

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 from: 2024-01-11

Valid until: 2028-09-27

Certification program:	P12-VA-01 Rev. 17 09.20
Certification fundamental(s):	P12.4-AA-02 Rev. 00 (IEC TS 62804-1:2015 modified)
Remark:	Test temperature: 85°C; Relative humidity: 85%; Test duration: 96 hours.
Registered No.:	44 780 23 406749 - 334R1A1M1
Manufacturer:	see Annex 1
Test Report No.:	492012726.002
File No.:	PVP12118/23P-04



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Essen, 2024-01-11

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.



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Description of product(s):

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)
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)



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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)



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Maximum system voltage:

305 cells: THxxxPMB7-44SCS (xxx = 405-425, in increment of 5)

305 cells: THxxxPMB7-44SCF (xxx = 400-420, in increment of 5)

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)

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)



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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)



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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)
 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)



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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)



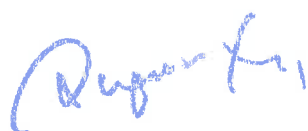
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132 cells: TWMNF-66HBxxx (xxx = 650-700, in increment of 5)
132 cells: TWxxxMIT-132-H (xxx = 650-700, in increment of 5)
132 cells: TWxxxMIT-132-H-S (xxx = 650-700, in increment of 5)
132 cells: TWxxxMIT-132-H-F (xxx = 650-700, in increment of 5)
120 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)
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.



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