18	10.03	34.12	9.39	40.18	10.03	34.12	9.39
		325	40.20	10.18	34.14	9.53	40.20	10.18	34.14	9.53
		330	40.22	10.33	34.16	9.67	40.22	10.33	34.16	9.67
	QM182NTHCDCy- xxx-54 (xxx=360- 375, in steps of 5, 108 cells)	360	40.34	11.24	34.28	10.52	40.34	11.24	34.28	10.51
		365	40.36	11.39	34.30	10.66	40.36	11.39	34.30	10.65
		370	40.38	11.54	34.32	10.80	40.38	11.54	34.32	10.79
		375	40.40	11.69	34.34	10.93	40.40	11.69	34.34	10.93
	QM182NTHCDCg- xxx-54 (xxx=370- 380, in steps of 5, 108 cells)	370	40.38	11.54	34.32	10.80	40.38	11.54	34.32	10.79
		375	40.40	11.69	34.34	10.93	40.40	11.69	34.34	10.93
		380	40.42	11.84	34.36	11.07	40.42	11.84	34.36	11.07
	QM182NTHCDCb- xxx-54 (xxx=410- 420, in steps of 5, 108 cells)	410	40.54	12.73	34.48	11.90	40.54	12.73	34.48	11.90
		415	40.56	12.88	34.50	12.04	40.56	12.88	34.50	12.04
		420	40.58	13.03	34.52	12.18	40.58	13.03	34.52	12.18
	QM182NTHCDCi- xxx-54 (xxx=320- 335, in steps of 5, 108 cells)	320	40.18	10.03	34.12	9.39	40.18	10.03	34.12	9.39
		325	40.20	10.18	34.14	9.53	40.20	10.18	34.14	9.53
		330	40.22	10.33	34.16	9.67	40.22	10.33	34.16	9.67
		335	40.24	10.48	34.18	9.82	40.24	10.48	34.18	9.81
	QM182NTHCDCp- xxx-54 (xxx=355- 375, in steps of 5, 108 cells)	355	40.32	11.09	34.26	10.38	40.32	11.09	34.26	10.37
		360	40.34	11.24	34.28	10.52	40.34	11.24	34.28	10.51
		365	40.36	11.39	34.30	10.66	40.36	11.39	34.30	10.65
		370	40.38	11.54	34.32	10.80	40.38	11.54	34.32	10.79

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		375	40.40	11.69	34.34	10.93	40.40	11.69	34.34	10.93
QM210NTHCD- xxx-66 (xxx=770- 800, in steps of 5, 121 cells)		770	48.64	20.07	40.64	18.95	48.64	20.07	40.64	18.95
		775	48.94	20.11	40.84	18.98	48.94	20.11	40.84	18.98
		780	49.14	20.16	41.04	18.99	49.14	20.16	41.04	19.00
		785	49.35	20.20	41.25	19.03	49.35	20.20	41.25	19.03
		790	49.55	20.24	41.45	19.06	49.55	20.24	41.45	19.06
		795	49.75	20.30	41.65	19.09	49.75	20.30	41.65	19.09
		800	49.95	20.36	41.85	19.12	49.95	20.36	41.85	19.12
QM210NTHCD- xxx-60 (xxx=690- 715, in steps of 5, 120 cells)		690	47.77	20.02	36.91	18.69	45.87	19.32	36.91	18.69
		695	48.10	20.06	37.11	18.73	46.20	19.36	37.11	18.73
		700	48.43	20.09	37.31	18.76	46.53	19.39	37.31	18.76
		705	48.75	20.12	37.52	18.79	46.85	19.42	37.52	18.79
		710	49.08	20.16	37.72	18.82	47.18	19.46	37.72	18.82
		715	49.41	20.19	37.92	18.86	47.51	19.48	37.92	18.86
QM210RTHCD- xxx-66 (xxx=670- 695, in steps of 5, 132 cells)		670	49.04	17.38	40.84	16.39	49.04	17.38	40.84	16.40
		675	49.35	17.41	41.15	16.40	49.35	17.41	41.15	16.40
		680	49.65	17.44	41.45	16.41	49.65	17.44	41.45	16.41
		685	49.95	17.47	41.75	16.41	49.95	17.47	41.75	16.41
		690	50.25	17.48	42.05	16.42	50.25	17.48	42.05	16.42
		695	50.55	17.49	42.36	16.42	50.55	17.49	42.35	16.42
QM210RTHCD- xxx-60 (xxx=605- 625, in steps of 5, 120 cells)		605	44.51	17.38	35.60	16.99	44.51	17.38	35.60	16.99
		610	44.81	17.47	35.81	17.04	44.81	17.47	35.81	17.04
		615	45.11	17.55	36.01	17.08	45.11	17.55	36.01	17.08
		620	45.42	17.62	36.21	17.12	45.42	17.62	36.21	17.12
		625	45.72	17.71	36.41	17.17	45.72	17.71	36.41	17.17
QM210RTHCDH- xxx-54 (xxx=545- 560, in steps of 5, 108 cells)		545	40.08	17.36	33.13	16.45	40.08	17.36	33.13	16.45
		550	40.28	17.44	33.33	16.50	40.28	17.44	33.33	16.50
		555	40.48	17.51	33.54	16.55	40.48	17.51	33.54	16.55
		560	40.68	17.59	33.74	16.60	40.68	17.59	33.74	16.60
QM210RTHCDH- xxx-48 (xxx=485- 500, in steps of 5, 96 cells)		485	35.22	17.55	29.75	16.30	35.22	17.55	29.75	16.30
		490	35.44	17.63	29.96	16.36	35.44	17.63	29.96	16.36
		495	35.65	17.72	30.16	16.41	35.65	17.72	30.16	16.41
		500	35.84	17.81	30.36	16.47	35.84	17.81	30.36	16.47
QM210VTHCD- xxx-78 (xxx=801,808,814, 808, 156 cells)		801	57.98	17.73	48.67	16.50	57.98	17.73	48.62	16.47
		808	58.15	17.78	48.84	16.56	58.15	17.78	48.82	16.55
		814	58.35	17.84	49.01	16.62	58.35	17.84	49.02	16.61

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	818	58.52	17.91	49.18	16.68	58.52	17.91	49.18	16.64
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- Alternative materials and combinations in below table. The relevant tests were performed in test report No. 492013492.001-012 from TÜV NORD (Hangzhou) Co., Ltd.

Reference test report no.:	492013492.001-012
Verified materials:	- Front cover: - AR coated tempered glass from Flat Glass Group co., Ltd. - AR coated tempered glass from Hangzhou Bomei Culture and Art Co., Ltd. - AR coated tempered glass from Xinyi PV products (Anhui) Holdings LTD. - AR coated tempered glass from CTIEC (Zhangzhou) New Energy Co., Ltd. - AR coated tempered glass from XINFUXING GLASS. - AR coated tempered glass from Zhejiang Ninghai Kibing New Energy Management Co., Ltd. - AR coated tempered glass from CSG HOLDING CO., LTD. - Backside cover: - Semi tempered glass from Flat Glass Group co., Ltd. - Semi tempered glass from Hangzhou Bomei Culture and Art Co., Ltd. - Semi tempered glass from Xinyi PV products (Anhui) Holdings LTD. - Semi tempered glass from CTIEC (Zhangzhou) New Energy Co., Ltd. - Semi tempered glass from XINFUXING GLASS. - Semi tempered glass from Zhejiang Ninghai Kibing New Energy Management Co., Ltd. - Semi tempered glass from CSG HOLDING CO., LTD. - Encapsulation material: - F406PS (front side) & EP304 (rear side) from Hangzhou FIRST Applied Materials Co., Ltd. - EP304 (front side) & F406PS (rear side) from Hangzhou FIRST Applied Materials Co., Ltd. - P507 (front side) & S201MT1 (rear side) from Shanghai HIUV New Materials Co., Ltd. - WT22H (front side) & T11 (rear side) from Cybird Technologies Inc. - ISARD 3180 (front side) & ISARD 2180 (rear side) from CROWN ADVANCED MATERIAL CO., LTD. - CO-556 (front side) & 15296P (rear side) from Changzhou Sveck PV New Material Co., Ltd. 05-JA21TS1 (front side) & 08-JA21G (rear side) from Shanghai JA Solar Technology Co., Ltd. - S102 (front side) & EV1050G2 (rear side) from Jiangsu Lushan New Materials Co., Ltd. - PO8110e (front side) & EVA9110T (rear side) from Zhejiang Sinopont Technology Co., Ltd. - Solar cell: - M182GBTTCONBP from Tongwei Solar Energy Co., Ltd. - M183AGBTCONBP from Tongwei Solar Energy Co., Ltd. - CZJT-182M- 16D1 from Marketing Center of JieTai Solar. - M18316BTP50 from Solarspace Technology Co., Ltd. - M21018BTP50 from Solarspace Technology Co., Ltd. - M210R16BTP10 from Solarspace Technology Co., Ltd. - DMND16B182R from SICHUAN DMEGC NEW ENERGY TECHNOLOGY CO., LTD. - G10L-A-16BB from Sichuan Yingfa Ruineng Technology Co., Ltd. - N-Type Bifacial-TOPCon M10 16BB from HY SOLAR Co.,Ltd. - G12P-A-18BB from Sichuan Yingfa Ruineng Technology Co., Ltd.

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182.2x210 18BB 184F-186F from HY SOLAR Co.,Ltd.

- Cell connector:
 Φ0.26mm, Sn60Pb40 from Suzhou YourBest New-Type Materials Co., Ltd.
 Φ0.25mm, Sn60Pb40 from TONYSHARE (Suzhou) Electronic Material Technology Co., Ltd.
 Φ0.25mm, Sn60Pb40 from JA (Wuxi) PV Technology co., Ltd.
 Φ0.25mm, Sn60Pb40 from Suzhou Bonide Photovoltaic Technology Co., Ltd.
 Φ0.25mm, Sn60Pb40 from SHENZHEN HUAGUANGDA TECHNOLOGY CO.,LTD.
- String connector:
 0.35x4.0mm, 0.35x6.0mm, Sn60Pb40 from Suzhou YourBest New-Type Materials Co., Ltd.
 0.4x4.0mm, Sn60Pb40 from Wuxi Sveck Technology Co., Ltd.
 0.3x4.0mm, 0.3x6.0mm, Sn60Pb40 from TONYSHARE (Suzhou) Electronic Material Technology Co., Ltd.
 0.3x4.0mm, 0.3x6.0mm, Sn60Pb40 from JA (Wuxi) PV Technology co., Ltd.
 0.3x4.0mm, 0.3x6.0mm, Sn60Pb40 from Suzhou Bonide Photovoltaic Technology Co., Ltd.
 0.3x4.0mm, 0.3x6.0mm, Sn60Pb40 from SHENZHEN HUAGUANGDA TECHNOLOGY CO.,LTD.
- Frame:
 6005-T6 from Yonz Technology Co., LTD..
 6005-T6 from Jiangyin Xuchu Technology Co.,Ltd.
 6005-T6 from Guangxi Qiming New Energy Technology Co., Ltd.
 6005-T6 from Changzhou Kaihong Aluminum Industry Co., Ltd.
 Polymer Composite material from Zhejiang DeYiLong Technology Co., Ltd.
 Polymer Composite material from Zhejiang Hongsheng New Material Technology Group Co., Ltd.
 Polymer Composite material from Jiangsu Worldlight New Material Co., Ltd.
 S550GD from CSI Solar Co., Ltd.
- Adhesive (frame):
 HT-8258,white,from Jiangsu Tianchen New Materials Co., Ltd.
 HT906Z,white,from Guangzhou Huitian New Material Co., Ltd.
 JD-615,white and black,from Jiangmen Jia Di New Materials Co., Ltd.
 RS 3300,white and black,from Zhenjiang RAYBOND New Material Technology Co Ltd.
 RS 3316,white and black,from Zhenjiang RAYBOND New Material Technology Co Ltd.
- Fluxing agent:
 AATF9800-MBB from Shenzhen Tongfang Electronic New Material Co.,Ltd.
 8000T20 from SHENZHEN EMBRACE GLORY ELECTRONICS MATERIAL CO., LTD.
- Fixing tape:
 F1510 from Suzhou temosun Photovoltaic Matrial Co;Ltd.
- Junction box:
 TL-BOX216x from Jiangsu Tonglin Electric Co., Ltd.
 PV-JB12x from SUZHOU UKT NEW TECHNOLOGY CO., LTD.
 3Qxy from QC Solar (Suzhou) Corporation.
 Z8-abcd from Zerun Co., Ltd.
 BET2101-abc from Suzhou Bright Photovoltaic Electronic Technology Co.,Ltd.
 PV-HY06 from Ningbo huayu Photovoltaic Technology Co., Ltd.
 PV-ZH011C-5xyz from Zhejiang Zhonghuan Sunter PV Technology Co., Ltd.

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BET2401-abc from Suzhou Bright Photovoltaic Electronic Technology Co., Ltd.
MH2z from Zhejiang Minghe New Energy Technology Co., Ltd.
PV-CY1808x from Zhejiang Chuangyuan Photovoltaic Technology Co., Ltd.

- Updating the manufacturer information for Frame parts from Yongzhen Technology (Suzhou) Co., Ltd. to Yongzhen Technology Co., Ltd. please refer to declaration from client in Appendix E for more details. No additional testing is considered necessary.

- Updating the manufacturer information for Adhesive of Junction box and Potting material from Shanghai Huitian New Material Co., Ltd. to Hubei Huitian New Material Co., Ltd. please refer to declaration from client in Appendix E for more details. No additional testing is considered necessary.

- Updating the product name for Adhesive of Junction box from CV-709 to Sikasil® AS-165 and the product name for Potting material from CV-315 to Sikasil® AS-747 SL, please refer to declaration from client in Appendix E for more details. No additional testing is considered necessary.

- Updating the manufacturer information for Adhesive of Junction box and Potting material from Suzhou Tonsan Adhesive Ltd. to H.B. Fuller (Suzhou) Advanced Material Co., Ltd., please refer to declaration from client in Appendix E for more details. No additional testing is considered necessary.

This report have to be read in conjunction with report test report No. 492013492.001-012 from TÜV NORD (Hangzhou) Co., Ltd. and Constructional Data Form (CDF) No. CN26Q2T9 001.

This test report includes a history of reporting and certification, photo documentation and declaration in the appendix.

Throughout this report a point is used as the decimal separator.

Summary of test locations:

All the tests were performed 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.

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6 Produktdetails <i>Product details</i>	Module type designation New model types: Max. System Voltage: Up to 1500 VDC (Voc at STC): With 1/2 cut of mono c-Si cells (Under STC): QM182NTHCD-xxx-78 (xxx=610-650, in steps of 5, 156 cells) QM182NTHCD-xxx-72 (xxx=565-595, in steps of 5, 144 cells) QM182NTHCD-xxx-60 (xxx=470-500, in steps of 5, 120 cells) QM182NTHCDH-xxx-54 (xxx=425-450, in steps of 5, 108 cells) QM182NTHCDQ-xxx-78 (xxx=615-650, in steps of 5, 156 cells) QM182NTHCDZ-xxx-78 (xxx=615-650, in steps of 5, 156 cells) QM182NTHCDQ-xxx-72 (xxx=570-595, in steps of 5, 144 cells) QM182NTHCDZ-xxx-72 (xxx=570-595, in steps of 5, 144 cells) QM182NTHCDQ-xxx-60 (xxx=475-500, in steps of 5, 120 cells) QM182NTHCDZ-xxx-60 (xxx=475-500, in steps of 5, 120 cells) QM182NTHCDQH-xxx-54 (xxx=425-450, in steps of 5, 108 cells) QM182NTHCDZH-xxx-54 (xxx=425-450, in steps of 5, 108 cells) QM188RTHCDH-xxx-54 (xxx=435-450, in steps of 5, 108 cells) QM182NTHCDW-xxx-14 (xxx=105-110, in steps of 5, 28 cells) QM182NTHCDW-xxx-8 (xxx=60, 16 cells) QM182NTHCDW-xxx-4 (xxx=30, 8 cells) QM182NTHCDCr-xxx-78 (xxx=350-375, in steps of 5, 156 cells) QM182NTHCDCo-xxx-78 (xxx=410-435, in steps of 5, 156 cells) QM182NTHCDCy-xxx-78 (xxx=470-490, in steps of 5, 156 cells) QM182NTHCDCg-xxx-78 (xxx=480-500, in steps of 5, 156 cells) QM182NTHCDCb-xxx-78 (xxx=540-560, in steps of 5, 156 cells) QM182NTHCDCi-xxx-78 (xxx=420-445, in steps of 5, 156 cells) QM182NTHCDCp-xxx-78 (xxx=465-490, in steps of 5, 156 cells) QM182NTHCDCr-xxx-72 (xxx=325-345, in steps of 5, 144 cells) QM182NTHCDCo-xxx-72 (xxx=380-400, in steps of 5, 144 cells) QM182NTHCDCy-xxx-72 (xxx=435-450, in steps of 5, 144 cells) QM182NTHCDCg-xxx-72 (xxx=445-460, in steps of 5, 144 cells) QM182NTHCDCb-xxx-72 (xxx=500-515, in steps of 5, 144 cells) QM182NTHCDCi-xxx-72 (xxx=390-410, in steps of 5, 144 cells) QM182NTHCDCp-xxx-72 (xxx=430-450, in steps of 5, 144 cells) QM182NTHCDCr-xxx-60 (xxx=270-285, in steps of 5, 120 cells) QM182NTHCDCo-xxx-60 (xxx=315-335, in steps of 5, 120 cells) QM182NTHCDCy-xxx-60 (xxx=360-375, in steps of 5, 120 cells) QM182NTHCDCg-xxx-60 (xxx=370-385, in steps of 5, 120 cells) QM182NTHCDCb-xxx-60 (xxx=415-430, in steps of 5, 120 cells) QM182NTHCDCi-xxx-60 (xxx=325-340, in steps of 5, 120 cells) QM182NTHCDCp-xxx-60 (xxx=360-375, in steps of 5, 120 cells) QM182NTHCDCr-xxx-54 (xxx=245-260, in steps of 5, 108 cells) QM182NTHCDCo-xxx-54 (xxx=285-300, in steps of 5, 108 cells) QM182NTHCDCy-xxx-54 (xxx=325-340, in steps of 5, 108 cells)
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QM182NTHCDCg-xxx-54 (xxx=335-345, in steps of 5, 108 cells)
QM182NTHCDCb-xxx-54 (xxx=375-385, in steps of 5, 108 cells)
QM182NTHCDCi-xxx-54 (xxx=290-305, in steps of 5, 108 cells)
QM182NTHCDCp-xxx-54 (xxx=320-340, in steps of 5, 108 cells)

QM210NTHCD-xxx-66 (xxx=695-725, in steps of 5, 132 cells)
QM210NTHCD-xxx-60 (xxx=630-655, in steps of 5, 120 cells)

QM210RTHCD-xxx-66 (xxx=605-630, in steps of 5, 132 cells)
QM210RTHCD-xxx-60 (xxx=550-570, in steps of 5, 120 cells)
QM210RTHCDH-xxx-54 (xxx=495-510, in steps of 5, 108 cells)
QM210RTHCDH-xxx-48 (xxx=440-455, in steps of 5, 96 cells)

QM210VTHCD-xxx-78 (xxx=725-740, in steps of 5, 156 cells)

With 1/2 cut of mono c-Si cells (Under BNPI):

QM182NTHCD-xxx-78 (xxx=675-715, in steps of 5, 156 cells)
QM182NTHCD-xxx-72 (xxx=625-655, in steps of 5, 144 cells)
QM182NTHCD-xxx-60 (xxx=520-550, in steps of 5, 120 cells)
QM182NTHCDH-xxx-54 (xxx=470-495, in steps of 5, 108 cells)
QM182NTHCDQ-xxx-78 (xxx=680-715, in steps of 5, 156 cells)
QM182NTHCDZ-xxx-78 (xxx=680-715, in steps of 5, 156 cells)
QM182NTHCDQ-xxx-72 (xxx=630-655, in steps of 5, 144 cells)
QM182NTHCDZ-xxx-72 (xxx=630-655, in steps of 5, 144 cells)
QM182NTHCDQ-xxx-60 (xxx=525-550, in steps of 5, 120 cells)
QM182NTHCDZ-xxx-60 (xxx=525-550, in steps of 5, 120 cells)
QM182NTHCDQH-xxx-54 (xxx=470-495, in steps of 5, 108 cells)
QM182NTHCDZH-xxx-54 (xxx=470-495, in steps of 5, 108 cells)
QM188RTHCDH-xxx-54 (xxx=481,486,492,497, 108 cells)
QM182NTHCDW-xxx-14 (xxx=115-120, in steps of 5, 28 cells)
QM182NTHCDW-xxx-8 (xxx=68, 16 cells)
QM182NTHCDW-xxx-4 (xxx=35, 8 cells)

QM182NTHCDCr-xxx-78 (xxx=390-415, in steps of 5, 156 cells)
QM182NTHCDCo-xxx-78 (xxx=460-485, in steps of 5, 156 cells)
QM182NTHCDCy-xxx-78 (xxx=520-540, in steps of 5, 156 cells)
QM182NTHCDCg-xxx-78 (xxx=530-550, in steps of 5, 156 cells)
QM182NTHCDCb-xxx-78 (xxx=590-610, in steps of 5, 156 cells)
QM182NTHCDCi-xxx-78 (xxx=470-495, in steps of 5, 156 cells)
QM182NTHCDCp-xxx-78 (xxx=515-540, in steps of 5, 156 cells)
QM182NTHCDCr-xxx-72 (xxx=360-380, in steps of 5, 144 cells)
QM182NTHCDCo-xxx-72 (xxx=425-445, in steps of 5, 144 cells)
QM182NTHCDCy-xxx-72 (xxx=475-490, in steps of 5, 144 cells)
QM182NTHCDCg-xxx-72 (xxx=485-500, in steps of 5, 144 cells)
QM182NTHCDCb-xxx-72 (xxx=545-560, in steps of 5, 144 cells)
QM182NTHCDCi-xxx-72 (xxx=435-455, in steps of 5, 144 cells)

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		QM182NTHCDCp-xxx-72 (xxx=470-490, in steps of 5, 144 cells) QM182NTHCDCr-xxx-60 (xxx=300-315, in steps of 5, 120 cells) QM182NTHCDCo-xxx-60 (xxx=355-375, in steps of 5, 120 cells) QM182NTHCDCy-xxx-60 (xxx=395-410, in steps of 5, 120 cells) QM182NTHCDCg-xxx-60 (xxx=405-420, in steps of 5, 120 cells) QM182NTHCDCb-xxx-60 (xxx=455-470, in steps of 5, 120 cells) QM182NTHCDCi-xxx-60 (xxx=365-380, in steps of 5, 120 cells) QM182NTHCDCp-xxx-60 (xxx=395-410, in steps of 5, 120 cells) QM182NTHCDCr-xxx-54 (xxx=275-290, in steps of 5, 108 cells) QM182NTHCDCo-xxx-54 (xxx=315-330, in steps of 5, 108 cells) QM182NTHCDCy-xxx-54 (xxx=360-375, in steps of 5, 108 cells) QM182NTHCDCg-xxx-54 (xxx=370-380, in steps of 5, 108 cells) QM182NTHCDCb-xxx-54 (xxx=410-420, in steps of 5, 108 cells) QM182NTHCDCi-xxx-54 (xxx=320-335, in steps of 5, 108 cells) QM182NTHCDCp-xxx-54 (xxx=355-375, in steps of 5, 108 cells) QM210NTHCD-xxx-66 (xxx=770-800, in steps of 5, 132 cells) QM210NTHCD-xxx-60 (xxx=690-715, in steps of 5, 120 cells) QM210RTHCD-xxx-66 (xxx=670-695, in steps of 5, 132 cells) QM210RTHCD-xxx-60 (xxx=605-625, in steps of 5, 120 cells) QM210RTHCDH-xxx-54 (xxx=545-560, in steps of 5, 108 cells) QM210RTHCDH-xxx48 (xxx=485-500, in steps of 5, 96 cells) QM210VTHCD-xxx-78 (xxx=801,808,814,818, 156 cells) xxx represents output power in Wp Refer to Constructional Data Form (CDF) no. CN26Q2T9 001 for electrical ratings
7	Verwendete Materialien <i>Used materials</i>	See Constructional Data Form (CDF) no. CN26Q2T9 001
8	Sonstiges <i>Other</i>	N/A
9	Prüfmusterbereitstellung <i>Test sample obtaining</i>	☒ Sending by customer ☐ Sampling by TÜV Rheinland Group ☐ Others: -

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10	Anschrift(en) der Produktionsstätte(n) <i>Address(es) of the manufacturing site(s)</i>		
		Name / Description:	Shenzhen Qiming Photovoltaic Technology Co., Ltd.
		Street:	Building 3, 4, 6, 8, 201 on the first and second floors of Section A of Building 10, No. 2-1, Xiguangyue Third Road, Loucun Community, Xinhua Street, Guangming District
		Postcode / City, Country:	Shenzhen 518107 Guangdong, P.R.China
		Type of production:	Crystalline PV-module
		Inspection report No.and date	CN26FEHP 001 / 14/01/2026

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Prüfgrundlagen
Test specification

11	Test specification		
	IEC 61215-1:2021; EN IEC 61215-1:2021: Terrestrial photovoltaic (PV) modules – Design qualification and type approval – Part 1: Test requirements	applicable	—
	IEC 61215-1-1:2021; EN IEC 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	applicable	
	IEC 61215-2:2021; EN IEC 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	applicable	
	IEC 61730-2:2023; EN IEC 61730-2:2018: Photovoltaic (PV) module safety qualification – Part 2: Requirements for testing	applicable	

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Prüfmusterliste
List of test samples

12	☐ 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.				
	Model type	Sample no.	Serial No.	Test seq.	Remarks / constructional characteristics (e.g. cell, backsheet, frame type)
	QM210RTHC D-630-66	1	CHG01C2 005251200 0026	A	Front cover: 2.0mm AR coating tempered glass from CTIEC (Zhangzhou) New Energy Co., Ltd. Rear cover: 2.0mm Semi tempered glass from CTIEC (Zhangzhou) New Energy Co., Ltd. Encapsulation material: EP304 (between front cover and solar cell) & F406PS (between solar cell and backside cover) from Hangzhou FIRST Applied Materials Co., Ltd Frame: 33mm 6005-T6 from Guangxi Qiming New Energy Technology Co., Ltd. Adhesive of frame: HT906Z from Guangzhou Huitian New Material Co., Ltd. Solar Cell: M210R16BTP10 from Solarspace Technology Co., Ltd. Cell connectors: $\varnothing$ 0.25mm, Sn60%Pb40% from Suzhou Bonide Photovoltaic Technology Co., Ltd. String connectors: 0.3×4.0mm, 0.3×6.0mm, Sn60%Pb40% from Suzhou Bonide Photovoltaic Technology Co., Ltd. Fluxing agent: 8000T20 from SHENZHEN EMBRACE GLORY ELECTRONICS MATERIAL CO., LTD. Fixing Tape: F1510 from Suzhou temosun Photovoltaic Matrial Co;Ltd Reflective Film : BC81 from Heyu Technology Co., Ltd Junction box: Z8-abcd from Zerun Co., Ltd. PV cable: 62930 131 1x4,0mm² from Zerun Co., Ltd. Connector: Z4S-abcde from Zerun Co., Ltd. Bypass diode: 30SQ045 from Zerun Co., Ltd. Adhesive of J-Box: JD-615 from Jiangmen Jia Di New Materials Co.,Ltd. Potting material: JD-130 from Jiangmen Jia Di New Materials Co.,Ltd.

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

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II	IEC 61215-1:2021 and IEC 61730-1:2023 – Requirements for design construction
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13	Classification, application and intended use (Clause 5 of IEC 61730-1:2023)
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13.1	General (Clause 5.1 of IEC 61730-1:2023)
	The module has been evaluated for the following Class (IEC 61140): ☐ Class 0 ☒ Class II ☐ Class III —

13.2	Rating categories and special applications (Clause 5.2 of IEC 61730-1:2023)
	Modules are intended for use in the temperature range -40°C - +70°C (T_{98 max}). —
	PV modules are installed in the following special applications: —
	Building attached PV (BAPV) ☐ yes ☒ no —
	Building integrated PV (BIPV) ☐ yes ☒ no —
	Applications in areas where snow and / or wind load exceeding loads as tested in IEC 61730-2 ☐ yes ☒ no —
	Other (please specify) ☐ yes, as follows: ☒ no —

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14	Requirements for design and construction (Clause 6 of IEC 61730-1:2023 and Clause 5 of IEC 61215-1:2021)		
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14.1	General (Clause 6.1 of IEC 61730-1:2023)		
	Product shipped from the factory as	☒ completely assembled ☐ subassemblies	—
	Incorporation of a PV module into the final assembly does not require any alteration of the PV module from its originally evaluated form.	PV modules are completely assembled.	P
	All methods of PV module mounting and wiring that are specified in the installation instructions are evaluated for compliance with the IEC 61730 series.	Compliance checked by IEC/EN 61730-2 tests listed in test report No. 492013492.001-012.	P
	Equipotential bonding continuity is not interrupted by installation.	Confirmed by test MST 13, and refer to test report No. 492013492.001-012	P
	Any adjustable or movable structural part is provided with a locking device.	No such parts.	N/A
	PV modules have no accessible burrs, sharp edges, or sharp points.	Compliance checked by tests MST 01 and MST 06, and refer to test report No. 492013492.001-012	P
	Parts are prevented from loosening or turning.	Compliance checked by tests MST 01, and refer to test report No. 492013492.001-012	P
	All electrical data to be reported in the marking or in the documentation accompanying a PV module are given for standard test conditions (1000 W/m ² , 25 °C, spectral irradiance equal to AM1.5 according to IEC TS 61836). For bifacial PV modules, all electrical data are shown as relative to STC, BNPI and aBSI on the front side of the module, plus bifaciality coefficients at STC according to IEC TS 60904-1-2 and IEC 61215-1:2021.	Marked on type label and available in installation manual / data sheet	P

14.2	Marking and documentation (Clause 6.2 of IEC 61730-1:2023 and Clause 5 of IEC 61215-1:2021)		
14.2.1	Marking (Clause 6.2.1 of IEC 61730-1:2023)		
	Instructions related to safety are in an official language of the country where the equipment is to be installed.	Marking and documentation are written in English	P
14.2.1.1	General / Name plate (Clause 6.2.2.1 of IEC 61730-1:2023 and Clause 5.1 of IEC 61215-1:2021)		
	Each PV module includes the following clear and indelible markings:	Compliance checked by tests MST 01 and MST 05, and refer to test report No. 492013492.001-012	—
	a) Name, registered trade name, or registered trade mark of manufacturer	Marked on type label	P
	b) Type or model number designation	Marked on type label	P

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	c) Serial number (unless marked on other part of product)	Additional label with barcode	P
	d) Date and place of manufacture; alternatively serial number assuring traceability of date and place of manufacture	Traceable from serial number (checked during factory inspection)	P
	e) Maximum system voltage or " V_{sys} "	Marked on type label	P
	f) Class of protection against electrical shock, in accordance with Clause 5 of IEC 61730-1:2023	Marked on type label	P
	g) Voltage at open-circuit or " V_{oc} " including manufacturing tolerances	Marked on type label	P
	h) Current at short-circuit or " I_{sc} " including manufacturing tolerances	Marked on type label	P
	i) Maximum power or " P_{max} " including manufacturing tolerances	Marked on type label	P
	j) For bifacial modules, a clear indication which side is designed as the front side, or if both are designed for prolonged exposure to direct sunlight ($> 300 \text{ W/m}^2$).	Marked on type label	P
	k) Short-circuit current bifaciality coefficient ϕ_{Isc} Open-circuit voltage bifaciality coefficient ϕ_{Voc} Maximum power bifaciality coefficient ϕ_{Pmax}	Marked on type label	P
	l) For flexible modules, the minimum radius of curvature	No flexible module	N/A
	m) Positive ("+" or downward) and negative ("- " or upward) design load ratings in pascal (Pa) excluding the test load safety factor, as verified in the static mechanical load test (MST 34)	Marked on type label	P
	n) Maximum overcurrent protection rating	Maximum series fuse rating indicated	P
	o) A module temperature rating of $70 \text{ }^{\circ}\text{C}$, (or if tested to IEC TS 63126 Level 1 or Level 2, $80 \text{ }^{\circ}\text{C}$ or $90 \text{ }^{\circ}\text{C}$)	Marked on type label	P
	p) Connector manufacturer and model used; refer to manual for designated mating connectors	Marked on type label	P
	q) A link (website or QR code) to required documentation if a paper copy of the documentation required is not included with the module	Marked on type label	P
	All electrical data are shown at standard test conditions (STC) (1000 W/m^2 , $(25 \pm 2) \text{ }^{\circ}\text{C}$, AM 1.5 according to IEC 60904-3).	Marked on type label	P
	International symbols are used where applicable.	Marked on type label	P
	PV connectors or wiring are marked with a symbol or/and hint „Do not disconnect under load“. Symbol or/and warning notice is imprinted or labelled close to connector.	Symbol, e.g.  / warning notice indicated on connectors	P
	PV connectors are clearly marked indicating the terminal polarity.	"+" and "-" indicated on terminal	P

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	For Class II and Class 0 PV modules, the  (IEC 60417-6042: Caution, risk of electric shock) symbol is applied near the PV module electrical connection means.	Electrical hazard symbol indicated on type label	P
	PV modules are marked to indicate the class.	☒ class II:  ☐ class III:  ☐ class 0: no symbol	P
	PV modules provided with a functional earth terminal is provided with a symbol according to IEC 60417-5018:2011-07.	No functional earthing.	N/A
	PV modules provided with terminals for field wiring rated only for use with copper wire are marked, at or adjacent to the terminals, with the statement "Use copper wire only", "Cu only", or the equivalent.	PV modules provided with terminals for field wiring rated for use with all types of wiring material, do not need to be marked.	N/A
	PV modules provided with terminals for field wiring rated only for use with a different specific wiring material are marked with a similar statement referring to the rated material.	PV modules provided with terminals for field wiring rated for use with all types of wiring material, do not need to be marked.	N/A
14.2.1.2	Symbols (Clause 6.2.2.2 of IEC 61730-1:2023)		
14.2.1.2.1	Equipotential bonding (Clause 6.2.2.2.1 of IEC 61730-1:2023)		
	A wiring terminal or bonding location for equipotential bonding is identified with:		P
	No other terminal or location is identified in this manner.	Mounting hole may not be used for bonding.	P
14.2.1.2.2	Functional earthing (Clause 6.2.2.2.2 of IEC 61730-1:2023)		
	Field installed functional earthing conductor is identified with the symbol:	 No functional earthing.	N/A
14.2.2	Documentation (Clause 6.2.3 of IEC 61730-1:2023 and Clause 5.2 of IEC 61215-1:2021)		
14.2.2.1	General (Clause 6.2.3.1 of IEC 61730-1:2023 and Clause 5.2 of IEC 61215-1:2021)		
	Documentation describing electrical and mechanical installation is provided.	Available in installation manual	P
	The documentation states the class for protection against electrical shock under which the PV module was qualified and any specific limitations required for that class.	Available in installation manual	P
	The documentation assures that installers and operators receive appropriate and sufficient instructions for safe installation, use and maintenance of the PV modules that it accompanies.	Available in installation manual	—
	The documentation is supplied in at least one of the official languages of the country where the PV modules will be installed.	The documentation is written in English	P

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	International symbols are used where applicable.	Available in installation manual	P
	Assembly instructions are provided with a product shipped in subassemblies and are detailed and adequate to the degree required to facilitate complete and safe assembly of the product.	PV modules are completely assembled.	N/A
	Documentation is provided in paper form in each shipping unit or as an electronic link.	In paper form / As an electronic link	—
	- The web address is marked on the device or provided in an information sheet enclosed with each shipping unit.	Available on marking label / package	P
	- The web address is in the form of a Uniform Resource Locator (URL – http://www.solavita.com), or a Quick Response Code (QRcode).	The web address / The QR code is provided	P
	- The web address link takes the user to an internet page containing the required information or a direct link to the required information.	Available on web address	P
	- The file is in a file format that is commonly used and is downloadable.	Available on web address	P
	The needs for maintaining and supporting information during the life cycle of the PV modules is taken into account when planning the preparation of information for use as in IEC/IEEE 82079-1.	Verified during documentation check and factory inspection	P
	The documentation contains the following information:	—	—
	- Name, registered trade name, or registered trademark of manufacturer	Available in installation manual / data sheet	P
	- Type or model number designation	Available in installation manual / data sheet	P
	- Maximum system voltage or " V_{sys} "	Available in installation manual / data sheet	P
	- Class for protection against electrical shock, in accordance with Clause 5 of IEC 61730-1:2023	Available in installation manual / data sheet	P
	- Voltage at open-circuit or " V_{oc} " including manufacturing tolerances	Available in installation manual / data sheet	P
	- Current at short-circuit or " I_{sc} " including manufacturing tolerances	Available in installation manual / data sheet	P
	- Maximum power or " P_{max} " including manufacturing tolerances	Available in installation manual / data sheet	P
	- For bifacial modules, a clear indication which side is designed as the front side, or if both are designed for prolonged exposure to direct sunlight ($> 300 \text{ W/m}^2$).	Available in installation manual / data sheet	P
	- Short-circuit current bifaciality coefficient ϕ_{isc} - Open-circuit voltage bifaciality coefficient ϕ_{voc} - Maximum power bifaciality coefficient ϕ_{pmax}	Available in installation manual / data sheet	P
	- Minimum radius of curvature	No flexible modules	N/A

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	- A module temperature rating of 70 °C, (or if tested to IEC TS 63126 Level 1 or Level 2, 80 °C or 90°C)	Available in installation manual / data sheet	P
	- Connector manufacturer and model used; refer to manual for designated mating connectors	Available in installation manual / data sheet	P
	- A link (website or QR code) to required documentation if a paper copy of the documentation required is not included with the module	Available in installation manual / data sheet	P
	- Maximum overcurrent protection rating (compliance verified by reverse current overload test (MST 26))	Available in installation manual / data sheet	P
	- Recommended maximum series / parallel PV module configurations	Available in installation manual / data sheet	P
	- Temperature coefficient for maximum output power	Available in installation manual / data sheet	P
	- Temperature coefficient for voltage at open-circuit	Available in installation manual / data sheet	P
	- Temperature coefficient for short-circuit current	Available in installation manual / data sheet	P
	- All electrical data are shown at standard test conditions (1000 W/m ² , (25 ± 2) °C, AM 1.5 according to IEC 60904-3).	Available in installation manual / data sheet	P
	- Performance at low irradiance (MQT 07) is specified.	Available in installation manual / data sheet	P
	Detailed wiring method for electrical installation is included in the documentation, containing:	—	—
	- minimum cable diameters for PV modules intended for field wiring	Available in installation manual	P
	- any limitations on wiring methods and wire management that apply to the PV module junction box	Available in installation manual	P
	- size, type, material, and temperature rating of the conductors to be used	Available in installation manual	P
	- type of terminals for field wiring	Available in installation manual	P
	- specific PV connector model / types and manufacturer to which the PV module connectors can be mated	Available in installation manual	P
	- bonding to be used (if applicable) including all provided or specified hardware	Available in installation manual	P
	- type and ratings of bypass diode to be used (if applicable) as well as the installation instructions for those diodes (if applicable)	Available in installation manual	P
14.2.2.2	Suitable environmental and mounting conditions (Clause 6.2.3.2 of IEC 61730-1:2023 and Clause 5.2 of IEC 61215-1:2021)		
	The documentation states the environmental and mounting conditions for which the module has been qualified, including:		—
	The maximum rated altitude the PV module is designed for	≤ 2000 m above sea level Available in installation manual	P

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	Indication of the negative (upward) and positive (downward) design load ratings during the static mechanical load test according to MST 34	Available in installation manual / data sheet	P
	For bifacial PV modules, the exposure side meets the following requirements:	—	—
	Clear indication of which side(s) of the module have been tested for the front side exposure	Available in installation manual / data sheet	P
	The back side is restricted for use with indirect or limited direct sunlight (less than 300 W/m ²) unless tested as a front side	Available in installation manual / data sheet	P
	Each side meets the requirements for front side if both sides of a module are intended for use with prolonged exposure to direct sunlight (>300 W/m ²)	Available in installation manual / data sheet	P
	Temperature range from a lower limit of environmental temperature of -40 °C to the upper limit set by a 98 th percentile module operating temperature of 70 °C (80 °C or 90 °C if tested to Level 1 or Level 2 conditions as described in IEC TS 63126)	Available in installation manual / data sheet	P
	Guidance on geographic areas, mounting conditions and system design and installation factors where the anticipated 98 th percentile module operating temperature will be greater than 70 °C (or 80°C or 90°C if tested to Level 1 or Level 2 conditions)	Available in installation manual / data sheet	P
	Factors that can increase voltage or current beyond the STC values are given in the documentation, including the following or equivalent statements:	—	—
	- "A photovoltaic module is likely to experience conditions that produce higher current and/or voltage than reported at standard test conditions. Factors to consider include module temperature and front side irradiance (and, for bifacial modules, ground or roof albedo, row spacing, and installation height). Accordingly, the values of V_{oc} and I_{sc} (or for bifacial modules, $I_{sc-aBSI}$) marked on this PV module should be multiplied by a factor of 1,25 when determining voltage and current ratings for components connected to the PV output."	Available in installation manual / data sheet	P
	- "The safety factor of 1,25 given for the minimum voltage rating of the components in the example statement above may be modified during the design of a system according to the minimum temperature of the location of the installation and the temperature coefficient for V_{oc} . The safety factor of 1,25 given for conductor current ratings values for I_{sc} (or for bifacial modules, $I_{sc-aBSI}$) may be adjusted based on the maximum values of irradiance incident on the front side of the module (and the rear side for bifacial modules). To this purpose, a full simulation for the specific location and module orientation (and for bifacial modules, ground albedo, row spacing and installation height) is required. Further guidance for the choice of a safety factor other than 1,25 is given in IEC 62548."	Available in installation manual / data sheet	P
	The documentation includes a statement advising that artificially concentrated sunlight producing a PV module's	Available in installation manual	P

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	current above the value reported on the nameplate shall not be directed onto the front side or the back side of the PV module.		
	The documentation reports if the PV modules were evaluated according to the following standards:	—	—
	- IEC 61701: Salt mist corrosion testing	Test method used:N/A	N/A
	- IEC 62716: Ammonia corrosion testing	N/A	N/A
	- IEC 62109-3: Safety of power converters for use in photovoltaic power systems – Part 3: particular requirements for electronic devices in combination with photovoltaic elements	MIE Type: ☐ A ☐ B	N/A
	- IEC TS 63126: Guidelines for qualifying PV modules, components and materials for operation at high temperatures	Temperature Level: ☐ 1 ☐ 2	N/A
14.2.2.3	Mounting (Clause 6.2.3.3 of IEC 61730-1:2023 and Clause 5.2.2 of IEC 61215-1:2021)		
	The documentation includes adequate information and instructions for each mounting methods listed in the manufacturer's mounting instructions as well as:		—
	- A statement indicating the minimum mechanical means for securing the PV module evaluated during the mechanical load test (MST 34 of IEC 61730-2:2023) and the conformity to the mechanical load requirements of the series IEC 61215	Available in installation manual Evaluated with Static mechanical load test (MST 34) and Module breakage test (MST 32), and refer to test report No. 492013492.001-012	P
	- Limitations to the mounting situation (e.g. slope, orientation, mounting means, cooling, specific spacing and any other condition that can influence the safety of the PV module installation)	Available in installation manual	P
	- Type of adhesive and the allowable substrates if adhesives are used for mounting (i.e. flexible modules)	Available in installation manual	P
	- The manufacturer and unique part number of the adhesive, the required surface preparation, adhesive application process, and curing condition if adhesives are specified for use in the field to provide mechanical securement to specific roof coverings or mounting systems	Available in installation manual	P
14.2.2.4	Connectors/wiring (Clause 6.2.3.4 of IEC 61730-1:2023)		
	The documentation includes a detailed description of the following information related to the connectors and wiring method:		—
	- Minimum cable diameters, rated voltage, current and temperature of cables for PV modules intended for field wiring and compliance with IEC 62930, type 131 or type 133; or EN 50618	Available in installation manual / data sheet	P
	- Limitations on wiring methods and wire management that apply to the junction box for the PV module	Available in installation manual / data sheet	P
	- Statement that wiring to interconnect modules shall be rated for the application, and it is important that the user is aware of national installation codes.	Available in installation manual / data sheet	P

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	- Specific model / types together with the manufacturer name / brand of the PV connector(s) to which the PV module connectors can be mated	Available in installation manual / data sheet	P
	- The bonding method(s) to be used, if applicable, is specified either all provided or specified hardware	Available in installation manual / data sheet	P
	- The type and ratings of bypass diode to be used (if applicable)	Available in installation manual / data sheet	P
14.2.2.5	Fire ratings (Clause 6.2.3.5 of IEC 61730-1:2023)		
	- a statement indicating the fire rating(s)	☒ fire rating(s) and applied standards ☐ statement that resistance to external fire sources was not evaluated	P
	- Limitations to the achieved ratings (e.g., installation slope, sub structure or other applicable installation information)	Available in installation manual / data sheet	P
	- specific parameter(s) when the fire rating is dependent on a specific mounting structure, specific spacing, or specific means of attachment to the roof or structure	Available in installation manual / data sheet	P
14.3	Electrical components and insulation (Clause 5.3 of IEC 61730-1:2023)		
14.3.1	Internal wiring (Clause 6.3.2 of IEC 61730-1:2023)		
	Internal wiring has sufficient current carrying capacity for the relevant application.	Verified by MST 14 and MST 26, and refer to test report No. 492013492.001-012	P
14.3.2	Junction boxes for PV modules (Clause 6.3.6 of IEC 61730-1:2023)		
	Junction boxes for PV modules fulfil the requirements of IEC 62790:2020 and additional requirements in 6.5.2.2.3 of IEC 61730-1:2023.	☒ IEC 62790:2020	P
	Module level testing is performed to validate adhesion/connection of the junction box to the module and minimum clearance and creepage distances.	Compliance checked by IEC/EN 61730-2 tests listed in test report No. 492013492.001-012	P
14.3.3	External wiring and cables (Clause 6.3.3 of IEC 61730-1:2023)		
	External wires and cables fulfil the requirements of IEC 62930:2017.	☒ IEC 62930:2017 (type 131 or type 133) ☐ EN 50618 (alternative to IEC 62930 type 131)	P
14.3.4	Module overcurrent protection rating (Clause 6.3.4 of IEC 61730-1:2023)		
	Overcurrent protecting rating is determined according to IEC 60269-6.	Compliance verified by reverse current overload test (MST 26), and refer to test report No. 492013492.001-012	P
14.3.5	Connectors (Clause 6.3.5 of IEC 61730-1:2023)		

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	External DC connectors fulfil the requirements of IEC 62852:2014 + Amd. 1:2020 and requirements in 6.5.2.2 of IEC 61730-1:2023.	☒ IEC 62852:2014 + Amd. 1:2020	P
	Connectors are marked in accordance with 6.2 of IEC 61730-1:2023.	Verified by Visual inspection (MST 01), and refer to test report No. 492013492.001-012	P
14.3.6	Frontsheets and backsheets (Clause 6.3.7 of IEC 61730-1:2023)		
	Material of frontsheet:	☒ Glass ☐ Polymeric material ☐ Others	—
	Material of backsheet:	☒ Glass ☐ Polymeric material ☐ Others	—
	Polymeric frontsheets and backsheets fulfil the requirements of IEC 62788-2-1.	Not applicable for glass-glass construction module.	N/A
	Backsheets are restricted for use with indirect or limited direct sunlight equal to or lower than 300 W/m ² .	—	P
	The DTI requirements listed in Table 3 and Table 4 of IEC 61730-1:2023 are fulfilled by single or multiple layers of RUI as described in IEC 62788-2-1.	Not applicable for glass-glass construction module.	N/A
	Adhesion of frontsheet and backsheet to encapsulant or glass is appropriate.	Compliance checked at module level by IEC 61730-2:2023 tests listed in test report No. 492013492.001-012.	P
14.3.7	Insulation barriers (Clause 6.3.8 of IEC 61730-1:2023)		
	Polymeric insulation barrier meets the relevant requirements of Clause 6.5.2 of IEC 61730-1:2023).	See table 14.5.1 Part of IEC 62790:2020 qualification	P
	Barrier is held in place while keeping its required electrical and mechanical properties.	Compliance checked by IEC 61730-2:2023 tests listed in test report No. 492013492.001-012.	P
	Removal of barrier is only possible by using a tool.	Tools are necessary for removal of the insulation barrier.	P
14.3.8	Electrical connections (Clause 6.3.9 of IEC 61730-1:2023)		
14.3.8.1	General (Clause 6.3.9.1 of IEC 61730-1:2023)		
	Terminations are so designed, that the contact pressure is not transmitted through insulating material except ceramic, mica or other adequate material.	Compliance checked by MST 01, and refer to test report No. 492013492.001-012	P
	Prevention is taken that connections do not become loose, e.g. by using a washer.	Verified by MST 01 / MST 13, and refer to test report No. 492013492.001-012	P
	End of a stranded conductor is not consolidated by soft soldering.	Compliance checked by IEC 61730-2:2023 tests listed in test report No. 492013492.001-012.	P

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	Measures are taken to prevent contact stress impairing electrical conductivity.	Compliance checked by IEC 61730-2:2023 tests listed in test report No. 492013492.001-012.	P
14.3.8.2	Terminals for external cables and PV connector ribbons (Clause 6.3.9.2 of IEC 61730-1:2023)		
	Terminals for electrical connections are suitable for the type and range of conductor cross-sectional areas according to specification of the manufacturer. They meet the requirements of IEC 62790:2020 and additional RTE, RTI, and TI requirements in 6.5.2.2.3 of IEC 61730-1:2023.	☒ IEC 62790:2020	P
	Insulated terminals are designed in a manner where a possible displacement that may result in a reduction of clearances and creepage distances is prevented.	Insulated terminals are qualified according to the related component standards. Part of IEC 62790:2020 qualification.	P
14.3.8.3	Splices and connections inside a PV module (Clause 6.3.9.3 of IEC 61730-1:2023)		
	Splices and connections are mechanically secured and provide electrical continuity.	Compliance checked by IEC 61730-2:2023 tests listed in test report No. 492013492.001-012.	P
	Electrical connections are soldered, welded, conductively adhered, crimped, or otherwise securely connected.	Compliance checked by IEC 61730-2:2023 tests listed in test report No. 492013492.001-012.	P
	A soldered or conductively adhered joint is additionally mechanically secured.	Compliance checked by IEC 61730-2:2023 tests listed in test report No. 492013492.001-012.	P
14.3.9	Encapsulant (Clause 6.3.10 of IEC 61730-1:2023)		
	Thermal properties are sufficient for intended application.	Compliance checked by IEC 61730-2:2023 tests listed in test report No. 492013492.001-012.	P
	The insulation properties according to Clause 6.5.2.2 of IEC 61730-1:2023 are met, if applicable.	Compliance checked by IEC 61730-2:2023 tests listed in test report No. 492013492.001-012.	P
14.3.10	Bypass diodes (Clause 6.3.11 of IEC 61730-1:2023)		
	Bypass diodes are rated to withstand the current and voltage for their intended use.	Compliance checked by MST 01, MST 07, MST 22 and MST 25, and refer to test report No. 492013492.001-012 Datasheet values for bypass diode checked.	P

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14.4	Mechanical and electromechanical connections (Clause 6.4 of IEC 61730-1:2023)		
14.4.1	General (Clause 6.4.1 of IEC 61730-1:2023)		
	Type of connection:	☒ Connection within frame ☐ Mounting interfaces via adhesive ☒ Frame to clamp a mounting system ☒ Equipotential bonding ☒ Attachment of junction box ☐ Mechanical connections within the laminate	—
	Mechanical connections are durable to withstand the thermal, mechanical, and environmental stresses occurring in the application.	Compliance checked by inspection and by MST 13, MST 32, MST 34 and MST 37, and refer to test report No. 492013492.001-012	P
	Parts intended to be removed are only detachable with the aid of tools.	Tools are necessary for removal.	P
	A tool does not come into contact with the live parts when the lid is removed with it.	Compliance checked by IEC 62790:2020 tests.	P
	No friction occurs between surfaces as the sole means to inhibit the turning or loosening of a part, unless provisions to prevent unintended movement or rotation of the component are given.	No such parts.	N/A
14.4.2	Screw connections (Clause 6.4.2 of IEC 61730-1:2023)		
	Screws and mechanical connections withstand the mechanical stresses occurring in normal use.	No screw is used.	N/A
	Screws are not made of a material which is soft or liable to creep.	No screw is used.	N/A
	Screws used to provide mechanical stability and continuity for equipotential bonding withstand the mechanical stresses occurring in normal use.	No screw is used.	N/A
	At least one screw per electrical-mechanical connection ensures the electrical connection between the metallic components.	No screw is used.	N/A
	Screws used for mechanical and electrical connections with a nominal diameter of less than 3 mm are screwed into metal.	No screw is used.	N/A
	For screws used for mechanical and electrical connections two full threads are engaged into the metal.	No screw is used.	N/A
	Screwed and other fixed connections are in such a way that they do not come loose through torsion, bending stresses, vibration, etc.	No screw is used.	N/A
14.4.3	Rivets (Clause 6.4.3 of IEC 61730-1:2023)		

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	Rivets that have the double function of being concurrently electrical and mechanical connections are locked against loosening.	No rivet is used.	N/A
14.4.4	Thread-cutting screws (Clause 6.4.4 of IEC 61730-1:2023)		
	Thread-cutting and self-tapping screws are not used for interconnection of current-carrying parts made of a material which is soft or liable to creep.	No thread-cutting screw is used.	N/A
	No thread-forming or thread-cutting (self-tapping) screws (sheet metal screws) are used for the connection of current-carrying parts.	No thread-cutting screw is used.	N/A
	Thread-cutting (self-tapping) screws are not used if they are likely to be operated by the user or installer.	No thread-cutting screw is used.	N/A
	Thread-cutting and thread-forming screws, used to provide continuity for equipotential bonding, are such that it is not necessary to disturb the connection in normal use.	No thread-cutting screw is used.	N/A
	For equipotential bonding one screw is used if two full threads engage the metal.	No thread-cutting screw is used.	N/A
14.4.5	Form / press / tight fit (Clause 6.4.5 of IEC 61730-1:2023)		
	Form/press/tight fits of metallic components which are not separately equipotential bonded are electrically connected.	Compliance checked by inspection and tested by MST 32, MST 34 and MST 13 pre and post the MST 32 and MST 34 tests, and refer to test report No. 492013492.001-012	P
14.4.6	Connections by adhesives (Clause 6.4.6 of IEC 61730-1:2023)		
	Adhesion of a polymer relied upon for insulation to another insulating layer is appropriate for the application.	Compliance checked by MST 34, MST 13, MST 32 for adhesives used for mounting means and MST 42, MST 17 for junction box adhesives, and refer to test report No. 492013492.001-012	P
	For flexible modules:	—	—
	- The modules are mounted in accordance with the manufacturer's documentation with prescribed substrate and adhesive/mounting means during testing.	No flexible module	N/A
	- The test is done on the worst condition if the manufacturer's specified application allows mounting in a rigid or flexible mounting condition.	No flexible module	N/A
	- The specific substrate(s) that was (were) adhered to the flexible module in the tests are noted in the documentation.	No flexible module	N/A
	Connection by adhesive which is considered as cemented joint fulfills the requirements of Clause 6.6.4.3 IEC 61730-1:2023.	See table 14.6.4.3	P
14.4.7	Other connections (Clause 6.4.7 of IEC 61730-1:2023)		

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	Other connections (such as welded or soldered) as well as materials and processes to create the connections are appropriate for the application and for the intended use.	Compliance checked by MST 01 and MST 13, and refer to test report No. 492013492.001-012	P
	Other connections which are relied upon for equipotential bonding fulfil the requirements of MST 13.	Compliance checked by MST 01 and MST 13, and refer to test report No. 492013492.001-012	P

14.5	Materials (Clause 6.5 of IEC 61730-1:2023)		
14.5.1	Polymeric materials (Clause 6.5.2 of IEC 61730-1:2023)		
14.5.1.1	General (Clause 6.5.2.1 of IEC 61730-1:2023)		
	Polymeric materials are able to durably and safely withstand the electrical, mechanical, thermal, environmental, and corrosive stresses occurring in the application.	Compliance checked by IEC 61730-2:2023 listed in test report No. 492013492.001-012 and other environmental chamber tests including pre- and post-measurements and including assessment of creepages.	P
	Polymeric materials are resistant to electrical and mechanical property degradation.	Compliance checked by MST 37 in test report No. 492013492.001-012 Compliance checked by all tests including pre- and post-measurements and including assessment of creepages.	P
	Components meet the requirements of the following standards on the component level:	—	—
	- IEC 62788-2-1 for frontsheets and backsheets	Not applicable for glass-glass construction module.	N/A
	- IEC 62790 for junction-boxes for PV modules	Junction box meets the requirements of IEC 62790.	P
	- IEC 62852 for connectors for DC-application in PV systems	Connector meets the requirements of IEC 62852.	P
	- IEC 62930 (or EN 50618 for type 131) for electric cables for PV systems	Cable meets the requirements of IEC 62930.	P
14.5.1.2	Polymeric materials used as electrical insulation (Clause 6.5.2.2 of IEC 61730-1:2023)		
14.5.1.2.1	General (Clause 6.5.2.2.1 of IEC 61730-1:2023)		
	The material which serves as functional insulation is appropriate according to 6.6.4.4 of IEC 61730-1:2023.	See table 14.6.4	P
	The material relied upon for insulation in thin layers is appropriate for the application according to 6.6.4.2 of IEC 61730-1:2023.	Components are evaluated according to the relevant requirement in the applicable component standard.	P

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	Insulation is not impaired by short-term or long-term thermal stresses that can occur in manufacturing processes, transportation, and during normal operation by electrical stress and weathering to an extent that it does not comply with the requirements of IEC 61730-1:2023 and IEC 61730-2:2023.	Compliance checked by IEC/EN 61730-2 tests listed in test report No. 492013492.001-012.	P
14.5.1.2.2	Endurance to electrical stress (Clause 6.5.2.2.2 of IEC 61730-1:2023)		
	Materials used as electrical insulation are in compliance with the insulation coordination requirements.	See table 14.6.3	P
	Materials relied upon for insulation (RUI) have sufficient breakdown strength and comply with 6.6.4.2 of IEC 61730-1:2023.	Compliance checked by IEC/EN 61730-2 tests listed in test report No. 492013492.001-012.	P
	The polymeric material which is part of a potential tracking path is resistant to surface tracking, in coordination with the design dimensions in 6.6.3 of IEC 61730-1:2023.	Compliance checked by IEC/EN 61730-2 tests listed in test report No. 492013492.001-012.	P
14.5.1.2.3	Endurance to thermal stress (Clause 6.5.2.2.3 of IEC 61730-1:2023)		
	Materials used as relied upon insulation have a minimum RTE, RTI or TI in accordance with IEC 60216-5 or IEC 60216-1 of at least 90 °C.	☒ TI: ☐ RTE: ☐ RTI:	P
14.5.1.2.4	Endurance to environmental stress (Clause 6.5.2.2.4 of IEC 61730-1:2023)		
	The material's endurance to withstand simulated environmental stress is checked by compliance with IEC 61730-2:2023 at module level.	Compliance checked by IEC/EN 61730-2 tests listed in test report No. 492013492.001-012.	P
	Components comply with the requirements in the individual applicable international standards.	See table 14.5.1.1	P
14.5.1.3	Flammability (Clause 6.5.2.3 of IEC 61730-1:2023)		
	BAPV and BIPV comply with specific fire-related safety requirements originating from national building codes.	No BAPV or BIPV module	N/A
	External polymeric parts of the PV module whose deterioration could impair the safety comply with all the following additional requirements:	—	—
	- Minimum flammability class V-1	Compliance checked by MST 24, and refer to test report No. 492013492.001-012	P
	- Ignitability test (MST 24) in final application (laminated or the PV module)	See table 16.40, and refer to test report No. 492013492.001-012	P
	- Polymeric parts which are not components of the laminate fulfil the requirements of ignitability test	Compliance checked by MST 24, and refer to test report No. 492013492.001-012	P
	When the polymeric materials between two parts of different potential are recategorized as described in 6.6.4.4 of IEC 61730-1:2023, then at least one of the following requirements is met for the encapsulant:	☐ Flammability class minimum HB ☐ A method to verify spacings is established in the production process	N/A
14.5.1.4	Rigid polymeric materials used for mechanical functions (Clause 6.5.2.4 of IEC 61730-1:2023)		

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	Rigid polymeric materials used for mechanical functions pass the following tests:	—	—
	- Mechanical strength at lower temperatures, IEC 62790:2020, 5.3.8 followed by MST 01 (visual inspection) of IEC 61730-2	Junction box fulfills the requirements of IEC 62790	P
	- Weather resistance test, IEC 62790:2020, 5.3.11 followed by MST 01 (visual inspection) of IEC 61730-2:2023	Junction box fulfills the requirements of IEC 62790	P
	- Minimum flammability class V-1	Junction box fulfills the requirements of IEC 62790	P
	- RTI/RTE/TI ($\geq 90^\circ\text{C}$)	☒ TI: ☐ RTE: ☐ RTI: Junction box fulfills the requirements of IEC 62790	P
14.5.2	Metallic materials (Clause 6.5.3 of IEC 61730-1:2023)		
14.5.2.1	General (Clause 6.5.3.1 of IEC 61730-1:2023)		
	Metallic components withstand a minimum corrosion atmospheric category level C2 in ISO 9224:2012.	Compliance is checked by inspection.	P
	Metal parts are not in contact to other metal parts having a difference of their electrochemical potentials of more than 600 mV.	Compliance is checked by inspection.	P
	Iron or mild steel is plated, painted, or enamelled for protection against corrosion.	Compliance is checked by inspection.	P
	For iron or mild steel, corrosion protection is at least equivalent to a zinc coating of 0.015 mm thickness, and the manufacturer specified how they demonstrate this.	Compliance is checked by inspection.	P
14.5.2.2	Current carrying parts (Clause 6.5.3.2 of IEC 61730-1:2023)		
	Assessed parts:	—	—
	Current-carrying parts have sufficient mechanical strength and electrical conductivity.	Compliance checked by IEC 61730-2:2023 tests listed in test report No. 492013492.001-012.	P
	Current-carrying materials are protected against corrosion.	N/A	N/A
	The coating for protective coated metal is capable of preventing corrosion according to either one of the listed standards.	N/A	N/A
	Coated metal is not used if the current-carrying parts are stressed by abrasion.	N/A	N/A
14.5.3	Adhesives (Clause 6.5.4 of IEC 61730-1:2023)		
	Adhesives are appropriate for the application.	Compliance is checked by relevant tests of IEC 61730-2:2023, including MST 42, MST 34, MST 01, MST 11 and MST 17, and refer to test report No. 492013492.001-012	P

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	Adhesives as part of the relied upon electrical insulation meet the requirements of Clause 6.5.2.2.3 of IEC 61730-1:2023.	See table 14.5.1.2.3	P
14.6	Protection against electric shock (Clause 6.6 of IEC 61730-1:2023)		
14.6.1	General (Clause 6.6.1 of IEC 61730-1:2023)		
	Adequate protection against contact with hazardous live parts is provided and poses no risk of electric shock.	See table 14.6.2 - 14.6.4	P
14.6.2	Protection against accessibility to hazardous live parts (Clause 6.6.2 of IEC 61730-1:2023)		
14.6.2.1	General (Clause 6.6.2.1 of IEC 61730-1:2023)		
	Class of module	See safety ratings	—
	For Class 0 and Class II modules, adequate protection against accessibility to hazardous live parts (> 30 V DC) is provided.	Compliance is checked by MST 01 and MST 11, and refer to test report No. 492013492.001-012	P
	For Class 0 PV modules, accessible metal parts are separated by at least basic insulation.	Table 2 in Clause 6.6.2.3 of IEC 61730-1:2023	P
	Class II PV modules are constructed and enclosed that only parts separated from hazardous live parts by double or reinforced insulation are accessible.	Table 2 in Clause 6.6.2.3 of IEC 61730-1:2023	P
	In Class III PV modules live parts of different polarity are separated by at least functional insulation.	Table 2 in Clause 6.6.2.3 of IEC 61730-1:2023	P
	Polymeric materials used for realizing protection against accessibility of hazardous live parts by means of enclosure, insulation barrier or relied upon insulation comply with the requirements of Clause 6.5.2 of IEC 61730-1:2023 due to their application.	See table 14.5.1	P
14.6.2.2	Protection by means of enclosures and insulation barriers (Clause 6.6.2.2 of IEC 61730-1:2023)		
	Enclosures or insulation barriers are designed that, after mounting, the live parts are not accessible (even after possible deformation).	Encapsulant, glass, backsheet, junction box, cable and connectors acceptably insulate any live parts.	P
	The degree of protection of housing is not impaired by any possible deformation.	Encapsulant, glass, backsheet, junction box, cable and connectors acceptably insulate any live parts.	P
	Parts of enclosures and insulation barriers that provide protection are not removable without the use of a tool.	Tools are necessary for removal.	P
	Lids which are attached without screws have one or several detectable features, e.g. recesses.	Compliance verified by evaluation of components.	P
	Tools to open the lid do not come into contact with the live parts if lid is removed correctly.	Tools are necessary for removal.	P
	Insulation barriers are held in place and are not affected by influences expected during normal operation. Electrical and mechanical properties do not fall below the minimum acceptable values for the application.	Compliance checked by IEC 61730-2:2023 tests listed in test report No. 492013492.001-012.	P

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	Parts are prevented from loosening or turning.	No such parts.	N/A
14.6.2.3	Protection by means of insulation of live parts (Clause 6.6.2.3 of IEC 61730-1:2023)		
	An insulation material providing the sole insulation between a live part and an accessible metal part, or between uninsulated live parts not of the same potential, is of adequate thickness and of a material appropriate for the application. For requirements see table 2 in Clause 6.6.2.3 of IEC 61730-1:2023.	Compliance verified by evaluation of materials and components.	P
14.6.3	Insulation coordination (Clause 6.6.3 of IEC 61730-1:2023)		
	Clearance and creepage distances fulfil the requirements in Table 3 and Table 4 of IEC 61730-1:2023) (Clause 6.6.3.1 of IEC 61730-1:2023).	See table 14.7	—
	Pollution degree (Clause 6.6.3.2.1 of IEC 61730-1:2023):	See tables in 14.7	—
	Material group (Clause 6.6.3.2.2 IEC 61730-1:2023):	See tables in 14.7	—
14.6.3.1	Creepage distance (Clause 6.6.3.3 of IEC 61730-1:2023)		
	Minimum values for creepage distance are in accordance with Table 3 or Table 4 of IEC 61730-1:2023). Compliance is checked by MST 57.	See tables in 14.7	P
	Minimum creepage distance requirements between live parts of different potential inside the junction box are verified according to Table 3 and Table 4 of IEC 61730-1:2023 related to the relevant working voltage considering pollution degree.	See tables in 14.7	P
14.6.3.2	Clearance (Clause 6.6.3.4 of IEC 61730-1:2023)		
	Clearance values are met for air gaps between conductive parts. Compliance is checked by MST 57.	See tables in 14.7	P
	Derating factor for altitude above 2000 m is considered.	N/A	N/A
	Minimum clearance distance requirements between live parts of different potential inside the junction box are verified according to Table 3 and Table 4 of IEC 61730-1:2023 related to the relevant working voltage.	See tables in 14.7	P
14.6.4	Distance through functional and relied upon insulation (Clause 6.6.4 of IEC 61730-1:2023)		
14.6.4.1	General (Clause 6.6.4.1 of IEC 61730-1:2023)		
14.6.4.2	Thin layers – relied upon insulation (Clause 6.6.4.2 of IEC 61730-1:2023)		
	Relied upon insulation in thin layers is applied at	☐ Backsheet ☐ Frontsheet ☐ Insulation within laminate ☐ Others	—
	Design requirements of frontsheets and backsheets fulfil the requirements of IEC 62788-2-1.	Not applicable for glass-glass construction module.	N/A

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	Thickness of the other insulation materials used for RUI, except glass or ceramic materials, are verified by MST 04 (insulation thickness test) and MST 16 (insulation test) after MST 12 (cut susceptibility test).	Not applicable for glass-glass construction module.	N/A
	The thickness requirement (DTI) of row 4) of Table 3 and Table 4 of IEC 61730-1:2023 is fulfilled.	Not applicable for glass-glass construction module.	N/A
	For a single-layer construction that the RUI layers contributing to the DTI fulfils the following requirements:	—	—
	- Minimum thickness complies with thin-layers requirements in Table 3 or Table 4 of IEC 61730-1:2023.	N/A	N/A
	- RTE/TI/RTI complies with 6.5.2.2.3 of IEC 61730-1:2023.	N/A	N/A
	- Insulation provides sufficient dielectric strength. Test voltage (2000V + 4 times system voltage): 8000V	N/A	N/A
	For a multiple-layer construction that the RUI layers contributing to the DTI fulfils the following requirements:	—	—
	- Each layer providing RUI meets the following requirements:	—	—
	- RTE/TI/RTI complies with 6.5.2.2.3 of IEC 61730-1:2023.	N/A	N/A
	- One layer meets the dielectric strength requirements for reinforced insulation; or at least two layers each meet the dielectric strength requirements for basic insulation (1 000 V + 2 times the system voltage):	N/A	N/A
	- The full multilayer construction meets the following requirements:	—	—
	- DTI value is in compliance with values according to line 4) "DTI" of Table 3 and Table of IEC 61730-1:2023.	N/A	N/A
	- Test voltage for entire multi-layer sheet providing relied upon insulation (2000V + 4 times system voltage):	N/A	N/A
	Supplementary information: Above listed tests have to be performed for each cemented joint.		
14.6.4.3	Cemented joints (Clause 6.6.4.3 of IEC 61730-1:2023)		
	Cemented joints were considered as	☐ Edge seal ☒ Interface between junction box and mounting surface ☐ Others ☐ No cemented joints	—
	Distances along cemented joints comply with the minimum distances as required in table 3 or table 4 of IEC 61730-1:2023.	Junction box is approved according to IEC 62790:2020.	P
	Distance along cemented joints, req./meas. [mm]:	Junction box is approved according to IEC 62790:2020.	P

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	A distance between two rigid parts other than used for junction boxes is considered as cemented joint if following requirements are met:	—	—
	- Neither cracks nor voids in the insulating compounds have been occurred which either by themselves or in combination.	No cemented joints	N/A
	- No breakdown at MST 16 (initial and final tests) with a 1.35 times higher test voltage occurred.	No cemented joints	N/A
	- No breakdown at MST 17 (initial and final tests) with a 1.35 times higher test voltage occurred.	No cemented joints	N/A
	- The electrically insulating adhesive / sealant has a volume resistivity of bigger than $50 \times 10^6 \Omega \text{ cm}$ (dry) / bigger than $10 \times 10^6 \Omega \text{ cm}$ (wet).	No cemented joints	N/A
	- Peel test (MST 35) was passed (rigid / flexible or flexible / flexible)	No cemented joints	N/A
	- Lap shear strength test (MST 36) was passed (rigid / rigid)	No cemented joints	N/A
	A distance between two rigid parts or rigid to flexible parts used for junction boxes is considered as cemented joint if following requirement is met:	—	—
	- The measured distances through cemented joints at adhesive area of junction box do not fall below the minimum values listed in Tables 3 and 4 of IEC 61730-1:2023.	Compliance checked by MST 57, and refer to test report No. 492013492.001-012	P
14.6.4.4	Distance through functional insulation (Clause 6.6.4.4 of IEC 61730-1:2023)		
	Distance through functional insulation meets the requirements described in line 3) a) of Table 3 and Table 4 of IEC 61730-1:2023.	See table 14.7	P
	The values in line 3) b) of Table 3 and Table 4 of IEC 61730-1:2023 is used as the following requirements are met:	—	—
	- The MST 57 evaluation of insulation coordination is passed.	See table 16.38, and refer to test report No. 492013492.001-012	P
	- ☐ the encapsulant meets flammability requirements, minimum HB according to IEC 60695-11-10 - ☐ a method to verify spacings is included in the production process	☐ the encapsulant meets flammability requirements, minimum HB according to IEC 60695-11-10 ☒ a method to verify spacings is included in the production process	P

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14.7 Clearance and creepage distances (Clause 6.6.3.4 of IEC 61730-1:2023) and Evaluation of clearances, creepage distances and distance through functional insulation (MST 57 of IEC 61730-2:2023)										
Sample no.			1							—
Clearance (cl) and creepage distance (cr) at/of/between:	Line of table 3 or 4	Type of insulation	Pollution degree	CTI Material group	Working voltage [V]	Clearance ^a cl & Creepage cr [mm]				
						Required	Design	Measured (initial)	Measured (final)	
Position 1: Shortest distance string connector – module edge	1a	☐ F ☐ B ☐ S. ☒ R	☒ 1 ☐ 2	☐ I ☐ II ☐ IIIa ☒ N/A	1500	Cl: 19.4	Cl: 13.0 ±1.0	Cl: 13.0	Cl: 13.0	P
						Cr: 10.4	Cr: 13.0 ±1.0	Cr: 13.0	Cr: 13.0	P
Position 2: Shortest distance cell – module edge	1a	☐ F ☐ B ☐ S. ☒ R	☒ 1 ☐ 2	☐ I ☐ II ☐ IIIa ☒ N/A	1500	Cl: 19.4	Cl: 12.9 ±1.0	Cl: 12.9	Cl: 12.9	P
						Cr: 10.4	Cr: 12.9 ±1.0	Cr: 12.9	Cr: 12.9	P
Position 3: Cell to cell	2	☐ F ☒ B ☐ S. ☐ R	☒ 1 ☐ 2	☐ I ☐ II ☐ IIIa ☒ N/A	< 35	Cl: 0.1	Cl: 0.7 ±0.5	Cl: 0.7	Cl: 0.7	P
						Cr: 0.2	Cr: 0.7 ±0.5	Cr: 0.7	Cr: 0.7	P
Position 4: String to string	2	☐ F ☒ B ☐ S. ☐ R	☒ 1 ☐ 2	☐ I ☐ II ☐ IIIa ☒ N/A	< 35	Cl: 0.1	Cl: 1.7 ±1.0	Cl: 1.7	Cl: 1.7	P
						Cr: 0.2	Cr: 1.7 ±1.0	Cr: 1.7	Cr: 1.7	P
Position 5: Any other position:	3	☐ F ☐ B ☐ S. ☐ R ☒ N/A	☐ 1 ☐ 2 ☒ N/A	☐ I ☐ II ☐ IIIa ☒ N/A	< 35	Cl: N/A	Cl: N/A	Cl: N/A	Cl: N/A	N/A
						Cr: N/A	Cr: N/A	Cr: N/A	Cr: N/A	N/A

Supplementary information: See photographs in Appendix D.

Abbreviations of types of insulation

F = Functional

B = Basic

S = Suppl.

R = Reinforced

^a List relevant position and test voltage for each clearance which is verified by Impulse voltage test according to IEC 60664-1.

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15	Pass criteria (Clause 7 of IEC 61215-1:2021)		
15.1	Output power and electric circuitry (Clause 7.2 of IEC 61215-1:2021)		
15.1.1	Verification of rated label values (Gate #1) (STC) (Clause 7.2.1 of IEC 61215-1:2021)		
	After stabilization, each individual module shall meet: $P_{\max}(\text{Lab}) \cdot \left(1 + \frac{1.65}{2} m_1 \right) \geq P_{\max}(\text{NP}) \cdot \left(1 - \frac{ t_1 }{100}\right)$ $\bar{P}_{\max}(\text{Lab}) \cdot \left(1 + \frac{1.65}{2} m_1 \right) \geq P_{\max}(\text{NP})$	Refer to test report No. 492013492.001-012	P
	After stabilization, each individual module shall meet: $V_{\text{OC}}(\text{Lab}) \cdot \left(1 + \frac{1.65}{2} m_2 \right) \leq V_{\text{OC}}(\text{NP}) \cdot \left(1 + \frac{ t_2 }{100}\right)$	Refer to test report No. 492013492.001-012	P
	After stabilization, each individual module shall meet: $I_{\text{SC}}(\text{Lab}) \cdot \left(1 + \frac{1.65}{2} m_3 \right) \leq I_{\text{SC}}(\text{NP}) \cdot \left(1 + \frac{ t_3 }{100}\right)$	Refer to test report No. 492013492.001-012	P
	After stabilization, each individual module that is used for the qualification of low end power classes shall meet: $P_{\max}(\text{Lab}) \cdot \left(1 - \frac{1.65}{2} m_4 \right) \leq P_{\max4}(\text{NP}) \cdot \left(1 + \frac{ t_4 }{100}\right)$	Refer to test report No. 492013492.001-012	P
	m_1 [%] = measurement uncertainty of laboratory for $P_{\max}$ m_2 [%] = measurement uncertainty of laboratory for V_{OC} m_3 [%] = measurement uncertainty of laboratory for I_{SC} t_1 [%] = manufacturer's rated lower production tolerance for $P_{\max}$ t_2 [%] = manufacturer's rated upper production tolerance for V_{OC} t_3 [%] = manufacturer's rated upper production tolerance for I_{SC} t_4 [%] = manufacturer's rated upper production tolerance for $P_{\max4}$ $P_{\max4}$ = maximum rated nameplate power of lowest power class module NP = name plate		—
—	Verification of rated label values (Gate #1) (BNPI) (Clause 7.2.1 of IEC 61215-1:2021)		
	After stabilization, each individual module shall meet: $P_{\max}(\text{BNPI})(\text{Lab}) \cdot \left(1 + \frac{1.65}{2} m_{1(\text{BNPI})} \right) \geq P_{\max}(\text{BNPI})(\text{NP}) \cdot \left(1 - \frac{ t_{1(\text{BNPI})} }{100}\right)$ $\bar{P}_{\max}(\text{BNPI})(\text{Lab}) \cdot \left(1 + \frac{1.65}{2} m_{1(\text{BNPI})} \right) \geq P_{\max}(\text{BNPI})(\text{NP})$	Refer to test report No. 492013492.001-012	P
	After stabilization, each individual module shall meet: $V_{\text{OC}(\text{BNPI})}(\text{Lab}) \cdot \left(1 + \frac{1.65}{2} m_{2(\text{BNPI})} \right) \leq V_{\text{OC}(\text{BNPI})}(\text{NP}) \cdot \left(1 + \frac{ t_{2(\text{BNPI})} }{100}\right)$	Refer to test report No. 492013492.001-012	P
	After stabilization, each individual module shall meet:	Refer to test report No. 492013492.001-012	P

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	$I_{SC(BNPI)}(Lab) \cdot \left(1 + \frac{1.65}{2} \frac{ m_3(BNPI) }{100}\right) \leq I_{SC(BNPI)}(NP) \cdot \left(1 + \frac{ t_3(BNPI) }{100}\right)$		
	After stabilization, each individual module that is used for the qualification of low end power classes shall meet: $P_{max(BNPI)}(Lab) \cdot \left(1 - \frac{1.65}{2} \frac{ m_1(BNPI) }{100}\right) \leq P_{max4(BNPI)}(NP) \cdot \left(1 + \frac{ t_4(BNPI) }{100}\right)$	Refer to test report No. 492013492.001-012	P
	$m_1(BNPI)$ [%] = measurement uncertainty of laboratory for $P_{max(BNPI)}$ $m_2(BNPI)$ [%] = measurement uncertainty of laboratory for $V_{OC(BNPI)}$ $m_3(BNPI)$ [%] = the measurement uncertainty of laboratory for $I_{SC(BNPI)}$ $t_1(BNPI)$ [%] = manufacturer's rated lower production tolerance for $P_{max(BNPI)}$ $t_2(BNPI)$ [%] = manufacturer's rated upper production tolerance for $V_{OC(BNPI)}$ $t_3(BNPI)$ [%] = manufacturer's rated upper production tolerance for $I_{SC(BNPI)}$ $t_4(BNPI)$ [%] = manufacturer's rated upper production tolerance for $P_{max4(BNPI)}$ $P_{max4(BNPI)}$ = maximum rated nameplate power of lowest power class module (under BNPI) NP = name plate		—

15.1.2	Maximum power degradation during type approval testing (Gate #2) (STC) (Clause 7.2.2 of IEC 61215-1:2021)		
	At the end of each test sequence, each test sample shall meet: $P_{max}(Lab_Gate\#2) \geq 0.95 \times P_{max}(Lab_Gate\#1) \cdot \left(1 - \frac{r}{100}\right)$	Refer to test report No. 492013492.001-012	P
	r = reproducibility		—
—	Maximum power degradation during type approval testing (Gate #2) (BNPI) (Clause 7.2.2 of IEC 61215-1:2021)		
	At the end of each test sequence, each test sample shall meet: $P_{max(BNPI)}(Lab_Gate\#2) \geq 0.95 \times P_{max(BNPI)}(Lab_Gate\#1) \cdot \left(1 - \frac{r_{(BNPI)}}{100}\right)$	Refer to test report No. 492013492.001-012	P
	$r_{(BNPI)}$ = reproducibility		—

15.1.3	Electrical circuitry (Clause 7.2.3 of IEC 61215-1:2021)		
	Samples are not permitted to exhibit an open-circuit during the tests.	No open-circuit during tests	P
15.2	Visual defects (Clause 7.3 of IEC 61215-1:2021)		
	There is no visual evidence of a major defect.	No major visual defect	P
15.3	Electrical safety (Clause 7.4 of IEC 61215-1:2021)		
	The insulation test (MQT 03) requirements are met at the beginning and the end of each sequence.	Refer to test report No. 492013492.001-012	P
	The wet leakage current test (MQT 15) requirements are met at the beginning and the end of each sequence.	Refer to test report No. 492013492.001-012	P
	Specific requirements of the individual tests are met.	Refer to test report No. 492013492.001-012	P

Supplementary information: -

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III	IEC 61215-2:2021 and IEC 61730-2:2023 – Test procedures
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16	Overview of tests and test results
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Initial examination	—	—
Visual inspection (MQT 01 / MST 01)	See table 16.1 and refer to test report No. 492013492.001-012	P
Insulation test (MQT 03 / MST 16)	Refer to test report No. 492013492.001-012	P
Wet leakage current test (MQT 15 / MST 17)	Refer to test report No. 492013492.001-012	P
Accessibility test (MST 11)	Refer to test report No. 492013492.001-012	P
Continuity test of equipotential bonding (MST 13)	Refer to test report No. 492013492.001-012	P
Maximum power determination (MQT 02 / MST 03)	Refer to test report No. 492013492.001-012	P
Initial stabilization (MQT 19.1)	Refer to test report No. 492013492.001-012	P
Performance at STC (MQT 06.1 / MST 03)	See table 16.8 and refer to test report No. 492013492.001-012	N/A
Gate #1 evaluation	Refer to test report No. 492013492.001-012	P

Sequence A	—	—
Measurement of temperature coefficients (MQT 04)	Refer to test report No. 492013492.001-012	P
Performance at low irradiance (MQT 07)	Refer to test report No. 492013492.001-012	P

Sequence B1	—	—
Outdoor exposure test (MQT 08)	Refer to test report No. 492013492.001-012	P

Sequence B2	—	—
Hot-spot endurance test (MQT 09 / MST 22)	Refer to test report No. 492013492.001-012	P
Reverse current overload test (MST 26)	Refer to test report No. 492013492.001-012	P

Sequence B3	—	—
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Bypass diode thermal test (MQT 18.1 / MST 25)		Refer to test report No. 492013492.001-012	P
Sequence C		—	—
UV preconditioning test (MQT 10 / MST 54)		Refer to test report No. 492013492.001-012	P
Cyclic (dynamic) mechanical load test (MQT 20)		Refer to test report No. 492013492.001-012	P
Thermal cycling test (50 cycles) (MQT 11 / MST 51)		Refer to test report No. 492013492.001-012	P
Humidity-freeze test (MQT 12 / MST 52)		Refer to test report No. 492013492.001-012	P
Sequence C1		—	—
Retention of junction box on mounting surface (MQT 14.1 / MST 42)		Refer to test report No. 492013492.001-012	P
Test of cord anchorage (MQT 14.2)		Refer to test report No. 492013492.001-012	P
Sequence D		—	—
Thermal cycling test (200 cycles) (MQT 11 / MST 51)		Refer to test report No. 492013492.001-012	P
Sequence E		—	—
Damp heat test (MQT 13 / MST 53)		Refer to test report No. 492013492.001-012	P
Sequence E1		—	—
Retention of junction box on mounting surface (MQT 14.1 / MST 42)		Refer to test report No. 492013492.001-012	P
Static mechanical load test (MQT 16 / MST 34)		Refer to test report No. 492013492.001-012	P
Sequence E2		—	—
Hail test (MQT 17)		Refer to test report No. 492013492.001-012	P
Sequence F		—	—
Materials creep test (MST 37)		Refer to test report No. 492013492.001-012	P
Sequence Gf		—	—
Damp heat test (200h) (MST 53)		Refer to test report No. 492013492.001-012	P

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UV test (front side) (MST 54)	Refer to test report No. 492013492.001-012	P
Humidity-freeze test (MST 52)	Refer to test report No. 492013492.001-012	P
Insulation thickness test (MST 04)	Not applicable for glass frontsheet	N/A

Sequence Gb	—	—
Damp heat test (200h) (MST 53)	Refer to test report No. 492013492.001-012	P
UV test (back side) (MST 54)	Refer to test report No. 492013492.001-012	P
Humidity-freeze test (MST 52)	Refer to test report No. 492013492.001-012	P
Insulation thickness test (MST 04)	Not applicable for glass backsheet	N/A

Sequence G1	—	—
Cold conditioning test 1 (MST 55)	Refer to test report No. 492013492.001-012	P
Dry heat conditioning test (MST 56)	Refer to test report No. 492013492.001-012	P
Humidity-freeze test 1 (MST 52)	Refer to test report No. 492013492.001-012	P
Cold conditioning test 2 (MST 55)	Refer to test report No. 492013492.001-012	P
Humidity-freeze test 2 (MST 52)	Refer to test report No. 492013492.001-012	P

Sequence H	—	—
Impulse voltage test (MST 14)	Refer to test report No. 492013492.001-012	P

Sequence M	—	—
Module breakage test (MST 32)	Refer to test report No. 492013492.001-012	P

Sequence I	—	—
Ignitability test (MST 24)	Refer to test report No. 492013492.001-012	P

Sequence K	—	—
Potential induced degradation test (MQT 21)	Refer to test report No. 492013492.001-012	P

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Absatz	Photovoltaic (PV) modules	Messergebnisse - Bemerkungen	Ergebnis
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Sequence J	—	—
Fire test (MST 23)	Refer to test report No. 492013492.001-012	P

Sequence L	—	—
Bending test (MQT 22)	No flexible module	N/A

Final measurements	—	—
Final stabilization (MQT 19.2 / MQT 19.3)	Refer to test report No. 492013492.001-012	P
Maximum power determination (MQT 02 / MST 03)	Refer to test report No. 492013492.001-012	P
Performance at STC (MQT 06.1 / MST 03)	Refer to test report No. 492013492.001-012	P
Gate #2 evaluation	Refer to test report No. 492013492.001-012	P
Bypass diode functionality test (MQT 18.2 / MST 07)	Refer to test report No. 492013492.001-012	P
Cut susceptibility test (MST 12)	Not applicable for glass backsheets	N/A
Accessibility test (MST 11)	Refer to test report No. 492013492.001-012	P
Continuity test of equipotential bonding (MST 13)	Refer to test report No. 492013492.001-012	P
Screw connections test (MST 33)	No screw connections	N/A
Durability of markings (MST 05)	Refer to test report No. 492013492.001-012	P
Sharp edge test (MST 06)	Refer to test report No. 492013492.001-012	P

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.		

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Absatz	Photovoltaic (PV) modules	Messergebnisse - Bemerkungen	Ergebnis
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16.1	Visual inspection (initial) – MQT 01 / MST 01		
Test date (dd/mm/yyyy)		21/01/2026	—
Sample no.	Requirement	Nature and position of initial findings	
1	No major visual defects	No major visual defects	P
Supplementary information: -			

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

16.8	Performance at STC (initial) – MQT 06.1
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16.8.1	Performance at STC (front side) – MQT 06.1						
Test date (dd/mm/yyyy)			23/01/2026				—
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 ± 2				
Spectral mismatch			N/A				
Sample no.	P _{max} [W]	V _{mpp} [V]	I _{mpp} [A]	V _{oc} [V]	I _{sc} [A]	FF [%]	P
1	627.2	41.60	15.077	48.94	15.837	80.9	
Supplementary information: The non-illuminated side was covered with non-reflective background and aperture.							

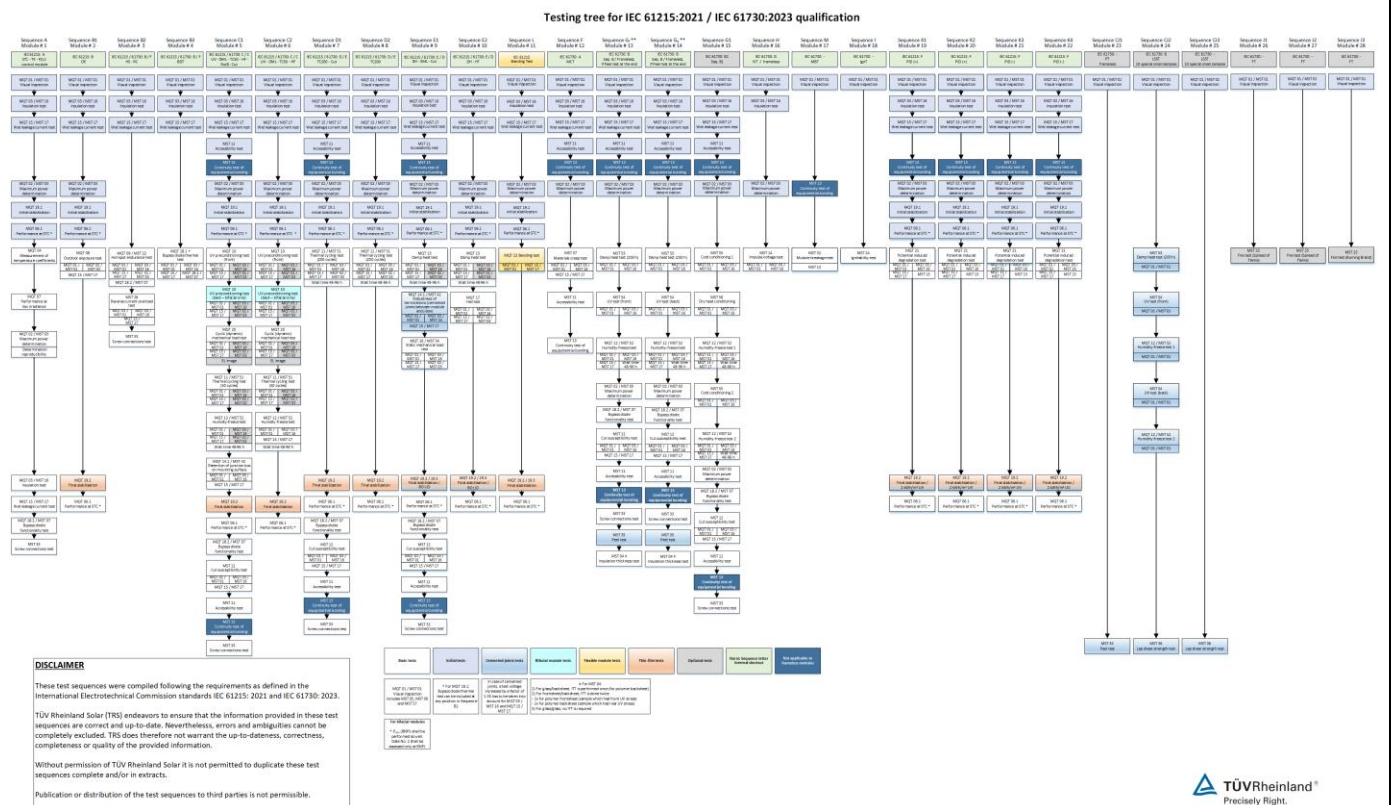
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Appendix A: Test charts

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



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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

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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:
 - o $2\sigma (P_{mpp}) \leq \pm 3.0 \%$
 - o $2\sigma (I_{sc}) \leq \pm 2.8 \%$
 - o $2\sigma (V_{oc}) \leq \pm 0.9 \%$
- Refer to test report No. 492013492.001-012 for the other extended measurement uncertainty.
- The reproducibility parameter r with the solar simulator is N/A.
- Refer to test report No. 492013492.001-012 for the other reproducibility parameter r with the solar simulator.
- Relative measurements were performed with a flash type solar simulator.

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Appendix C: History of reporting and certification

Project no.	Report no.	Certificate no.	Date of issue	Remarks
N/A	N/A	N/A	N/A	N/A

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Appendix D: Photos

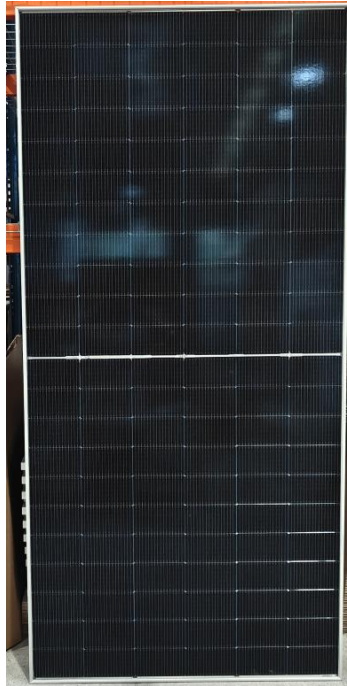


Fig. 1: front view of test sample



Fig. 2: rear view of test sample

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 PHOTO DOCUMENTATION

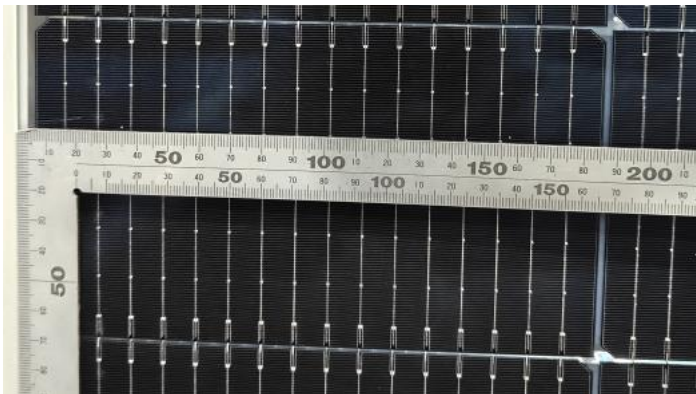


Fig. 3: detail view of solar cell

 WARNING!  Electrical Hazard Do not connect or disconnect under load	Model Type: QM210RTHCD-630-66				STC: E=1000W/m², AM 1.5, Tc=25 °C BSI: E=1000W/m², E=300W/m² BNPI: E=1000W/m², E=135W/m² gPmax: 80±5%, gVoc: 98±5%, gIsc: 80±5% Min. Design Load: -16000Pa/+36000Pa Module (T _a)max: 70 °C https://www.solavita.com Tested according to IEC 61215:2021 and IEC 61730:2023	   Shenzhen Qiming Photovoltaic Technology Co., Ltd. Add: 201, Building 10, No. 2-1, Xiguangyue Third Road, Loucun Community, Xixu Street, Guangming District, Shenzhen 518107 Guangdong, P.R. China Made in China
	Test conditions Maximum Power (Pmax) Open-Circuit Voltage (Voc) Short-Circuit Current (Isc) Voltage at Pmax (Vmp) Current at Pmax (Imp) Maximum System Voltage Maximum Overcurrent Protection Rating	STC 630 W 50.20 V 15.93 A 42.00 V 15.01 A 1500 VDC 25 A	BNPI 695 W 50.55 V 17.49 A 42.35 V 16.42 A 1500 VDC 25 A	Isc _{min} Protection Class Fire Rating Connector Manufacturer Connector Type (See manual for all designated connectors) Power Sorting Tolerance Pmax & Voc & Isc Tolerance		

Fig. 4: detail view of type label

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PHOTO DOCUMENTATION

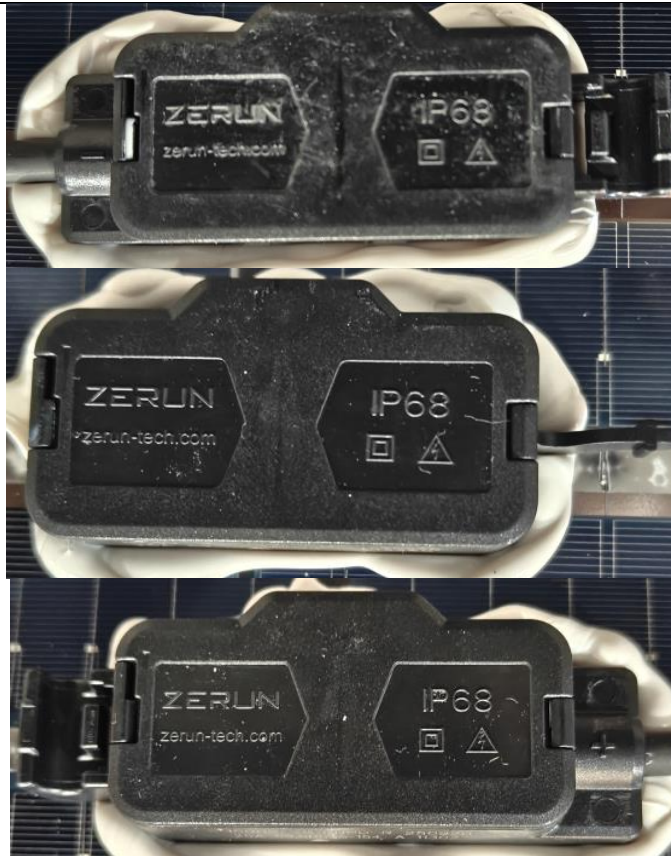


Fig. 5: detail view of closed junction box



Fig. 6: detail view of connector

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Fig. 7: detail view of cable



Fig. 8: detail view of equipotential bonding hole and symbol

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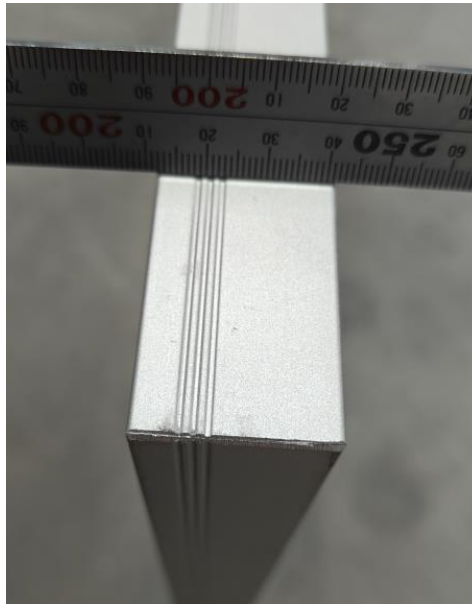


Fig. 9: detail view of frame corner

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Appendix E: Declaration

Declaration

To: TÜV Rheinland (Shanghai) Co., Ltd.

我司（深圳起明光伏科技有限公司）在此声明：对下列型号光伏组件的型号命名予以更新，具体内容如下表所示。特此通知。

Shenzhen Qiming Photovoltaic Technology Co., Ltd. hereby announces an update to the names of the photovoltaic modules of the following models, as detailed in the table below, please notice!

Old Type	New type
156 cells: QM182THCD-xxx-78 (xxx=610-640, in steps of 5)	156 cells: QM182NTHCD-xxx-78 (xxx=610 - 650, in steps of 5)
156 cells: QM182THCD-xxx-78 (xxx=615-650, in steps of 5)	
156 cells: QM182THCDQ-xxx-78 (xxx=615-650, in steps of 5)	156 cells: QM182NTHCDQ-xxx-78 (xxx = 615 - 650, in steps of 5)
156 cells: QM182THCDZ-xxx-78 (xxx=615-650, in steps of 5)	156 cells: QM182NTHCDZ-xxx-78 (xxx = 615 - 650, in steps of 5)
144 cells: QM182THCD-xxx-72 (xxx=565-590, in steps of 5)	144 cells: QM182NTHCD-xxx-72 (xxx = 565 - 595, in steps of 5)
144 cells: QM182THCD-xxx-72 (xx =570-595, in steps of 5)	
144 cells: QM182THCDQ-xxx-72 (xxx=570 - 595, in steps of 5)	144 cells: QM182NTHCDQ-xxx-72 (xxx = 570 - 595, in steps of 5)
144 cells: QM182THCDZ-xxx-72 (xxx=570 - 595, in steps of 5)	144 cells: QM182NTHCDZ-xxx-72 (xxx = 570 - 595, in steps of 5)
120 cells: QM182THCD-xxx-60 (xxx=470 - 490, in steps of 5)	120 cells: QM182NTHCD-xxx-60 (xxx = 470 - 500, in steps of 5)
120 cells: QM182THCD-xxx-60 (xxx=475 - 500, in steps of 5)	
120 cells: QM182THCDQ-xxx-60 (xxx=475 - 500, in steps of 5)	120 cells: QM182NTHCDQ-xxx-60 (xxx = 475 - 500, in steps of 5)
120 cells: QM182THCDZ-xxx-60 (xxx =475 - 500, in steps of 5)	120 cells: QM182NTHCDZ-xxx-60 (xxx = 475 - 500, in steps of 5)
108 cells: QM182THCD-xxx-54 (xxx =425 - 440, in steps of 5)	108 cells: QM182NTHCDH-xxx-54 (xxx = 425 - 450, in steps of 5)
108 cells: QM182THCD-xxx-54 (xxx =425 - 450, in steps of 5)	
108 cells: QM182THCDQ-xxx-54 (xxx =425 - 450, in steps of 5)	108 cells: QM182NTHCDQH-xxx-54 (xxx = 425 - 450, in steps of 5)
108 cells: QM182THCDZ-xxx-54 (xxx =425 - 450, in steps of 5)	108 cells: QM182NTHCDZH-xxx-54 (xxx = 425 - 450, in steps of 5)
28 cells: QM182THCDW-xxx-14 (xxx=105-110, in steps of 5)	28 cells: QM182NTHCDW-xxx-14 (xxx=105-110, in steps of 5)

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Old Type	New type
16 cells: QM182THCDW-xxx-8 (xxx=60)	16 cells: QM182NTHCDW-xxx-8 (xxx=60)
8 cells: QM182THCDW-xxx-4 (xxx=30)	8 cells: QM182NTHCDW-xxx-4 (xxx=30)
108 cells: QM182THCD-xxx-54 (xxx=435 - 450, in steps of 5)	108 cells: QM182NTHCDH-xxx-54 (xxx = 435 - 450, in steps of 5)
156 cells: QM182THCDC-xxx-78 (xxx=350-375, 410-445, 465-500, 540- 560, in steps of 5)	156 cells: QM182NTHCDCr-xxx-78 (xxx=350-375, in steps of 5) 156 cells: QM182NTHCDCo-xxx-78 (xxx=410-435, in steps of 5) 156 cells: QM182NTHCDCy-xxx-78 (xxx=470-490, in steps of 5) 156 cells: QM182NTHCDCg-xxx-78 (xxx=480-500, in steps of 5) 156 cells: QM182NTHCDCb-xxx-78 (xxx=540-560, in steps of 5) 156 cells: QM182NTHCDCi-xxx-78 (xxx=420-445, in steps of 5) 156 cells: QM182NTHCDCp-xxx-78 (xxx=465-490, in steps of 5)
144 cells: QM182THCDC-xxx-72 (xxx=325-345, 380-410, 435-460, 500- 515, in steps of 5)	144 cells: QM182NTHCDCr-xxx-72 (xxx=325-345, in steps of 5) 144 cells: QM182NTHCDCo-xxx-72 (xxx=380-400, in steps of 5) 144 cells: QM182NTHCDCy-xxx-72 (xxx=435-450, in steps of 5) 144 cells: QM182NTHCDCg-xxx-72 (xxx=445-460, in steps of 5) 144 cells: QM182NTHCDCb-xxx-72 (xxx=500-515, in steps of 5) 144 cells: QM182NTHCDCi-xxx-72 (xxx=390-410, in steps of 5) 144 cells: QM182NTHCDCp-xxx-72 (xxx=430-450, in steps of 5)
120 cells: QM182THCDC-xxx-60 (xxx=270-285, 315-340, 360-385, 415- 430, in steps of 5)	120 cells: QM182NTHCDCr-xxx-60 (xxx=270-285, in steps of 5) 120 cells: QM182NTHCDCo-xxx-60 (xxx=315-335, in steps of 5) 120 cells: QM182NTHCDCy-xxx-60 (xxx=360-375, in steps of 5) 120 cells: QM182NTHCDCg-xxx-60 (xxx=370-385, in steps of 5) 120 cells: QM182NTHCDCb-xxx-60 (xxx=415-430, in steps of 5) 120 cells: QM182NTHCDCi-xxx-60 (xxx=325-340, in steps of 5) 120 cells: QM182NTHCDCp-xxx-60 (xxx=360-375, in steps of 5)
108 cells: QM182THCDC-xxx-54 (xxx=245-260, 285-305, 320-345, 375- 385, in steps of 5)	108 cells: QM182NTHCDCr-xxx-54 (xxx=245-260, in steps of 5) 108 cells: QM182NTHCDCo-xxx-54 (xxx=285-300, in steps of 5) 108 cells: QM182NTHCDCy-xxx-54 (xxx=325-340, in steps of 5) 108 cells: QM182NTHCDCg-xxx-54 (xxx=335-345, in steps of 5) 108 cells: QM182NTHCDCb-xxx-54 (xxx=375-385, in steps of 5)

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Old Type	New type
	steps of 5) 108 cells: QM182NTHCDCi-xxx-54 (xxx=290-305, in steps of 5) 108 cells: QM182NTHCDCp-xxx-54 (xxx=320-340, in steps of 5)
132 cells: QM210THCD-xxx-66 (xxx=695-720, in steps of 5)	132 cells: QM210NTHCD-xxx-66 (xxx=695-725, in steps of 5)
120 cells: QM210THCD-xxx-60 (xxx=630-655, in steps of 5)	120 cells: QM210NTHCD-xxx-60 (xxx=630-655, in steps of 5)
132 cells: QM210THCD-xxx-66 (xxx=605-630, in steps of 5)	132 cells: QM210RTHCD-xxx-66 (xxx=605-630, in steps of 5)
120 cells: QM210THCD-xxx-60 (xxx=550-570, in steps of 5)	120 cells: QM210RTHCD-xxx-60 (xxx=550-570, in steps of 5)
108 cells: QM210THCD-xxx-54 (xxx=495-510, in steps of 5)	108 cells: QM210RTHCDH-xxx-54 (xxx=495-510, in steps of 5)
96 cells: QM210THCD-xxx-48 (xxx=440-455, in steps of 5)	96 cells: QM210RTHCDH-xxx-48 (xxx=440-455, in steps of 5)
156 cells: QM210RTHCD-xxx-78 (xxx=725-740, in steps of 5)	156 cells: QM210VTHCD-xxx-78 (xxx=725-740, in steps of 5)

Shenzhen, 22/01/2026
Place and Date

Shenzhen Qiming Photovoltaic Technology Co., Ltd.
Company stamp / Signature



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Declaration

To: TÜV Rheinland (Shanghai) Co., Ltd.

我司（深圳起明光伏科技有限公司）在此声明：对下列型号光伏组件的电气参数予以更新，具体内容如下表所示。特此通知。

Shenzhen Qiming Photovoltaic Technology Co., Ltd. hereby announces an update to the electrical parameters of the photovoltaic modules of the following models, as detailed in the table below, please notice!

		Old data				New data			
Type Name or Model Type (组件型号)	Maximum Power (Pmax) [W] 最大功率 (Pmax) [W]	Open Circuit Voltage (Voc) [V] 开路电压 (Voc) [V]	Short Circuit Current (Isc) [A] 短路电流 (Isc) [A]	Voltage at Maximum Power (Vmp) [V] 最大功率点的工作电压 (Vmp) [V]	Current at Maximum Power (Imp) [A] 最大功率点的工作电流 (Imp) [A]	Open Circuit Voltage (Voc) [V] 开路电压 (Voc) [V]	Short Circuit Current (Isc) [A] 短路电流 (Isc) [A]	Voltage at Maximum Power (Vmp) [V] 最大功率点的工作电压 (Vmp) [V]	Current at Maximum Power (Imp) [A] 最大功率点的工作电流 (Imp) [A]
Under STC									
QM182NTHCD-xxx-78 (xxx=610-650, in steps of 5, 156 cells)	610	55.20	14.10	45.98	13.27	55.20	14.10	45.98	13.27
	615	55.97	13.58	47.14	13.04	55.97	13.58	47.14	13.04
	620	56.06	13.64	47.32	13.11	56.06	13.64	47.32	13.11
	625	56.15	13.70	47.47	13.17	56.15	13.70	47.47	13.17
	630	56.24	13.76	47.62	13.23	56.24	13.76	47.62	13.23
	635	56.31	13.82	47.77	13.30	56.31	13.82	47.77	13.30
	640	56.39	13.88	47.92	13.36	56.39	13.88	47.92	13.36
	645	56.47	13.94	48.07	13.42	56.47	13.94	48.07	13.42
	650	56.54	14.00	48.22	13.48	56.54	14.00	48.22	13.48
QM182NTHCD-xxx-72 (xxx=565-575)	565	51.04	14.17	42.68	13.24	51.04	14.17	42.68	13.24
	570	51.86	13.48	44.49	12.82	51.86	13.48	44.49	12.82
	575	52.05	13.55	44.66	12.88	52.05	13.55	44.66	12.88

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595, in steps of 5, 144 cells)	580	52.24	13.62	44.83	12.94	52.24	13.62	44.83	12.94
	585	52.43	13.69	45.00	13.00	52.43	13.69	45.00	13.00
	590	52.63	13.75	45.17	13.06	52.63	13.75	45.17	13.06
	595	52.83	13.82	45.34	13.12	52.83	13.82	45.34	13.12
QM182NTHCD-xxx-60 (xxx=470-500, in steps of 5, 120 cells)	470	42.41	14.15	35.46	13.26	42.41	14.15	35.46	13.26
	475	42.73	13.28	37.76	12.57	42.73	13.28	37.76	12.57
	480	42.85	13.38	37.87	12.67	42.85	13.38	37.87	12.67
	485	42.97	13.48	37.98	12.77	42.97	13.48	37.98	12.77
	490	43.10	13.58	38.09	12.86	43.10	13.58	38.09	12.86
	495	43.22	13.68	38.20	12.96	43.22	13.68	38.20	12.96
	500	43.85	14.25	36.92	13.54	43.85	14.25	36.92	13.54
QM182NTHCDH-xxx-54 (xxx=425-450, in steps of 5, 108 cells)	425	39.05	13.17	34.08	12.48	39.05	13.17	34.08	12.48
	430	39.18	13.28	34.19	12.57	39.18	13.28	34.19	12.57
	435	39.31	13.39	34.30	12.68	39.31	13.39	34.30	12.68
	440	39.44	13.50	34.41	12.79	39.44	13.50	34.41	12.79
	445	39.57	13.61	34.52	12.89	39.57	13.61	34.52	12.89
	450	39.60	14.20	33.39	13.48	39.60	14.20	33.39	13.48
QM182NTHCDQ-xxx-78 QM182NTHCDZ-xxx-78 (xxx=615-650, in steps of 5, 156 cells)	615	55.97	13.58	47.14	13.04	55.97	13.58	47.14	13.04
	620	56.06	13.64	47.32	13.11	56.06	13.64	47.32	13.11
	625	56.15	13.70	47.47	13.17	56.15	13.70	47.47	13.17
	630	56.24	13.76	47.62	13.23	56.24	13.76	47.62	13.23
	635	56.31	13.82	47.77	13.30	56.31	13.82	47.77	13.30
	640	56.39	13.88	47.92	13.36	56.39	13.88	47.92	13.36
	645	56.47	13.94	48.07	13.42	56.47	13.94	48.07	13.42
	650	56.54	14.00	48.22	13.48	56.54	14.00	48.22	13.48
QM182NTHCDQ-xxx-72 QM182NTHCDZ-xxx-72 (xxx=570-595, in steps of 5, 144 cells)	570	51.86	13.48	44.49	12.82	51.86	13.48	44.49	12.82
	575	52.05	13.55	44.66	12.88	52.05	13.55	44.66	12.88
	580	52.24	13.62	44.83	12.94	52.24	13.62	44.83	12.94
	585	52.43	13.69	45.00	13.00	52.43	13.69	45.00	13.00
	590	52.63	13.75	45.17	13.06	52.63	13.75	45.17	13.06
	595	52.83	13.82	45.34	13.12	52.83	13.82	45.34	13.12
QM182NTHCDQ-xxx-60 QM182NTHCDZ-xxx-60 (xxx=475-	475	42.73	13.28	37.76	12.57	42.73	13.28	37.76	12.57
	480	42.85	13.38	37.87	12.67	42.85	13.38	37.87	12.67
	485	42.97	13.48	37.98	12.77	42.97	13.48	37.98	12.77

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500, in steps of 5, 120 cells)	490	43.10	13.58	38.09	12.86	43.10	13.58	38.09	12.86
	495	43.22	13.68	38.20	12.96	43.22	13.68	38.20	12.96
	500	43.85	14.25	36.92	13.54	43.85	14.25	36.92	13.54
QM182NTHCDQ H-xxx-54 QM182NTHCDZ H-xxx-54 (xxx=425-450, in steps of 5, 108 cells)	425	39.05	13.17	34.08	12.48	39.05	13.17	34.08	12.48
	430	39.18	13.28	34.19	12.57	39.18	13.28	34.19	12.57
	435	39.31	13.39	34.30	12.68	39.31	13.39	34.30	12.68
	440	39.44	13.50	34.41	12.79	39.44	13.50	34.41	12.79
	445	39.57	13.61	34.52	12.89	39.57	13.61	34.52	12.89
	450	39.60	14.20	33.39	13.48	39.60	14.20	33.39	13.48
QM188RTHCDH -xxx-54 (xxx = 435-450, in steps of 5, 108 cells)	435	39.65	13.96	33.31	13.06	39.65	13.96	33.31	13.06
	440	39.85	14.03	33.51	13.13	39.85	14.03	33.51	13.13
	445	40.05	14.10	33.71	13.20	40.05	14.10	33.71	13.20
	450	40.25	14.17	33.91	13.27	40.25	14.17	33.91	13.27
QM182NTHCDW -xxx-14 (xxx=105-110, in steps of 5, 28 cells)	105	10.22	13.25	8.50	12.45	10.22	13.25	8.50	12.40
	110	10.24	13.45	8.55	12.96	10.24	13.45	8.55	12.92
QM182THCDW- xxx-8 (xxx=60, 16 cells)	60	5.53	13.72	4.69	12.98	5.53	13.72	4.69	12.89
QM182NTHCDW -xxx-4 (xxx=30, 8 cells)	30	2.86	13.45	2.41	12.86	2.86	13.45	2.37	12.86
QM182NTHCDC r-xxx-78 (xxx=350-375, in steps of 5, 156 cells)	350	56.47	7.81	49.15	7.13	56.47	7.81	49.15	7.13
	355	56.48	7.91	49.16	7.23	56.48	7.91	49.16	7.23
	360	56.50	8.02	49.18	7.33	56.50	8.02	49.18	7.33
	365	56.51	8.13	49.19	7.43	56.51	8.13	49.19	7.43
	370	56.53	8.24	49.20	7.53	56.53	8.24	49.20	7.53
	375	56.55	8.35	49.22	7.63	56.55	8.35	49.22	7.62
QM182NTHCDC o-xxx-78 (xxx=410-435, in steps of 5, 156 cells)	410	56.66	9.22	49.32	8.42	56.66	9.12	49.32	8.32
	415	56.68	9.22	49.33	8.42	56.68	9.22	49.33	8.42
	420	56.69	9.33	49.35	8.52	56.69	9.33	49.35	8.52
	425	56.71	9.43	49.36	8.62	56.71	9.43	49.36	8.62
	430	56.72	9.54	49.37	8.72	56.72	9.54	49.37	8.71
	435	56.74	9.65	49.39	8.82	56.74	9.65	49.39	8.81

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QM182NTHCDC y-xxx-78 (xxx=470-490, in steps of 5, 156 cells)	470	56.85	10.41	49.49	9.51	56.85	10.41	49.49	9.50
	475	56.87	10.51	49.50	9.61	56.87	10.51	49.50	9.60
	480	56.89	10.62	49.52	9.70	56.89	10.62	49.52	9.70
	485	56.89	10.73	49.52	9.80	56.89	10.73	49.52	9.80
	490	56.90	10.84	49.53	9.90	56.90	10.84	49.53	9.90
QM182NTHCDC g-xxx-78 (xxx=480-500, in steps of 5, 156 cells)	480	56.89	10.62	49.52	9.70	56.89	10.62	49.52	9.70
	485	56.89	10.73	49.52	9.80	56.89	10.73	49.52	9.80
	490	56.90	10.84	49.53	9.90	56.90	10.84	49.53	9.90
	495	56.90	10.95	49.53	10.00	56.90	10.95	49.53	10.00
	500	56.92	11.06	49.55	10.10	56.92	11.06	49.55	10.10
QM182NTHCDC b-xxx-78 (xxx=540-560, in steps of 5, 156 cells)	540	57.05	11.91	49.66	10.88	57.05	11.91	49.66	10.88
	545	57.06	12.02	49.67	10.98	57.06	12.02	49.67	10.98
	550	57.08	12.13	49.69	11.08	57.08	12.13	49.69	11.07
	555	57.10	12.23	49.70	11.18	57.10	12.23	49.70	11.17
	560	57.11	12.34	49.72	11.27	57.11	12.34	49.72	11.27
QM182NTHCDCi -xxx-78 (xxx=425-445, in steps of 5, 156 cells)	420	56.69	9.33	49.35	8.52	56.69	9.33	49.35	8.52
	425	56.71	9.43	49.36	8.62	56.71	9.43	49.36	8.62
	430	56.72	9.54	49.37	8.72	56.72	9.54	49.37	8.71
	435	56.74	9.65	49.39	8.82	56.74	9.65	49.39	8.81
	440	56.76	9.76	49.40	8.92	56.76	9.76	49.40	8.91
	445	56.77	9.87	49.42	9.02	56.77	9.87	49.42	9.01
QM182NTHCDC p-xxx-78 (xxx=465-490, in steps of 5, 156 cells)	465	56.84	10.30	49.47	9.41	56.84	10.30	49.47	9.40
	470	56.85	10.41	49.49	9.51	56.85	10.41	49.49	9.50
	475	56.87	10.51	49.50	9.61	56.87	10.51	49.50	9.60
	480	56.89	10.62	49.52	9.70	56.89	10.62	49.52	9.70
	485	56.89	10.73	49.52	9.80	56.89	10.73	49.52	9.80
	490	56.90	10.84	49.53	9.90	56.90	10.84	49.53	9.90
QM182NTHCDC r-xxx-72 (xxx=325-345, in steps of 5, 144 cells)	325	52.33	7.82	45.02	7.23	52.33	7.82	45.02	7.23
	330	52.38	7.93	45.07	7.33	52.38	7.93	45.07	7.33
	335	52.43	8.05	45.12	7.44	52.43	8.05	45.12	7.43
	340	52.48	8.16	45.17	7.54	52.48	8.16	45.17	7.53
	345	52.51	8.27	45.20	7.64	52.51	8.27	45.20	7.64
	380	52.68	9.08	45.37	8.39	52.68	9.08	45.37	8.38

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QM182NTHCDC o-xxx-72 (xxx=380-400, in steps of 5, 144 cells)	385	52.70	9.20	45.39	8.49	52.70	9.20	45.39	8.49
	390	52.71	9.31	45.40	8.60	52.71	9.31	45.40	8.60
	395	52.73	9.43	45.42	8.71	52.73	9.43	45.42	8.70
	400	52.74	9.55	45.43	8.81	52.74	9.55	45.43	8.81
QM182NTHCDC y-xxx-72 (xxx=435-450, in steps of 5, 144 cells)	435	53.03	10.33	45.72	9.53	53.03	10.33	45.72	9.52
	440	53.06	10.44	45.75	9.63	53.06	10.44	45.75	9.62
	445	53.09	10.55	45.78	9.73	53.09	10.55	45.78	9.73
	450	53.12	10.66	45.81	9.83	53.12	10.66	45.81	9.83
QM182NTHCDC g-xxx-72 (xxx=445-460, in steps of 5, 144 cells)	445	53.09	10.55	45.78	9.73	53.09	10.55	45.78	9.73
	450	53.12	10.66	45.81	9.83	53.12	10.66	45.81	9.83
	455	53.15	10.78	45.84	9.94	53.15	10.78	45.84	9.93
	460	53.19	10.89	45.88	10.04	53.19	10.89	45.88	10.03
QM182NTHCDC b-xxx-72 (xxx=500-515, in steps of 5, 144 cells)	500	53.39	11.79	46.08	10.86	53.39	11.79	46.08	10.86
	505	53.41	11.90	46.10	10.97	53.41	11.90	46.10	10.96
	510	53.43	12.02	46.12	11.07	53.43	12.02	46.12	11.06
	515	53.44	12.13	46.13	11.17	53.44	12.13	46.13	11.17
QM182NTHCDCi -xxx-72 (xxx=390-410, in steps of 5, 144 cells)	390	52.71	9.31	45.40	8.60	52.71	9.31	45.40	8.60
	395	52.73	9.43	45.42	8.71	52.73	9.43	45.42	8.70
	400	52.74	9.55	45.43	8.81	52.74	9.55	45.43	8.81
	405	52.75	9.67	45.44	8.92	52.75	9.67	45.44	8.92
	410	52.76	9.90	45.45	9.14	52.76	9.80	45.45	9.03
QM182NTHCDC p-xxx-72 (xxx=430-450, in steps of 5, 144 cells)	430	/	/	/	/	53.01	10.21	45.70	9.42
	435	53.03	10.33	45.72	9.53	53.03	10.33	45.72	9.53
	440	53.06	10.44	45.75	9.63	53.06	10.44	45.75	9.63
	445	53.09	10.55	45.78	9.73	53.09	10.55	45.78	9.73
	450	53.12	10.66	45.81	9.83	53.12	10.66	45.81	9.83
QM182NTHCDC r-xxx-60 (xxx=270-285, in steps of 5, 120 cells)	270	44.36	7.67	36.58	7.39	44.36	7.67	36.58	7.39
	275	44.38	7.81	36.60	7.53	44.38	7.81	36.60	7.52
	280	44.40	7.94	36.62	7.66	44.40	7.94	36.62	7.65
	285	44.42	8.08	36.64	7.79	44.42	8.08	36.64	7.79
QM182NTHCDC o-xxx-60 (xxx=315-335, in	315	44.54	8.91	36.76	8.58	44.54	8.91	36.76	8.58
	320	44.56	9.04	36.78	8.71	44.56	9.04	36.78	8.71
	325	44.58	9.18	36.80	8.84	44.58	9.18	36.80	8.84

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steps of 5, 120 cells)	330	44.60	9.32	36.82	8.98	44.60	9.32	36.82	8.97
	335	44.62	9.60	36.84	9.24	44.62	9.48	36.84	9.10
QM182NTHCDC y-xxx-60 (xxx=360-375, in steps of 5, 120 cells)	360	44.72	10.14	36.94	9.76	44.72	10.14	36.94	9.75
	365	44.74	10.27	36.96	9.89	44.74	10.27	36.96	9.88
	370	44.76	10.41	36.98	10.02	44.76	10.41	36.98	10.01
	375	44.78	10.54	37.00	10.15	44.78	10.54	37.00	10.14
QM182NTHCDC g-xxx-60 (xxx=370-385, in steps of 5, 120 cells)	370	44.76	10.41	36.98	10.02	44.76	10.41	36.98	10.01
	375	44.78	10.54	37.00	10.15	44.78	10.54	37.00	10.14
	380	44.80	10.68	37.02	10.28	44.80	10.68	37.02	10.27
	385	44.82	10.82	37.04	10.41	44.82	10.82	37.04	10.40
QM182NTHCDC b-xxx-60 (xxx=415-430, in steps of 5, 120 cells)	415	44.94	11.63	37.16	11.18	44.94	11.63	37.16	11.18
	420	44.96	11.76	37.18	11.31	44.96	11.76	37.18	11.30
	425	44.98	11.89	37.21	11.44	44.98	11.89	37.21	11.43
	430	45.00	12.03	37.23	11.56	45.00	12.03	37.23	11.56
QM182NTHCDCi -xxx-60 (xxx=325-340, in steps of 5, 120 cells)	325	44.58	9.18	36.80	8.84	44.58	9.18	36.80	8.84
	330	44.60	9.32	36.82	8.98	44.60	9.32	36.82	8.97
	335	44.62	9.60	36.84	9.24	44.62	9.48	36.84	9.10
	340	44.64	9.59	36.86	9.24	44.64	9.59	36.86	9.23
QM182NTHCDC p-xxx-60 (xxx=360-375, in steps of 5, 120 cells)	360	44.72	10.14	36.94	9.76	44.72	10.14	36.94	9.75
	365	44.74	10.27	36.96	9.89	44.74	10.27	36.96	9.88
	370	44.76	10.41	36.98	10.02	44.76	10.41	36.98	10.01
	375	44.78	10.54	37.00	10.15	44.78	10.54	37.00	10.14
QM182NTHCDC r-xxx-54 (xxx=245-260, in steps of 5, 108 cells)	245	39.88	7.74	33.82	7.26	39.88	7.74	33.82	7.25
	250	39.90	7.90	33.84	7.40	39.90	7.90	33.84	7.40
	255	39.92	8.05	33.86	7.55	39.92	8.05	33.86	7.54
	260	39.94	8.20	33.88	7.69	39.94	8.20	33.88	7.68
QM182NTHCDC o-xxx-54 (xxx=285-300, in steps of 5, 108 cells)	285	40.04	8.97	33.98	8.40	40.04	8.97	33.98	8.40
	290	40.06	9.12	34.00	8.54	40.06	9.12	34.00	8.54
	295	40.08	9.27	34.02	8.69	40.08	9.27	34.02	8.68
	300	40.10	9.42	34.04	8.83	40.10	9.42	34.04	8.82
QM182NTHCDC y-xxx-54 (xxx=325-340, in	325	40.20	10.18	34.14	9.53	40.20	10.18	34.14	9.53
	330	40.22	10.33	34.16	9.67	40.22	10.33	34.16	9.67
	335	40.24	10.48	34.18	9.82	40.24	10.48	34.18	9.81

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steps of 5, 108 cells)	340	40.26	10.64	34.20	9.96	40.26	10.64	34.20	9.95
QM182NTHCDC g-xxx-54 (xxx=335-345, in steps of 5, 108 cells)	335	40.24	10.48	34.18	9.82	40.24	10.48	34.18	9.81
	340	40.26	10.64	34.20	9.96	40.26	10.64	34.20	9.95
	345	40.28	10.79	34.22	10.10	40.28	10.79	34.22	10.09
QM182NTHCDC b-xxx-54 (xxx=375-385, in steps of 5, 108 cells)	375	40.40	11.69	34.34	10.93	40.40	11.69	34.34	10.93
	380	40.42	11.84	34.36	11.07	40.42	11.84	34.36	11.07
	385	40.44	11.99	34.38	11.21	40.44	11.99	34.38	11.21
QM182NTHCDCi -xxx-54 (xxx=290-305, in steps of 5, 108 cells)	290	40.06	9.12	34.00	8.54	40.06	9.12	34.00	8.54
	295	40.08	9.27	34.02	8.69	40.08	9.27	34.02	8.68
	300	40.10	9.42	34.04	8.83	40.10	9.42	34.04	8.82
	305	40.12	9.58	34.06	8.97	40.12	9.58	34.06	8.96
QM182NTHCDC p-xxx-54 (xxx=320-340, in steps of 5, 108 cells)	320	40.18	10.03	34.12	9.39	40.18	10.03	34.12	9.39
	325	40.20	10.18	34.14	9.53	40.20	10.18	34.14	9.53
	330	40.22	10.33	34.16	9.67	40.22	10.33	34.16	9.67
	335	40.24	10.48	34.18	9.82	40.24	10.48	34.18	9.81
	340	40.26	10.64	34.20	9.96	40.26	10.64	34.20	9.95
QM210NTHCD- xxx-66 (xxx=695- 725, in steps of 5, 132 cells)	695	48.30	18.28	40.30	17.25	48.30	18.28	40.30	17.25
	700	48.60	18.32	40.50	17.29	48.60	18.32	40.50	17.29
	705	48.80	18.36	40.70	17.33	48.80	18.36	40.70	17.33
	710	49.00	18.40	40.90	17.36	49.00	18.40	40.90	17.36
	715	49.20	18.44	41.10	17.40	49.20	18.44	41.10	17.40
	720	49.40	18.49	41.30	17.44	49.40	18.49	41.30	17.44
	725	49.60	18.53	41.50	17.48	49.60	18.53	41.50	17.48
QM210NTHCD- xxx-60 (xxx=630- 655, in steps of 5, 120 cells)	630	43.90	18.24	36.60	17.22	43.90	18.24	36.60	17.22
	635	44.20	18.27	36.80	17.26	44.20	18.27	36.80	17.26
	640	44.50	18.30	37.00	17.30	44.50	18.30	37.00	17.30
	645	44.80	18.33	37.20	17.34	44.80	18.33	37.20	17.34
	650	45.10	18.36	37.40	17.38	45.10	18.36	37.40	17.38
	655	45.40	18.39	37.60	17.43	45.40	18.39	37.60	17.43
QM210RTHCD- xxx-66 (xxx=605- 615)	605	48.70	15.83	40.50	14.94	48.70	15.83	40.50	14.94
	610	49.00	15.86	40.80	14.96	49.00	15.86	40.80	14.96
	615	49.30	15.89	41.10	14.98	49.30	15.89	41.10	14.97

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630, in steps of 5, 132 cells)	620	49.60	15.91	41.40	14.99	49.60	15.91	41.40	14.98
	625	49.90	15.92	41.70	15.00	49.90	15.92	41.70	14.99
	630	50.20	15.93	42.00	15.01	50.20	15.93	42.00	15.01
QM210RTHCD-xxx-60 (xxx=550-570, in steps of 5, 120 cells)	550	44.00	15.93	35.30	15.58	44.00	15.93	35.30	15.58
	555	44.30	15.96	35.50	15.63	44.30	15.96	35.50	15.63
	560	44.60	15.99	35.70	15.69	44.60	15.99	35.70	15.69
	565	44.90	16.03	35.90	15.74	44.90	16.03	35.90	15.74
	570	45.20	16.06	36.10	15.79	45.20	16.06	36.10	15.79
QM210RTHCDH-xxx-54 (xxx=495-510, in steps of 5, 108 cells)	495	39.80	15.81	32.85	15.07	39.80	15.81	32.85	15.07
	500	40.00	15.88	33.05	15.13	40.00	15.88	33.05	15.13
	505	40.20	15.95	33.25	15.19	40.20	15.95	33.25	15.19
	510	40.40	16.02	33.45	15.25	40.40	16.02	33.45	15.25
QM210RTHCDH-xxx-48 (xxx=440-455, in steps of 5, 96 cells)	440	34.98	15.98	29.50	14.92	34.98	15.98	29.50	14.92
	445	35.19	16.06	29.70	14.99	35.19	16.06	29.70	14.99
	450	35.40	16.14	29.90	15.06	35.40	16.14	29.90	15.06
	455	35.59	16.22	30.10	15.12	35.59	16.22	30.10	15.12
QM210VTHCD-xxx-78 (xxx=725-740, in steps of 5, 156 cells)	725	57.70	16.00	48.38	14.99	57.70	16.00	48.38	14.99
	730	57.90	16.05	48.55	15.04	57.90	16.05	48.55	15.04
	735	58.10	16.10	48.71	15.09	58.10	16.10	48.71	15.09
	740	58.27	16.16	48.88	15.14	58.27	16.16	48.88	15.14
Under BNPI									
QM182NTHCD-xxx-78 (xxx=675-715, in steps of 5, 156 cells)	675	55.60	15.52	46.38	14.55	55.60	15.52	46.38	14.55
	680	55.75	15.69	47.29	14.34	55.75	15.69	47.30	14.38
	685	55.90	15.72	47.38	14.39	55.90	15.72	47.40	14.45
	690	56.05	15.75	47.47	14.44	56.05	15.75	47.50	14.52
	695	56.20	15.78	47.56	14.49	56.20	15.78	47.60	14.60
	700	56.35	15.83	47.64	14.54	56.35	15.83	47.70	14.67
	705	56.50	15.89	47.73	14.59	56.50	15.89	47.80	14.75
	710	56.65	15.92	47.82	14.64	56.65	15.92	47.90	14.82
	715	56.80	15.95	48.01	14.71	56.80	15.95	48.00	14.89
QM182NTHCD-xxx-72 (xxx=625-655, in steps of 5, 144 cells)	625	51.08	15.60	43.08	14.51	51.08	15.60	43.08	14.51
	630	52.08	15.12	43.74	14.41	52.08	15.12	43.74	14.41
	635	52.24	15.21	43.88	14.48	52.24	15.21	43.88	14.48
	640	52.39	15.30	44.03	14.55	52.39	15.30	44.03	14.54

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	645	52.54	15.38	44.17	14.62	52.54	15.38	44.17	14.61
	650	52.68	15.47	44.30	14.69	52.68	15.47	44.30	14.68
	655	52.83	15.56	44.45	14.75	52.83	15.56	44.45	14.74
QM182NTHCD- xxx-60 (xxx=520- 550, in steps of 5, 120 cells)	520	42.77	15.57	35.82	14.52	42.77	15.57	35.82	14.52
	525	43.25	15.18	36.34	14.45	43.25	15.18	36.34	14.45
	530	43.42	15.27	36.38	14.55	43.42	15.27	36.38	14.56
	535	43.56	15.38	36.55	14.65	43.56	15.38	36.55	14.65
	540	43.72	15.48	36.65	14.75	43.72	15.48	36.65	14.74
	545	43.86	15.59	36.75	14.85	43.86	15.59	36.75	14.84
	550	44.02	15.69	36.85	14.95	44.02	15.69	36.85	14.93
QM182NTHCDH -xxx-54 (xxx=470-495, in steps of 5, 108 cells)	470	39.01	15.05	32.74	14.36	39.01	15.05	32.74	14.36
	475	39.15	15.18	32.89	14.45	39.15	15.18	32.89	14.45
	480	39.29	15.30	33.05	14.55	39.29	15.30	33.05	14.53
	485	39.46	15.41	33.16	14.65	39.46	15.41	33.16	14.64
	490	39.60	15.53	33.27	14.75	39.60	15.53	33.27	14.74
	495	39.76	15.64	33.38	14.85	39.76	15.64	33.38	14.84
QM182NTHCDQ -xxx-78 QM182NTHCDZ- xxx-78 (xxx=680- 715, in steps of 5, 156 cells)	680	55.75	15.69	47.29	14.34	47.29	14.34	47.30	14.38
	685	55.90	15.72	47.38	14.39	47.38	14.39	47.40	14.45
	690	56.05	15.75	47.47	14.44	47.47	14.44	47.50	14.52
	695	56.20	15.78	47.56	14.49	47.56	14.49	47.60	14.60
	700	56.35	15.83	47.64	14.54	47.64	14.54	47.70	14.67
	705	56.50	15.89	47.73	14.59	47.73	14.59	47.80	14.75
	710	56.65	15.92	47.82	14.64	47.82	14.64	47.90	14.82
	715	56.80	15.95	48.01	14.71	48.01	14.71	48.00	14.89
QM182NTHCDQ -xxx-72 QM182NTHCDZ- xxx-72 (xxx=630- 655, in steps of 5, 144 cells)	630	52.08	15.12	43.74	14.41	43.74	14.41	43.74	14.41
	635	52.24	15.21	43.88	14.48	43.88	14.48	43.88	14.48
	640	52.39	15.30	44.03	14.55	52.39	15.30	44.03	14.54
	645	52.54	15.38	44.17	14.62	52.54	15.38	44.17	14.61
	650	52.68	15.47	44.30	14.69	52.68	15.47	44.30	14.68
	655	52.83	15.56	44.45	14.75	52.83	15.56	44.45	14.74
QM182NTHCDQ -xxx-60 QM182NTHCDZ- xxx-60 (xxx=525-550, in	525	43.25	15.18	36.34	14.45	43.25	15.18	36.34	14.45
	530	43.42	15.27	36.38	14.55	43.42	15.27	36.38	14.56
	535	43.56	15.38	36.55	14.65	43.56	15.38	36.55	14.65
	540	43.72	15.48	36.65	14.75	43.72	15.48	36.65	14.74

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steps of 5, 120 cells)	545	43.86	15.59	36.75	14.85	43.86	15.59	36.75	14.84
	550	44.02	15.69	36.85	14.95	44.02	15.69	36.85	14.93
QM182NTHCDQ H-xxx-54 QM182NTHCDZ H-xxx-54 (xxx=470-495, in steps of 5, 108 cells)	470	39.01	15.05	32.74	14.36	39.01	15.05	32.74	14.36
	475	39.15	15.18	32.89	14.45	39.15	15.18	32.89	14.45
	480	39.29	15.30	33.05	14.55	39.29	15.30	33.05	14.53
	485	39.46	15.41	33.16	14.65	39.46	15.41	33.16	14.64
	490	39.60	15.53	33.27	14.75	39.60	15.53	33.27	14.74
	495	39.76	15.64	33.38	14.85	39.76	15.64	33.38	14.84
QM188RTHCDH -xxx-54 (xxx = 481,486,492,497 , 108 cells)	481	39.65	15.36	33.31	14.44	39.65	15.36	33.31	14.44
	486	39.85	15.44	33.51	14.50	39.85	15.44	33.51	14.50
	492	40.05	15.51	33.71	14.60	40.05	15.51	33.71	14.60
	497	40.25	15.59	33.91	14.66	40.25	15.59	33.91	14.66
QM182THCDW- xxx-14 (xxx=115- 120, in steps of 5, 28 cells)	115	10.40	14.33	8.60	13.47	10.40	14.33	8.60	13.43
	120	10.59	14.40	8.65	13.98	10.59	14.40	8.65	13.93
QM182THCDW- xxx-8 (xxx=68, 16 cells)	68	6.15	13.82	5.22	13.08	6.15	13.82	5.22	13.08
QM182THCDW- xxx-4 (xxx=35, 8 cells)	35	3.20	13.52	2.73	12.96	3.20	13.52	2.73	12.96
QM182NTHCDC r-xxx-78 (xxx=390-415, in steps of 5, 156 cells)	390	57.83	8.51	50.64	7.72	57.83	8.51	50.64	7.71
	395	57.85	8.60	50.65	7.81	57.85	8.60	50.65	7.80
	400	57.86	8.70	50.66	7.91	57.86	8.70	50.66	7.90
	405	57.88	8.81	50.68	8.00	57.88	8.81	50.68	8.00
	410	57.90	8.92	50.69	8.10	57.90	8.92	50.69	8.09
	415	57.91	9.02	50.71	8.19	57.91	9.02	50.71	50.71
QM182NTHCDC o-xxx-78 (xxx=460-485, in steps of 5, 156 cells)	460	58.06	9.97	50.83	9.06	58.06	9.97	50.83	9.05
	465	58.07	10.08	50.85	9.15	58.07	10.08	50.85	9.15
	470	58.09	10.18	50.86	9.25	58.09	10.18	50.86	9.25
	475	58.11	10.29	50.88	9.35	58.11	10.29	50.88	9.34
	480	58.12	10.40	50.89	9.44	58.12	10.40	50.89	9.44
	485	58.14	10.50	50.90	9.54	58.14	10.50	50.90	9.53
QM182NTHCDC y-xxx-78	520	58.22	11.24	50.98	10.21	58.22	11.24	50.98	10.21
	525	58.24	11.35	50.99	10.31	58.24	11.35	50.99	10.31

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(xxx=520-540, in steps of 5, 156 cells)	530	58.25	11.45	51.00	10.40	58.25	11.45	51.00	10.40
	535	58.27	11.56	51.02	10.50	58.27	11.56	51.02	10.50
	540	58.28	11.66	51.03	10.59	58.28	11.66	51.03	10.59
QM182NTHCDC g-xxx-78 (xxx=530-550, in steps of 5, 156 cells)	530	58.25	11.45	51.00	10.40	58.25	11.45	51.00	10.40
	535	58.27	11.56	51.02	10.50	58.27	11.56	51.02	10.50
	540	58.28	11.66	51.03	10.59	58.28	11.66	51.03	10.59
	545	/	/	/	/	58.30	11.77	51.05	10.68
	550	58.32	11.87	51.06	10.78	58.32	11.87	51.06	10.78
	555	58.33	11.97	51.07	10.88	Remo ved	remov ed	remov ed	remove d
QM182NTHCDC b-xxx-78 (xxx=590-610, in steps of 5, 156 cells)	590	58.45	12.70	51.17	11.54	58.45	12.70	51.17	11.53
	595	58.46	12.81	51.19	11.63	58.46	12.81	51.19	11.63
	600	58.48	12.91	51.20	11.73	58.48	12.91	51.20	11.72
	605	58.49	13.02	51.22	11.82	58.49	13.02	51.22	11.82
	610	58.51	13.12	51.22	11.92	58.51	13.12	51.22	11.91
QM182NTHCDC i-xxx-78 (xxx=470-495, in steps of 5, 156 cells)	470	58.09	10.18	50.86	9.25	58.09	10.18	50.86	9.25
	475	58.11	10.29	50.88	9.35	58.11	10.29	50.88	9.34
	480	58.12	10.40	50.89	9.44	58.12	10.40	50.89	9.44
	485	58.14	10.50	50.90	9.54	58.14	10.50	50.90	9.53
	490	58.15	10.61	50.92	9.63	58.15	10.61	50.92	9.63
	495	58.17	10.71	50.93	9.73	58.17	10.71	50.93	9.72
QM182NTHCDC p-xxx-78 (xxx=515-540, in steps of 5, 156 cells)	515	58.20	11.14	50.96	10.12	58.20	11.14	50.96	10.11
	520	58.22	11.24	50.98	10.21	58.22	11.24	50.98	10.20
	525	58.24	11.35	50.99	10.31	58.24	11.35	50.99	10.30
	530	58.25	11.45	51.00	10.40	58.25	11.45	51.00	10.40
	535	58.27	11.56	51.02	10.50	58.27	11.56	51.02	10.49
	540	58.28	11.66	51.03	10.59	58.28	11.66	51.03	10.59
QM182NTHCDC r-xxx-72 (xxx=360-380, in steps of 5, 144 cells)	360	52.61	8.62	45.30	7.96	52.61	8.62	45.30	7.95
	365	52.63	8.73	45.32	8.06	52.63	8.73	45.32	8.06
	370	52.66	8.85	45.35	8.17	52.66	8.85	45.35	8.16
	375	52.67	8.96	45.36	8.28	52.67	8.96	45.36	8.27
	380	52.68	9.08	45.37	8.39	52.68	9.08	45.37	8.38
QM182NTHCDC o-xxx-72	425	52.94	10.11	45.63	9.32	52.94	10.11	45.63	9.32
	430	53.01	10.21	45.70	9.42	53.01	10.21	45.70	9.42

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(xxx=425-445, in steps of 5, 144 cells)	435	53.03	10.33	45.72	9.53	53.03	10.33	45.72	9.52
	440	53.06	10.44	45.75	9.63	53.06	10.44	45.75	9.62
	445	53.09	10.55	45.78	9.73	53.09	10.55	45.78	9.73
QM182NTHCDC y-xxx-72 (xxx=475-490, in steps of 5, 144 cells)	475	53.31	11.22	46.00	10.34	53.31	11.22	46.00	10.33
	480	53.36	11.32	46.05	10.43	53.36	11.32	46.05	10.43
	485	53.36	11.44	46.05	10.54	53.36	11.44	46.05	10.54
	490	53.37	11.56	46.06	10.65	53.37	11.56	46.06	10.64
QM182NTHCDC g-xxx-72 (xxx=485-500, in steps of 5, 144 cells)	485	53.36	11.44	46.05	10.54	53.36	11.44	46.05	10.54
	490	53.37	11.56	46.06	10.65	53.37	11.56	46.06	10.64
	495	53.38	11.67	46.07	10.76	53.38	11.67	46.07	10.75
	500	/	/	/	/	53.39	11.79	46.08	10.86
	510	53.43	12.02	46.12	11.07	remov ed	remov ed	remov ed	remov ed
QM182NTHCDC b-xxx-72 (xxx=545-560, in steps of 5, 144 cells)	545	53.55	12.81	46.25	11.79	53.55	12.81	46.25	11.79
	550	53.57	12.92	46.27	11.90	53.57	12.92	46.27	11.89
	555	53.57	13.04	46.28	12.00	53.57	13.04	46.28	12.00
	560	53.59	13.15	46.29	12.11	53.59	13.15	46.29	12.10
QM182NTHCDC i-xxx-72 (xxx=435-455, in steps of 5, 144 cells)	435	53.03	10.33	45.72	9.53	53.03	10.33	45.72	9.52
	440	53.06	10.44	45.75	9.63	53.06	10.44	45.75	9.62
	445	53.09	10.55	45.78	9.73	53.09	10.55	45.78	9.73
	450	/	/	/	/	53.12	10.66	45.81	9.83
	455	53.15	10.78	45.84	9.94	53.15	10.78	45.84	9.94
	460	53.19	10.89	45.88	10.04	remov ed	remov ed	remov ed	remov ed
QM182NTHCDC p-xxx-72 (xxx=470-490, in steps of 5, 144 cells)	470	/	/	/	/	53.27	11.11	45.96	10.23
	475	53.31	11.22	46.00	10.34	53.31	11.22	46.00	10.33
	480	53.36	11.32	46.05	10.43	53.36	11.32	46.05	10.43
	485	53.36	11.44	46.05	10.54	53.36	11.44	46.05	10.54
	490	53.37	11.56	46.06	10.65	53.37	11.56	46.06	10.64
QM182NTHCDC r-xxx-60 (xxx=300-315, in steps of 5, 120 cells)	300	44.48	8.49	36.70	8.19	44.48	8.49	36.70	8.18
	305	44.50	8.63	36.72	8.32	44.50	8.63	36.72	8.31
	310	44.52	8.77	36.74	8.45	44.52	8.77	36.74	8.45
	315	44.54	8.91	36.76	8.58	44.54	8.91	36.76	8.58
	355	44.70	10.00	36.92	9.63	44.70	10.00	36.92	9.62

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QM182NTHCDC o-xxx-60 (xxx=355-375, in steps of 5, 120 cells)	360	44.72	10.14	36.94	9.76	44.72	10.14	36.94	9.75
	365	44.74	10.27	36.96	9.89	44.74	10.27	36.96	9.88
	370	44.76	10.41	36.98	10.02	44.76	10.41	36.98	10.01
	375	44.78	10.54	37.00	10.15	44.78	10.54	37.00	10.14
QM182NTHCDC y-xxx-60 (xxx=395-410, in steps of 5, 120 cells)	395	44.86	11.09	37.08	10.67	44.86	11.09	37.08	10.66
	400	44.88	11.22	37.10	10.79	44.88	11.22	37.10	10.79
	405	44.90	11.36	37.12	10.92	44.90	11.36	37.12	10.92
	410	44.92	11.49	37.14	11.05	44.92	11.49	37.14	11.05
QM182NTHCDC g-xxx-60 (xxx=405-420, in steps of 5, 120 cells)	405	44.90	11.36	37.12	10.92	44.90	11.36	37.12	10.92
	410	44.92	11.49	37.14	11.05	44.92	11.49	37.14	11.05
	415	44.94	11.63	37.16	11.18	44.94	11.63	37.16	11.18
	420	/	/	/	/	44.96	11.76	37.18	11.30
	430	45.00	12.03	37.23	11.56	remov ed	remov ed	remov ed	remove d
QM182NTHCDC b-xxx-60 (xxx=455-470, in steps of 5, 120 cells)	455	45.10	12.70	37.33	12.20	45.10	12.70	37.33	12.20
	460	45.12	12.83	37.35	12.33	45.12	12.83	37.35	12.32
	465	45.14	12.97	37.37	12.46	45.14	12.97	37.37	12.45
	470	45.16	13.10	37.39	12.58	45.16	13.10	37.39	12.58
QM182NTHCDCi -xxx-60 (xxx=365-380, in steps of 5, 120 cells)	365	44.74	10.27	36.96	9.89	44.74	10.27	36.96	9.88
	370	44.76	10.41	36.98	10.02	44.76	10.41	36.98	10.01
	375	44.78	10.54	37.00	10.15	44.78	10.54	37.00	10.14
	380	44.78	10.54	37.00	10.15	44.80	10.68	37.02	10.27
QM182NTHCDC p-xxx-60 (xxx=395-410, in steps of 5, 120 cells)	395	44.86	11.09	37.08	10.67	44.86	11.09	37.08	10.66
	400	44.88	11.22	37.10	10.79	44.88	11.22	37.10	10.79
	405	44.90	11.36	37.12	10.92	44.90	11.36	37.12	10.92
	410	44.92	11.49	37.14	11.05	44.92	11.49	37.14	11.05
QM182NTHCDC r-xxx-54 (xxx=275-290, in steps of 5, 108 cells)	275	40.00	8.66	33.94	8.12	40.00	8.66	33.94	8.11
	280	40.02	8.81	33.96	8.26	40.02	8.81	33.96	8.25
	285	40.04	8.97	33.98	8.40	40.04	8.97	33.98	8.40
	290	40.06	9.12	34.00	8.54	40.06	9.12	34.00	8.54
QM182NTHCDC o-xxx-54 (xxx=315-330, in steps of 5, 108 cells)	315	40.16	9.88	34.10	9.25	40.16	9.88	34.10	9.25
	320	40.18	10.03	34.12	9.39	40.18	10.03	34.12	9.39
	325	40.20	10.18	34.14	9.53	40.20	10.18	34.14	9.53
	330	40.22	10.33	34.16	9.67	40.22	10.33	34.16	9.67

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QM182NTHCDC y-xxx-54 (xxx=360-375, in steps of 5, 108 cells)	360	40.34	11.24	34.28	10.52	40.34	11.24	34.28	10.51
	365	40.36	11.39	34.30	10.66	40.36	11.39	34.30	10.65
	370	40.38	11.54	34.32	10.80	40.38	11.54	34.32	10.79
	375	40.40	11.69	34.34	10.93	40.40	11.69	34.34	10.93
QM182NTHCDC g-xxx-54 (xxx=370-380, in steps of 5, 108 cells)	370	40.38	11.54	34.32	10.80	40.38	11.54	34.32	10.79
	375	40.40	11.69	34.34	10.93	40.40	11.69	34.34	10.93
	380	40.42	11.84	34.36	11.07	40.42	11.84	34.36	11.07
QM182NTHCDC b-xxx-54 (xxx=410-420, in steps of 5, 108 cells)	410	40.54	12.73	34.48	11.90	40.54	12.73	34.48	11.90
	415	40.56	12.88	34.50	12.04	40.56	12.88	34.50	12.04
	420	40.58	13.03	34.52	12.18	40.58	13.03	34.52	12.18
QM182NTHCDCi -xxx-54 (xxx=320-335, in steps of 5, 108 cells)	320	40.18	10.03	34.12	9.39	40.18	10.03	34.12	9.39
	325	40.20	10.18	34.14	9.53	40.20	10.18	34.14	9.53
	330	40.22	10.33	34.16	9.67	40.22	10.33	34.16	9.67
	335	40.24	10.48	34.18	9.82	40.24	10.48	34.18	9.81
QM182NTHCDC p-xxx-54 (xxx=355-375, in steps of 5, 108 cells)	355	40.32	11.09	34.26	10.38	40.32	11.09	34.26	10.37
	360	40.34	11.24	34.28	10.52	40.34	11.24	34.28	10.51
	365	40.36	11.39	34.30	10.66	40.36	11.39	34.30	10.65
	370	40.38	11.54	34.32	10.80	40.38	11.54	34.32	10.79
	375	40.40	11.69	34.34	10.93	40.40	11.69	34.34	10.93
QM210NTHCD- xxx-66 (xxx=770- 800, in steps of 5, 121 cells)	770	48.64	20.07	40.64	18.95	48.64	20.07	40.64	18.95
	775	48.94	20.11	40.84	18.98	48.94	20.11	40.84	18.98
	780	49.14	20.16	41.04	18.99	49.14	20.16	41.04	19.00
	785	49.35	20.20	41.25	19.03	49.35	20.20	41.25	19.03
	790	49.55	20.24	41.45	19.06	49.55	20.24	41.45	19.06
	795	49.75	20.30	41.65	19.09	49.75	20.30	41.65	19.09
	800	49.95	20.36	41.85	19.12	49.95	20.36	41.85	19.12
	800	49.95	20.36	41.85	19.12	49.95	20.36	41.85	19.12
QM210NTHCD- xxx-60 (xxx=690- 715, in steps of 5, 120 cells)	690	47.77	20.02	36.91	18.69	45.87	19.32	36.91	18.69
	695	48.10	20.06	37.11	18.73	46.20	19.36	37.11	18.73
	700	48.43	20.09	37.31	18.76	46.53	19.39	37.31	18.76
	705	48.75	20.12	37.52	18.79	46.85	19.42	37.52	18.79
	710	49.08	20.16	37.72	18.82	47.18	19.46	37.72	18.82

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	715	49.41	20.19	37.92	18.86	47.51	19.48	37.92	18.86
QM210RTHCD -xxx-66 (xxx=670-695, in steps of 5, 132 cells)	670	49.04	17.38	40.84	16.39	49.04	17.38	40.84	16.40
	675	49.35	17.41	41.15	16.40	49.35	17.41	41.15	16.40
	680	49.65	17.44	41.45	16.41	49.65	17.44	41.45	16.41
	685	49.95	17.47	41.75	16.41	49.95	17.47	41.75	16.41
	690	50.25	17.48	42.05	16.42	50.25	17.48	42.05	16.42
	695	50.55	17.49	42.36	16.42	50.55	17.49	42.35	16.42
QM210RTHCD -xxx-60 (xxx=605-625, in steps of 5, 120 cells)	605	44.51	17.38	35.60	16.99	44.51	17.38	35.60	16.99
	610	44.81	17.47	35.81	17.04	44.81	17.47	35.81	17.04
	615	45.11	17.55	36.01	17.08	45.11	17.55	36.01	17.08
	620	45.42	17.62	36.21	17.12	45.42	17.62	36.21	17.12
	625	45.72	17.71	36.41	17.17	45.72	17.71	36.41	17.17
QM210RTHCD H-xxx-54 (xxx=545-560, in steps of 5, 108 cells)	545	40.08	17.36	33.13	16.45	40.08	17.36	33.13	16.45
	550	40.28	17.44	33.33	16.50	40.28	17.44	33.33	16.50
	555	40.48	17.51	33.54	16.55	40.48	17.51	33.54	16.55
	560	40.68	17.59	33.74	16.60	40.68	17.59	33.74	16.60
QM210RTHCD H-xxx48 (xxx=485-500, in steps of 5, 96 cells)	485	35.22	17.55	29.75	16.30	35.22	17.55	29.75	16.30
	490	35.44	17.63	29.96	16.36	35.44	17.63	29.96	16.36
	495	35.65	17.72	30.16	16.41	35.65	17.72	30.16	16.41
	500	35.84	17.81	30.36	16.47	35.84	17.81	30.36	16.47
QM210VTHCD -xxx-78 (xxx=801,808,8 14,808, 156 cells)	801	57.98	17.73	48.67	16.50	57.98	17.73	48.62	16.47
	808	58.15	17.78	48.84	16.56	58.15	17.78	48.82	16.55
	814	58.35	17.84	49.01	16.62	58.35	17.84	49.02	16.61
	818	58.52	17.91	49.18	16.68	58.52	17.91	49.18	16.64

Shenzhen, 22/01/2026
Place and Date

Shenzhen Qiming Photovoltaic Technology Co., Ltd.
Company stamp / Signature



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供应商信息更正声明

Declaration of Supplier Information Correction

特此声明，因之前证书中，供应商名称存在填写错误，现予以更正。

We hereby declare that the supplier name stated in the previous certificate was incorrectly entered and is now rectified.

特此将合作方由永臻科技（苏州）有限公司更正为永臻科技股份有限公司。

The cooperative entity is hereby rectified from [Suzhou Yonz Technology Co., Ltd.] to [Yongz Technology Co., LTD.].

作为我方合作伙伴，永臻科技股份有限公司始终执行其公司内部统一的技术标准、质量管理体系与生产管控要求，包括对生产设备、制造工艺、原材料（合金型号与化学成分）、涂层工艺及厚度等实施严格管理，所供产品的质量与规格保持完全一致。

As our cooperating partner, Yongz Technology Co., LTD. has consistently implemented its unified internal technical standards, quality management system, and production control requirements. This includes stringent management of production equipment, manufacturing processes, raw materials (alloy designation and chemical compositions), coating process and coating thickness, etc. The quality and specifications of the supplied products remain fully consistent. Hereby declare!

深圳起明光伏科技有限公司

Shenzhen Qiming Photovoltaic Technology Co., Ltd.

签字及盖章 (Signature & Seal)

日期 (Date)

陈永臻

2026.11.22



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上海回天新材料有限公司

地址: 上海市松江区文吉路 251 号

电话: 021—57743399 传真: 021—37740088

上海回天新材料有限公司

一致性声明

Consistency Statement

上海回天新材料有限公司生产的 HT906Z 产品, 与湖北回天新材料有限公司生产的 HT906Z 产品, 以上公司在相同的质量体系下, 均采用同标准对生产设备、工艺、原材料、产品配方和产品质量进行管控, 所生产的 HT906Z 产品性能一致, 特此申明。

The HT906Z products produced by Shanghai Huitian New Material Co., Ltd., and the HT906Z products produced by Hubei Huitian New Materials Co., Ltd., the above company under the same quality system, using the same standard of production equipment, technology raw materials, product formula and product quality control, the production of HT906Z product performance, hereby declare!



上海回天新材料有限公司

Shanghai Huitian New Material Co., Ltd

湖北回天新材料有限公司

Hubei Huitian New Materials Co., Ltd

2025 年 8 月 21 日

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BUILDING TRUST

RENAMING OF CV/CREVO SOLAR PRODUCTS
原创景太阳能市场 CV/CREVO 系列产品更名通知

Dear Sir or Madam,
尊敬的先生/女士,

To simplify and optimize the nomenclature of Sika product range we would like to inform you that starting from Jan.1st, 2024, original CV/CREVO silicone products will be relaunched under the new Sika brand name Sikasil® with redesigned packaging. This change won't influence the products' performance as because neither the formulation nor the production site be changed.

自 2024 年 1 月 1 日起, 原 CV/CREVO 系列硅酮产品将正式更名为 Sikasil®, 并启用全新包装。本变更只是出于西卡总部对产品线优化管理的考虑, 原有配方、产地和性能等保持不变。

New product portfolios includes:

不同的胶粘剂体系以及不同的混合比例将启用不同的产品牌号 (参考下表)。

Current Product Name 原有产品名称	New Product Name 更改后产品名称	Comment 注释
CV-709	Sikasil® AS-165	Frame sealant-oxime silicone 边框密封胶-脱肟型硅胶
CV-315(5:1)	Sikasil® AS-747 SL	Potting sealant-5:1 mixing ratio 灌封胶-5:1 配比

During the switching phase, new and old packaging will appear in the market at the same time for a period of time.

切换期间, 新旧包装会同时出现在市场一段时间。

Sincerely,

Thank you again for your trust in Sika silicone products over the years and apologize for the impact you may have had on the above product name changes.

If you still have questions about the above instructions, please call your sika representatives for more information.

再次感谢您多年来对西卡硅酮胶产品的信赖, 并对以上产品名称变动对您可能造成的影响表示歉意。

如对以上说明仍有疑问, 请致电您的西卡联系人。

Jeffery Chen
Target Market Manager
目标市场经理

Emily Ji
Product Management Manager
产品管理经理



DISCLAIMER:

The information contained herein and any other advice are given in good faith based on Sika's current knowledge and experience of the products when properly stored, handled and applied under normal conditions in accordance with Sika's recommendations. The information only applies to the application(s) and product(s) expressly referred to herein. In case of changes in the parameters of the application, such as changes in substrates etc., or in case of a different application, consult Sika's Technical Service prior to using Sika products. The information contained herein does not relieve the user of the products from testing them for the intended application and purpose. All orders are accepted subject to our current terms of sale and delivery. Users must always refer to the most recent issue of the local Product Data Sheet for the product concerned, copies of which will be supplied on request.

免责声明:

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ANLAGE zum Prüfbericht-Nr.: CN26Q2T9 001
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ZUSATZ-DOKUMENTATION
ADDITIONAL DOCUMENTATION



苏州天山新材料技术有限公司
之
业务迁转
通 知 函

尊敬的客户:

感谢贵司多年来对我司的业务惠顾! 为配合苏州市完成有关政策性搬迁的要求, 我司拟自 2022 年 10 月 1 日起终止经营, 并在向我姊妹公司富乐(苏州)新材料有限公司(“富乐苏州”)划转全部资产和人员后于 2023 年 1 月 1 日进入企业注销程序, 故对向贵司供货的有关业务, 将迁转至富乐苏州继续承接。

贵司可自 2022 年 7 月 1 日起开始向富乐苏州直接下单订货。对贵司在 2022 年 7 月 1 日前已下订单并完成开票的业务, 请贵司尽快在 2022 年 12 月 31 日前支付。对截至 2022 年 12 月 31 日已完成开票但尚未从贵司收到全款的应收帐款, 将作为我司的债权转至富乐苏州向贵司继续收款。

富乐苏州的联络信息及银行帐户如下:

全名: 富乐(苏州)新材料有限公司

地址: 苏州市吴中经济开发区河东工业园善富路 333 号 1 幢

税 号: 91320506MA1XCYPJH7P

开户银行: 汇丰银行(中国)有限公司苏州分行

银行帐号: 630-014793-001

自本通知之日起, 贵司对业务迁转的安排有任何问题, 烦请及时提出, 富乐苏州与我司将会继续接洽贵司, 尽全力配合包括签署必要的合同和其他法律文件, 保质保量完成与贵司有关业务的平稳过渡和无缝衔接。

顺颂

商祺!

