

Certificate



This certifies that the company:

JINNENG CLEAN ENERGY TECHNOLOGY LTD.
No.1 Wenshui Economic Development Zone
Lvliang, Shanxi, 032100
China

is authorized to provide the product(s) mentioned below with the mark as illustrated.

Manufacturer and factory(-ies): See Annex 1

Description of product(s) **Crystalline Silicon Terrestrial Photovoltaic (PV) Modules**
(details see Annex 2):

Certification program: P12-VA-01 Rev. 17 / 09.20

Certification fundamental(s): IEC 61215-1:2021 / EN IEC 61215-1:2021,
IEC 61215-1-1:2021 / EN IEC 61215-1-1:2021, IEC 61215-2:2021 / EN IEC 61215-2:2021,
IEC 61730-1:2023, IEC 61730-2:2023

It is certified by TÜV NORD CERT GmbH that the product(s) described above has(have) been assessed according to the certification program mentioned above and found in compliance with the requirements of above specified certification fundamental(s). This certification is based on evaluation results as documented in test report(s) referenced below and production site(s) audit results as documented in factory inspection report(s) referenced in Annex 1. This certificate is valid in conjunction with these quoted report(s).

Registration no.: 44 780 24 406749 - 132R5A1M6
Report no.: 492013036.008
File no.: PVP12029/25P

Valid from: 2026-01-08
Valid until: 2029-04-09

Essen, 2026-01-08

Certification Body - Consumer Products

TÜV NORD CERT GmbH
Am TÜV 1, 45307 Essen, Germany
tuev-nord-cert.de | prodcert@tuev-nord.de

Please also pay attention to the information stated overleaf.



Visit our database to
verify the validity of
this certificate.

Annex 1

to certificate registration no. 44 780 24 406749 - 132R5A1M6

Manufacturer: **JINNENG CLEAN ENERGY TECHNOLOGY LTD.**
No.1 Wenshui Economic Development Zone
Lvliang, Shanxi, 032100, China

Factory: **JINNENG CLEAN ENERGY TECHNOLOGY LTD.**
No.1 Wenshui Economic Development Zone
Lvliang, Shanxi, 032100, China

Factory inspection report no.: 862010249.012

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

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Annex 2

to certificate registration no. 44 780 24 406749 - 132R5A1M6

Description of product(s):

Module types:	Double Glass PV Modules with 182 x 91mm n-type TOPCon Bifacial Mono Solar Cells: 156 cells: JNBN156-xxx (xxx = 575-650, in increment of 5) 144 cells: JNBN144-xxx (xxx = 530-600, in increment of 5) 132 cells: JNBN132-xxx (xxx = 485-550, in increment of 5) 120 cells: JNBN120-xxx (xxx = 445-500, in increment of 5) 108 cells: JNBN108-xxx (xxx = 400-450, in increment of 5) 96 cells: JNBN96-xxx (xxx = 355-400, in increment of 5) Remark: xxx only indicates maximum power output of the front side.
Maximum system voltage:	1500V
Maximum overcurrent protection rating:	30A
Electrical protection class:	Class II
Pollution degree:	1
98 th percentile module operating temperature (T ₉₈):	70°C
Design load (positive / negative):	3600Pa / 1600Pa
Safety factors:	1.5
Fire safety class:	Class C according to UL790
Isc bifaciality coefficient (ϕ _{Isc}):	80% ± 5%

Module types:	Double Glass PV Modules with 182 x 105mm n-type TOPCon Bifacial Mono Solar Cells: 132 cells: JNBN132-xxx (xxx = 585-625, in increment of 5) 120 cells: JNBN120-xxx (xxx = 530-565, in increment of 5) 108 cells: JNBN108-xxx (xxx = 480-510, in increment of 5) 96 cells: JNBN96-xxx (xxx = 425-455, in increment of 5) Remark: xxx only indicates maximum power output of the front side.
Maximum system voltage:	1500V
Maximum overcurrent protection rating:	35A
Electrical protection class:	Class II
Pollution degree:	1

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98th percentile module operating temperature (T_{98}): 70°C
 Design load (positive / negative): 3600Pa / 1600Pa
 Safety factors: 1.5
 Fire safety class: Class C according to UL790
 Isc bifaciality coefficient (ϕ_{Isc}): 80% $\pm$ 5%

Module types: **Double Glass PV Modules with 210 x 105mm n-type TOPCon Bifacial Mono Solar Cells:**
 132 cells: JNBN132-xxx (xxx = 670-730, in increment of 5)
 120 cells: JNBN120-xxx (xxx = 610-660, in increment of 5)
 Remark: xxx only indicates maximum power output of the front side.

Maximum system voltage: 1500V
 Maximum overcurrent protection rating: 35A
 Electrical protection class: Class II
 Pollution degree: 1
 98th percentile module operating temperature (T_{98}): 70°C
 Design load (positive / negative): 3600Pa / 1600Pa
 Safety factors: 1.5
 Fire safety class: Class C according to UL790
 Isc bifaciality coefficient (ϕ_{Isc}): 80% $\pm$ 10%

Module types: **Double Glass PV Modules with 210 x 105mm PERC Bifacial Mono Solar Cells:**
 132 cells: JNBM132-xxx (xxx = 650-680, in increment of 5)
 120 cells: JNBM120-xxx (xxx = 590-615, in increment of 5)
 Remark: xxx only indicates maximum power output of the front side.

Maximum system voltage: 1500V
 Maximum overcurrent protection rating: 35A
 Electrical protection class: Class II
 Pollution degree: 1
 98th percentile module operating temperature (T_{98}): 70°C
 Design load (positive / negative): 3600Pa / 1600Pa
 Safety factors: 1.5
 Fire safety class: Class C according to UL790
 Isc bifaciality coefficient (ϕ_{Isc}): 75% $\pm$ 5%

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Module types:	Double Glass Monofacial PV Modules with 210 x 105mm n-type TOPCon Bifacial Mono Solar Cells: 56 cells: JNBN56-LW-xxx (xxx = 270-305, in increment of 5) Remark: xxx only indicates maximum power output of the front side.
Maximum system voltage:	1500V
Maximum overcurrent protection rating:	25A
Electrical protection class:	Class II
Pollution degree:	1
98 th percentile module operating temperature (T ₉₈):	70°C
Design load (positive / negative):	1600Pa / 1600Pa
Safety factors:	1.5
Fire safety class:	Class C according to UL790
Isc bifaciality coefficient (ϕ _{Isc}):	N/A

Remark:

For detailed product information, please refer to CDF (Constructional Data Form) with the same file no.

Isc bifaciality coefficient (ϕ_{Isc}) = $I_{sc_{rear}} / I_{sc_{front}}$, as defined in IEC TS 60904-1-2.

The tolerance of Isc bifaciality coefficient (ϕ_{Isc}) is claimed by client.

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