Test Report issued under the responsibility of:

TÜVNORD

TEST REPORT
IEC 61215 Series: 2016
Terrestrial photovoltaic (PV) modules – Design qualification and type approval

Report Number. ....:	492011148.049 part 1 of 2
Date of issue ....:	2024-06-30
Total number of pages ....:	215
Applicant's name ....:	**Tongwei Solar (Hefei) Co., Ltd.**
Address ....:	No.888, Changning Road, High-tech District, Hefei City, Anhui Province, 230088, P.R. China
Test specification:	
Standard ....:	☒ IEC / EN 61215-1:2016 ☒ IEC / EN 61215-1-1:2016 ☐ IEC 61215-1-2 / EN 61215-1-2:2017 ☐ IEC 61215-1-3:2016 / EN 61215-1-3:2017 ☐ IEC 61215-1-4:2016 / EN 61215-1-4:2017 ☒ IEC 61215-2:2016 / EN 61215-2:2017
Test procedure ....:	TÜV NORD Mark
Non-standard test method ....:	N/A

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Test item description .... :	Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
Trade Mark .... :	通威太阳能 TW SOLAR TW SOLAR
Manufacturer .... :	Tongwei Solar (Hefei) Co., Ltd.
Model/Type reference .... :	**Double Glass PV Modules with Segmented 6" Mono-crystalline Silicon Solar Cells:** 408 cells: THxxxCM5-72SD (xxx = 350-390, in increment of 5) 340 cells: THxxxCM5-60SD (xxx = 290-325, in increment of 5) **Double Glass PV Modules with Segmented 6" PERC Mono-crystalline Silicon Solar Cells:** 408 cells: THxxxPM5-72SD (xxx = 390-410, in increment of 5) 408 cells: THxxxPM5-72SDA (xxx = 410-440, in increment of 5) 408 cells: THxxxPM5-72SDA-F (xxx = 410-440, in increment of 5) 408 cells: THxxxPMB5-72SD (xxx = 390-410, in increment of 5) 408 cells: THxxxPMB5-72SDA (xxx = 410-440, in increment of 5) 408 cells: THxxxPMB5-72SDA-F (xxx = 410-440, in increment of 5) 340 cells: THxxxPM5-60SD (xxx = 325-340, in increment of 5) 340 cells: THxxxPM5-60SDA (xxx = 340-365, in increment of 5) 340 cells: THxxxPM5-60SDA-F (xxx = 340-365, in increment of 5) 340 cells: THxxxPMB5-60SD (xxx = 325-340, in increment of 5) 340 cells: THxxxPMB5-60SDA (xxx = 340-365, in increment of 5) 340 cells: THxxxPMB5-60SDA-F (xxx = 340-365, in increment of 5) **Double Glass PV Modules with Segmented 8" PERC Mono-crystalline Silicon Solar Cells:** 414 cells: THxxxPMB6-69SDC (xxx = 635-670, in increment of 5) 408 cells: THxxxPMB6-68SDC (xxx = 625-660, in increment of 5) 390 cells: THxxxPMB6-65SDC (xxx = 600-630, in increment of 5) 345 cells: THxxxPMB6-58SDC (xxx = 530-555, in increment of 5) 340 cells: THxxxPMB6-57SDC (xxx = 520-550, in increment of 5) 325 cells: THxxxPMB6-54SDC (xxx = 500-525, in increment of 5) **Double Glass PV Modules with Half-cut 7" PERC Mono-crystalline Silicon Solar Cells:** 156 cells: TWMPD-78HDxxx (xxx = 570-615, in increment of 5) 156 cells: TWxxxMBAP-156-D (xxx = 575-615, in increment of 5) 156 cells: TWxxxMBGP-156-D (xxx = 570-610, in increment of 5) 144 cells: TWMPD-72HDxxx (xxx = 525-565, in increment of 5) 144 cells: TWxxxMBAP-144-D (xxx = 530-565, in increment of 5) 144 cells: TWxxxMBGP-144-D (xxx = 525-560, in increment of 5) 132 cells: TWMPD-66HDxxx (xxx = 480-520, in increment of 5) 132 cells: TWxxxMBAP-132-D (xxx = 485-520, in increment of 5) 132 cells: TWxxxMBGP-132-D (xxx = 480-515, in increment of 5) 120 cells: TWMPD-60HDxxx (xxx = 440-470, in increment of 5) 120 cells: TWxxxMBAP-120-D (xxx = 440-470, in increment of 5) 120 cells: TWxxxMBGP-120-D (xxx = 440-470, in increment of 5)

108 cells: TWMPD-54HDxxx (xxx = 395-425, in increment of 5)
108 cells: TWxxxMBAP-108-D (xxx = 400-425, in increment of 5)
108 cells: TWxxxMBGP-108-D (xxx = 395-420, in increment of 5)
144 cells: TWMPG-72HDxxx (xxx = 560-590, in increment of 5)
108 cells: TWMPG-54HDxxx (xxx = 420-440, in increment of 5)
108 cells: TWMPG-54HCxxx (xxx = 420-440, in increment of 5)
132 cells: TWMPH-66HDxxx (xxx = 575-590, in increment of 5)
120 cells: TWMPH-60HDxxx (xxx = 525-535, in increment of 5)
96 cells: TWMPH-48HDxxx (xxx = 420-430, in increment of 5)
96 cells: TWMPH-48HCxxx (xxx = 420-430, in increment of 5)

Double Glass PV Modules with Half-cut 7" TOPCon Mono-crystalline Silicon Solar Cells:

156 cells: TWMND-78HDxxx (xxx = 580-640, in increment of 5)
156 cells: TWxxxMBGT-156-D (xxx = 580-640, in increment of 5)
144 cells: TWMND-72HDxxx (xxx = 535-605, in increment of 5)
144 cells: TWxxxMBGT-144-D (xxx = 535-605, in increment of 5)
132 cells: TWMND-66HDxxx (xxx = 490-555, in increment of 5)
132 cells: TWxxxMBGT-132-D (xxx = 490-555, in increment of 5)
120 cells: TWMND-60HDxxx (xxx = 445-505, in increment of 5)
120 cells: TWxxxMBGT-120-D (xxx = 445-505, in increment of 5)
108 cells: TWMND-54HDxxx (xxx = 400-450, in increment of 5)
108 cells: TWxxxMBGT-108-D (xxx = 400-450, in increment of 5)
144 cells: THxxxTMBI-72ZDD (xxx = 545-560, in increment of 5)
144 cells: THxxxTMBI-72ZDDF (xxx = 545-560, in increment of 5)
132 cells: THxxxTMBI-66ZDD (xxx = 500-510, in increment of 5)
132 cells: THxxxTMBI-66ZDDF (xxx = 500-510, in increment of 5)
120 cells: THxxxTMBI-60ZDD (xxx = 455-465, in increment of 5)
120 cells: THxxxTMBI-60ZDDF (xxx = 455-465, in increment of 5)
108 cells: THxxxTMBI-54ZDD (xxx = 410-420, in increment of 5)
108 cells: THxxxTMBI-54ZDDF (xxx = 410-420, in increment of 5)
144 cells: TWMNG-72HDxxx (xxx = 580-620, in increment of 5)
120 cells: TWMNG-60HDxxx (xxx = 485-515, in increment of 5)
120 cells: TWMNG-60HCxxx (xxx = 485-515, in increment of 5)
108 cells: TWMNG-54HDxxx (xxx = 435-465, in increment of 5)
108 cells: TWMNG-54HCxxx (xxx = 435-465, in increment of 5)
132 cells: TWMNH-66HDxxx (xxx = 580-630, in increment of 5)
120 cells: TWMNH-60HDxxx (xxx = 530-570, in increment of 5)
108 cells: TWMNH-54HDxxx (xxx = 475-515, in increment of 5)
108 cells: TWMNH-54HCxxx (xxx = 475-515, in increment of 5)
96 cells: TWMNH-48HDxxx (xxx = 420-455, in increment of 5)
96 cells: TWMNH-48HCxxx (xxx = 420-455, in increment of 5)

Double Glass PV Modules with Half-cut 8" PERC Mono-crystalline Silicon Solar Cells:

132 cells: TWMPF-66HDxxx (xxx = 635-685, in increment of 5)
132 cells: TWxxxMBCP-132-D (xxx = 635-675, in increment of 5)
132 cells: TWxxxMBIP-132-D (xxx = 635-685, in increment of 5)

	120 cells: TWMPF-60HDxxx (xxx = 580-620, in increment of 5) 120 cells: TWxxxMBCP-120-D (xxx = 580-610, in increment of 5) 120 cells: TWxxxMBIP-120-D (xxx = 580-620, in increment of 5) 108 cells: TWMPF-54HDxxx (xxx = 520-560, in increment of 5) 108 cells: TWxxxMBCP-108-D (xxx = 520-550, in increment of 5) 108 cells: TWxxxMBIP-108-D (xxx = 520-560, in increment of 5) 110 cells: TWMPF-55HDxxx (xxx = 530-570, in increment of 5) 110 cells: TWxxxMBCP-110-D (xxx = 530-560, in increment of 5) 110 cells: TWxxxMBIP-110-D (xxx = 530-570, in increment of 5) 100 cells: TWMPF-50HDxxx (xxx = 480-515, in increment of 5) 100 cells: TWxxxMBCP-100-D (xxx = 480-510, in increment of 5) 100 cells: TWxxxMBIP-100-D (xxx = 480-515, in increment of 5) **Double Glass PV Modules with Half-cut 8" TOPCon Mono-crystalline Silicon Solar Cells:** 132 cells: TWMNF-66HDxxx (xxx = 665-725, in increment of 5) 132 cells: TWxxxMBIT-132-D (xxx = 665-725, in increment of 5) 120 cells: TWMNF-60HDxxx (xxx = 605-660, in increment of 5) 120 cells: TWxxxMBIT-120-D (xxx = 605-660, in increment of 5) 108 cells: TWMNF-54HDxxx (xxx = 545-590, in increment of 5) 108 cells: TWxxxMBIT-108-D (xxx = 545-590, in increment of 5) 110 cells: TWMNF-55HDxxx (xxx = 530-570, in increment of 5) 110 cells: TWxxxMBIT-110-D (xxx = 530-570, in increment of 5) 100 cells: TWMNF-50HDxxx (xxx = 480-515, in increment of 5) 100 cells: TWxxxMBIT-100-D (xxx = 480-515, in increment of 5) **Double Glass PV Modules with Half-cut 8" HJT Mono-crystalline Silicon Solar Cells:** 132 cells: TWMHF-66HDxxx (xxx = 670-740, in increment of 5) 120 cells: TWMHF-60HDxxx (xxx = 605-670, in increment of 5) Remark: xxx indicates output power from the front side only.
Ratings .... :	Refer to Constructional Data Forms (CDF) with the same file no.

Designed by (name, function, signature) ...:	Cara Chen (Project Engineer)	Cara Chen June 30, 2024
Reviewed by (name, function, signature)...:	Nancy Zhang (Technical Certifier)	I.A. Nancy Zhang June.30.2024
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):		
Testing Laboratory ....:	**TÜV NORD Testing (Suzhou) Co., Ltd.**	
Testing location/ address ....:	Zone E, 1st Floor, East side of South Building 3, No. 50, Beiguandu Road, Yuexi Street, Suzhou, Jiangsu Province, China	
Remark: N/A		