

CERTIFICATE

TÜV NORD CERT GmbH
herewith declares that

Tongwei Co., Ltd.
No. 588, Middle Section Tianfu Avenue,
High-Tech Zone, Chengdu,
China (Sichuan) Pilot Free Trade Zone

is authorized to provide the product mentioned below with the mark as illustrated:



Description of product (details see Annex 2):

Crystalline Silicon Terrestrial Photovoltaic (PV) Modules

Valid until: 2029-01-24

Certification program:	P12-VA-01 Rev. 17 09.20
Certification fundamental(s):	IEC 62716:2013 / EN 62716:2013 + AC:2014.
Registered No.:	44 780 23 406749 - 330R1A1M1
Manufacturer:	see Annex 1
Test Report No.:	492012722.002
File No.:	PVP12118/23P-02



Essen, 2024-01-11


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Please also pay attention to the information stated overleaf.

Manufacturer:

Manufacturer 1: **Tongwei Solar (Hefei) Co., Ltd.**
No.888, Changning Road, High-tech District,
Hefei City, Anhui Province, 230088, P.R. China

Factory inspection report no.: 862010358.007

Manufacturer 2: **Hefei GCL System Integration New Energy Technology Co., Ltd.**
Southeast Corner of Intersection of Sidingshan Road and Ruquan
Road, Hefei Circular Economy Demonstration Park, Feidong County,
Hefei City, Anhui Province, P.R. China

Factory inspection report no.: 862010696.002

Manufacturer 3: **Jiangsu Yueyang Photovoltaic Technology Co., Ltd.**
777 Tangqiao Road, High-tech Economic Zone, Jianhu County,
Yancheng City, 224700 Jiangsu Province, P.R. China.

Factory inspection report no.: 862010688.002

Manufacturer 4: **Zibo JinenU Solar Technology Co., LTD.**
3005, Silk Road, Zhoucun District,
Zibo, Shandong China

Factory inspection report no.: 862010689.002

Manufacturer 5: **Funing GCL System Integration Technology Co., Ltd.**
No.888 (A) Hong Kong Road, Funing Economic Development Zone,
Yancheng City, Jiangsu Province, P.R. China

Factory inspection report no.: 862010744.001

Manufacturer 6: **Tongwei Solar (Yancheng) Co., Ltd.**
No. 88, Jiuhuashan Road, Economic Development Zone,
Yancheng City, Jiangsu Province, China

Factory inspection report no.: 862010763.001



Manufacturer 7: **Tongwei Solar (Sichuan) Co., Ltd.**
No.888, Jilin East Road, Huai Kou Street, Jintang County, Chengdu City,
Sichuan Province

Factory inspection report no.: 862010782.001

Manufacturer 8: **Tongwei Solar (Nantong) Co., LTD**
No. 8, Bonded 10 Road, Economic Development Zone, Nantong City,
Jiangsu Province, P. R. China

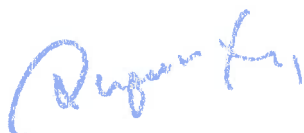
Factory inspection report no.: 862010863.001

Manufacturer 9: **Tongwei Solar (Chengdu) Co., LTD**
No. 888, Linjiaci Road, Huangjia Subdistrict, Shuangliu District, Chengdu
City, Sichuan Province, China

Factory inspection report no.: 862010864.001

Remark:

Factory inspection is mandatory to be performed annually. Please refer to factory inspection report for detailed information.



Description of product(s):

Module types:	PV Modules with Segmented 6" Mono-crystalline Silicon Solar Cells: 408 cells: THxxxCM5-72S (xxx = 350-390, in increment of 5) 340 cells: THxxxCM5-60S (xxx = 290-325, in increment of 5)
Maximum system voltage:	1500V
Fuse rating:	20A
Application class:	Class A
Electrical protection class:	Class II

Module types:	PV Modules with Segmented 6" PERC Mono-crystalline Silicon Solar Cells: 432 cells: THxxxPM5-78S (xxx = 445-480, in increment of 5) 432 cells: THxxxPM5-78SA (xxx = 445-480, in increment of 5) 432 cells: THxxxPM5-78SAF (xxx = 445-480, in increment of 5) 432 cells: THxxxPM5-78SAS (xxx = 445-480, in increment of 5) 432 cells: THxxxPMB5-78S (xxx = 445-480, in increment of 5) 432 cells: THxxxPMB5-78SA (xxx = 445-480, in increment of 5) 432 cells: THxxxPMB5-78SAF (xxx = 445-480, in increment of 5) 432 cells: THxxxPMB5-78SAS (xxx = 445-480, in increment of 5) 408 cells: THxxxPM5-72S (xxx = 395-455, in increment of 5) 408 cells: THxxxPM5-72SA (xxx = 420-455, in increment of 5) 408 cells: THxxxPM5-72SAF (xxx = 420-455, in increment of 5) 408 cells: THxxxPM5-72SAS (xxx = 420-455, in increment of 5) 408 cells: THxxxPM5-72SB (xxx = 460-500, in increment of 5) 408 cells: THxxxPM5-72SBF (xxx = 460-500, in increment of 5) 408 cells: THxxxPM5-72SBS (xxx = 460-500, in increment of 5) 408 cells: THxxxPMB5-72SB (xxx = 460-505, in increment of 5) 408 cells: THxxxPMB5-72SBF (xxx = 460-500, in increment of 5) 408 cells: THxxxPMB5-72SBS (xxx = 460-505, in increment of 5) 408 cells: THxxxPM5-72SF (xxx = 395-435, in increment of 5) 408 cells: THxxxPM5-72SS (xxx = 395-435, in increment of 5) 408 cells: THxxxPMB5-72S (xxx = 395-455, in increment of 5) 408 cells: THxxxPMB5-72SA (xxx = 420-455, in increment of 5) 408 cells: THxxxPMB5-72SAF (xxx = 420-455, in increment of 5) 408 cells: THxxxPMB5-72SAS (xxx = 420-455, in increment of 5) 408 cells: THxxxPMB5-72SF (xxx = 395-435, in increment of 5)
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408 cells: THxxxPMB5-72SS (xxx = 395-435, in increment of 5)
360 cells: THxxxPM5-66S (xxx = 370-400, in increment of 5)
360 cells: THxxxPM5-66SA (xxx = 370-400, in increment of 5)
360 cells: THxxxPM5-66SAF (xxx = 370-400, in increment of 5)
360 cells: THxxxPM5-66SAS (xxx = 370-400, in increment of 5)
360 cells: THxxxPMB5-66S (xxx = 370-400, in increment of 5)
360 cells: THxxxPMB5-66SA (xxx = 370-400, in increment of 5)
360 cells: THxxxPMB5-66SAF (xxx = 370-400, in increment of 5)
360 cells: THxxxPMB5-66SAS (xxx = 370-400, in increment of 5)
340 cells: THxxxPM5-60S (xxx = 325-380, in increment of 5)
340 cells: THxxxPM5-60SA (xxx = 350-380, in increment of 5)
340 cells: THxxxPM5-60SAF (xxx = 350-380, in increment of 5)
340 cells: THxxxPM5-60SAS (xxx = 350-380, in increment of 5)
340 cells: THxxxPM5-60SB (xxx = 380-415, in increment of 5)
340 cells: THxxxPM5-60SBF (xxx = 380-415, in increment of 5)
340 cells: THxxxPM5-60SBS (xxx = 380-415, in increment of 5)
340 cells: THxxxPMB5-60SB (xxx = 380-420, in increment of 5)
340 cells: THxxxPMB5-60SBF (xxx = 380-415, in increment of 5)
340 cells: THxxxPMB5-60SBS (xxx = 380-420, in increment of 5)
340 cells: THxxxPM5-60SF (xxx = 325-360, in increment of 5)
340 cells: THxxxPM5-60SS (xxx = 325-360, in increment of 5)
340 cells: THxxxPMB5-60S (xxx = 325-380, in increment of 5)
340 cells: THxxxPMB5-60SA (xxx = 350-380, in increment of 5)
340 cells: THxxxPMB5-60SAF (xxx = 350-380, in increment of 5)
340 cells: THxxxPMB5-60SAS (xxx = 350-380, in increment of 5)
340 cells: THxxxPMB5-60SF (xxx = 325-360, in increment of 5)
340 cells: THxxxPMB5-60SS (xxx = 325-360, in increment of 5)

Maximum system voltage: 1500V
Fuse rating: 20A
Application class: Class A
Electrical protection class: Class II



Module types:

PV Modules with Segmented 8" PERC Mono-crystalline Silicon Solar Cells:

414 cells: THxxxPM6-69SC (xxx = 645-655, in increment of 5)
414 cells: THxxxPMB6-69SC (xxx = 645-670, in increment of 5)
408 cells: THxxxPM6-68SC (xxx = 635-655, in increment of 5)
408 cells: THxxxPMB6-68SC (xxx = 635-660, in increment of 5)
390 cells: THxxxPM6-65SC (xxx = 605-625, in increment of 5)
390 cells: THxxxPMB6-65SC (xxx = 605-630, in increment of 5)
345 cells: THxxxPM6-58SC (xxx = 535-550, in increment of 5)
345 cells: THxxxPMB6-58SC (xxx = 535-555, in increment of 5)
340 cells: THxxxPM6-57SC (xxx = 530-545, in increment of 5)
340 cells: THxxxPMB6-57SC (xxx = 530-550, in increment of 5)
325 cells: THxxxPM6-54SC (xxx = 505-520, in increment of 5)
325 cells: THxxxPMB6-54SC (xxx = 505-525, in increment of 5)
320 cells: THxxxPMB7-46SC (xxx = 425-445, in increment of 5)
320 cells: THxxxPMB7-46SCS (xxx = 425-445, in increment of 5)
320 cells: THxxxPMB7-46SCF (xxx = 420-440, in increment of 5)
305 cells: THxxxPMB7-44SC (xxx = 405-425, in increment of 5)
305 cells: THxxxPMB7-44SCS (xxx = 405-425, in increment of 5)
305 cells: THxxxPMB7-44SCF (xxx = 400-420, in increment of 5)

Maximum system voltage:

1500V

Fuse rating:

30A or 25A

Application class:

Class A

Electrical protection class:

Class II

Module types:

PV Modules with Half-cut 7" PERC Mono-crystalline Silicon Solar Cells:

156 cells: TWMPD-78HSxxx (xxx = 570-620, in increment of 5)
156 cells: TWMPD-78HBxxx (xxx = 570-620, in increment of 5)
156 cells: TWxxxMAP-156-H (xxx = 580-605, in increment of 5)
156 cells: TWxxxMAP-156-H-S (xxx = 580-605, in increment of 5)
156 cells: TWxxxMAP-156-H-F (xxx = 580-605, in increment of 5)
156 cells: TWxxxMGP-156-H (xxx = 570-620, in increment of 5)
156 cells: TWxxxMGP-156-H-S (xxx = 570-620, in increment of 5)
156 cells: TWxxxMGP-156-H-F (xxx = 570-620, in increment of 5)
144 cells: TWMPD-72HSxxx (xxx = 525-570, in increment of 5)
144 cells: TWMPD-72HBxxx (xxx = 525-570, in increment of 5)
144 cells: TWxxxMAP-144-H (xxx = 530-565, in increment of 5)



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144 cells: TWxxxMAP-144-H-S (xxx = 530-565, in increment of 5)
144 cells: TWxxxMAP-144-H-F (xxx = 530-565, in increment of 5)
144 cells: TWxxxMGP-144-H (xxx = 525-570, in increment of 5)
144 cells: TWxxxMGP-144-H-S (xxx = 525-570, in increment of 5)
144 cells: TWxxxMGP-144-H-F (xxx = 525-570, in increment of 5)
132 cells: TWMPD-66HSxxx (xxx = 480-525, in increment of 5)
132 cells: TWMPD-66HBxxx (xxx = 480-525, in increment of 5)
132 cells: TWxxxMAP-132-H (xxx = 485-515, in increment of 5)
132 cells: TWxxxMAP-132-H-S (xxx = 485-515, in increment of 5)
132 cells: TWxxxMAP-132-H-F (xxx = 485-515, in increment of 5)
132 cells: TWxxxMGP-132-H (xxx = 480-525, in increment of 5)
132 cells: TWxxxMGP-132-H-S (xxx = 480-525, in increment of 5)
132 cells: TWxxxMGP-132-H-F (xxx = 480-525, in increment of 5)
120 cells: TWMPD-60HSxxx (xxx = 440-475, in increment of 5)
120 cells: TWMPD-60HBxxx (xxx = 440-475, in increment of 5)
120 cells: TWxxxMAP-120-H (xxx = 440-470, in increment of 5)
120 cells: TWxxxMAP-120-H-S (xxx = 440-470, in increment of 5)
120 cells: TWxxxMAP-120-H-F (xxx = 440-470, in increment of 5)
120 cells: TWxxxMGP-120-H (xxx = 440-475, in increment of 5)
120 cells: TWxxxMGP-120-H-S (xxx = 440-475, in increment of 5)
120 cells: TWxxxMGP-120-H-F (xxx = 440-475, in increment of 5)
108 cells: TWMPD-54HSxxx (xxx = 395-430, in increment of 5)
108 cells: TWMPD-54HBxxx (xxx = 395-430, in increment of 5)
108 cells: TWxxxMAP-108-H (xxx = 400-420, in increment of 5)
108 cells: TWxxxMAP-108-H-S (xxx = 400-420, in increment of 5)
108 cells: TWxxxMAP-108-H-F (xxx = 400-420, in increment of 5)
108 cells: TWxxxMGP-108-H (xxx = 395-430, in increment of 5)
108 cells: TWxxxMGP-108-H-S (xxx = 395-430, in increment of 5)
108 cells: TWxxxMGP-108-H-F (xxx = 395-430, in increment of 5)
144 cells: TWMPG-72HSxxx (xxx = 565-590, in increment of 5)
144 cells: TWMPG-72HBxxx (xxx = 565-590, in increment of 5)
108 cells: TWMPG-54HSxxx (xxx = 420-440, in increment of 5)
108 cells: TWMPG-54HBxxx (xxx = 420-440, in increment of 5)
132 cells: TWMPH-66HSxxx (xxx = 565-585, in increment of 5)
132 cells: TWMPH-66HBxxx (xxx = 565-585, in increment of 5)
120 cells: TWMPH-60HSxxx (xxx = 515-530, in increment of 5)
120 cells: TWMPH-60HBxxx (xxx = 515-530, in increment of 5)
96 cells: TWMPH-48HSxxx (xxx = 410-425, in increment of 5)
96 cells: TWMPH-48HBxxx (xxx = 410-425, in increment of 5)




Maximum system voltage: 1500V
Fuse rating: 25A
Application class: Class A
Electrical protection class: Class II

Module types:

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

156 cells: TWMND-78HSxxx (xxx = 570-640, in increment of 5)
156 cells: TWMND-78HBxxx (xxx = 570-640, in increment of 5)
156 cells: TWxxxMGT-156-H (xxx = 570-640, in increment of 5)
156 cells: TWxxxMGT-156-H-S (xxx = 570-640, in increment of 5)
156 cells: TWxxxMGT-156-H-F (xxx = 570-640, in increment of 5)
144 cells: TWMND-72HSxxx (xxx = 525-590, in increment of 5)
144 cells: TWMND-72HBxxx (xxx = 525-590, in increment of 5)
144 cells: TWxxxMGT-144-H (xxx = 525-590, in increment of 5)
144 cells: TWxxxMGT-144-H-S (xxx = 525-590, in increment of 5)
144 cells: TWxxxMGT-144-H-F (xxx = 525-590, in increment of 5)
132 cells: TWMND-66HSxxx (xxx = 485-540, in increment of 5)
132 cells: TWMND-66HBxxx (xxx = 485-540, in increment of 5)
132 cells: TWxxxMGT-132-H (xxx = 485-540, in increment of 5)
132 cells: TWxxxMGT-132-H-S (xxx = 485-540, in increment of 5)
132 cells: TWxxxMGT-132-H-F (xxx = 485-540, in increment of 5)
120 cells: TWMND-60HSxxx (xxx = 440-490, in increment of 5)
120 cells: TWMND-60HBxxx (xxx = 440-490, in increment of 5)
120 cells: TWxxxMGT-120-H (xxx = 440-490, in increment of 5)
120 cells: TWxxxMGT-120-H-S (xxx = 440-490, in increment of 5)
120 cells: TWxxxMGT-120-H-F (xxx = 440-490, in increment of 5)
108 cells: TWMND-54HSxxx (xxx = 395-440, in increment of 5)
108 cells: TWMND-54HBxxx (xxx = 395-440, in increment of 5)
108 cells: TWxxxMGT-108-H (xxx = 395-440, in increment of 5)
108 cells: TWxxxMGT-108-H-S (xxx = 395-440, in increment of 5)
108 cells: TWxxxMGT-108-H-F (xxx = 395-440, in increment of 5)
144 cells: TWMNG-72HSxxx (xxx = 585-625, in increment of 5)
144 cells: TWMNG-72HBxxx (xxx = 585-625, in increment of 5)
108 cells: TWMNG-54HSxxx (xxx = 435-465, in increment of 5)
108 cells: TWMNG-54HBxxx (xxx = 435-465, in increment of 5)
132 cells: TWMNH-66HSxxx (xxx = 585-625, in increment of 5)
132 cells: TWMNH-66HBxxx (xxx = 585-625, in increment of 5)



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	120 cells: TWMNH-60HSxxx (xxx = 530-565, in increment of 5)
	120 cells: TWMNH-60HBxxx (xxx = 530-565, in increment of 5)
	96 cells: TWMNH-48HSxxx (xxx = 425-455, in increment of 5)
	96 cells: TWMNH-48HBxxx (xxx = 425-455, in increment of 5)
Maximum system voltage:	1500V
Fuse rating:	25A
Application class:	Class A
Electrical protection class:	Class II
Module types:	PV Modules with Half-cut 8" PERC Mono-crystalline Silicon Solar Cells:
	132 cells: TWMPF-66HSxxx (xxx = 640-695, in increment of 5)
	132 cells: TWMPF-66HBxxx (xxx = 640-695, in increment of 5)
	132 cells: TWxxxMIP-132-H (xxx = 640-695, in increment of 5)
	132 cells: TWxxxMIP-132-H-S (xxx = 640-695 in increment of 5)
	132 cells: TWxxxMIP-132-H-F (xxx = 640-695, in increment of 5)
	132 cells: TWxxxMCP-132-H (xxx = 640-670, in increment of 5)
	132 cells: TWxxxMCP-132-H-S (xxx = 640-670, in increment of 5)
	132 cells: TWxxxMCP-132-H-F (xxx = 640-670, in increment of 5)
	120 cells: TWMPF-60HSxxx (xxx = 580-630, in increment of 5)
	120 cells: TWMPF-60HBxxx (xxx = 580-630, in increment of 5)
	120 cells: TWxxxMIP-120-H (xxx = 580-630, in increment of 5)
	120 cells: TWxxxMIP-120-H-S (xxx = 580-630, in increment of 5)
	120 cells: TWxxxMIP-120-H-F (xxx = 580-630, in increment of 5)
	120 cells: TWxxxMCP-120-H (xxx = 580-610, in increment of 5)
	120 cells: TWxxxMCP-120-H-S (xxx = 580-610, in increment of 5)
	120 cells: TWxxxMCP-120-H-F (xxx = 580-610, in increment of 5)
	108 cells: TWMPF-54HSxxx (xxx = 525-565, in increment of 5)
	108 cells: TWMPF-54HBxxx (xxx = 525-565, in increment of 5)
	108 cells: TWxxxMIP-108-H (xxx = 525-565, in increment of 5)
	108 cells: TWxxxMIP-108-H-S (xxx = 525-565, in increment of 5)
	108 cells: TWxxxMIP-108-H-F (xxx = 525-565, in increment of 5)
	108 cells: TWxxxMCP-108-H (xxx = 525-545, in increment of 5)
	108 cells: TWxxxMCP-108-H-S (xxx = 525-545, in increment of 5)
	108 cells: TWxxxMCP-108-H-F (xxx = 525-545, in increment of 5)
	110 cells: TWMPF-55HSxxx (xxx = 535-580, in increment of 5)
	110 cells: TWMPF-55HBxxx (xxx = 535-580, in increment of 5)
	110 cells: TWxxxMIP-110-H (xxx = 535-580, in increment of 5)
	110 cells: TWxxxMIP-110-H-S (xxx = 535-580, in increment of 5)



110 cells: TWxxxMIP-110-H-F (xxx = 535-580, in increment of 5)
110 cells: TWxxxMCP-110-H (xxx = 535-580, in increment of 5)
110 cells: TWxxxMCP-110-H-S (xxx = 535-580, in increment of 5)
110 cells: TWxxxMCP-110-H-F (xxx = 535-580, in increment of 5)
100 cells: TWMPF-50HSxxx (xxx = 485-525, in increment of 5)
100 cells: TWMPF-50HBxxx (xxx = 485-525, in increment of 5)
100 cells: TWxxxMIP-100-H (xxx = 485-525, in increment of 5)
100 cells: TWxxxMIP-100-H-S (xxx = 485-525, in increment of 5)
100 cells: TWxxxMIP-100-H-F (xxx = 485-525, in increment of 5)
100 cells: TWxxxMCP-100-H (xxx = 485-525, in increment of 5)
100 cells: TWxxxMCP-100-H-S (xxx = 485-525, in increment of 5)
100 cells: TWxxxMCP-100-H-F (xxx = 485-525, in increment of 5)

Maximum system voltage: 1500V
Fuse rating: 30A
Application class: Class A
Electrical protection class: Class II

Module types:

PV Modules with Half-cut 8" TOPCon Mono-crystalline Silicon Solar Cells:

132 cells: TWMNF-66HSxxx (xxx = 650-700, in increment of 5)
132 cells: TWMNF-66HBxxx (xxx = 650-700, in increment of 5)
132 cells: TWxxxMIT-132-H (xxx = 650-700, in increment of 5)
132 cells: TWxxxMIT-132-H-S (xxx = 650-700, in increment of 5)
132 cells: TWxxxMIT-132-H-F (xxx = 650-700, in increment of 5)
120 cells: TWMNF-60HSxxx (xxx = 590-635, in increment of 5)
120 cells: TWMNF-60HBxxx (xxx = 590-635, in increment of 5)
120 cells: TWxxxMIT-120-H (xxx = 590-635, in increment of 5)
120 cells: TWxxxMIT-120-H-S (xxx = 590-635, in increment of 5)
120 cells: TWxxxMIT-120-H-F (xxx = 590-635, in increment of 5)
108 cells: TWMNF-54HSxxx (xxx = 530-570, in increment of 5)
108 cells: TWMNF-54HBxxx (xxx = 530-570, in increment of 5)
108 cells: TWxxxMIT-108-H (xxx = 530-570, in increment of 5)
108 cells: TWxxxMIT-108-H-S (xxx = 530-570, in increment of 5)
108 cells: TWxxxMIT-108-H-F (xxx = 530-570, in increment of 5)
110 cells: TWMNF-55HSxxx (xxx = 540-580, in increment of 5)
110 cells: TWMNF-55HBxxx (xxx = 540-580, in increment of 5)
110 cells: TWxxxMIT-110-H (xxx = 540-580, in increment of 5)
110 cells: TWxxxMIT-110-H-S (xxx = 540-580, in increment of 5)
110 cells: TWxxxMIT-110-H-F (xxx = 540-580, in increment of 5)



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100 cells: TWMNF-50HSxxx (xxx = 490-530, in increment of 5)
100 cells: TWMNF-50HBxxx (xxx = 490-530, in increment of 5)
100 cells: TWxxxMIT-100-H (xxx = 490-530, in increment of 5)
100 cells: TWxxxMIT-100-H-S (xxx = 490-530, in increment of 5)
100 cells: TWxxxMIT-100-H-F (xxx = 490-530, in increment of 5)

Maximum system voltage: 1500V
Fuse rating: 30A
Application class: Class A
Electrical protection class: Class II

Remark:

For detailed product information, please refer to CDF (Constructional Data Form) in Annex 1 of test report.

