

To / 致:

Company / 公司: Sunova Solar Technology Co., Ltd.

Contact / 联系人: Ms. Miao Lingzhu

Email / 邮箱: Mary.miao@sunova-solar.com

From / 自:

Company / 公司: TÜV NORD (HANGZHOU) CO., LTD. / 杭州汉德质量认证服务有限公司

Contact / 联系人: Ms. Serena.wu / 邬玉婷 小姐

Email / 邮箱: sewu@tuv-nord.com

Subject: Announcement of cancellation

主题: 证书取消通知

File No.: PVP12030/23P-01

项目号:

License holder: **Sunova Solar Technology Co., Ltd.**

持证人: Building H, Phase II, Standard Workshop, Runzhou Road, Huishan Industrial Transformation and Agglomeration Area 214115 Wuxi, Jiangsu Province, P.R. China

Certificate No.: 44 780 22 406749 - 138R8A3M8

证书号:

Product: Crystalline Silicon Terrestrial Photovoltaic (PV) Modules

产品: 地面用晶体硅光伏组件

Herewith it is declared, that the above noted certificate(s) has (have) been invalidated since 2024-01-26
特此声明, 上述证书自 2024 年 1 月 26 日起失效。

The cancellation is due to:

取消原因:

License holder applied for cancellation.

持证人申请取消。

New certificate(s) (no: 44 780 22 406749 - 138R8A3M9) has (have) been issued to replace the cancelled one(s).

新证书 (证书号: 44 780 22 406749 - 138R8A3M9) 签发, 取代旧证书。

After the expiry date of the certificate(s), the certificate(s) has (have) not been renewed within 6 months.

证书到期 6 个月内未续证。

After the expiry date of last factory inspection conclusion, no factory inspection has been conducted or no payment of annual fees has been received within 6 months.

上一厂检结论有效期到期后, 6 个月内未配合厂检或未支付年度费用。

No payment of annual fees has been received within 6 month after last period of payment of annual fees.

上一证书年费支付期后, 超过 6 个月未支付证书年费。

Others: _____

其他情况: _____

Please pay attention to stop using the invalid certificate(s) from 2024-01-26. Meanwhile, please send back the original copies of above mentioned certificate(s) to us.

请注意从 2024 年 1 月 26 日开始停止使用无效证书。同时，请将上述证书原件寄回给我们。

TÜV NORD reserved the right of final explanation about the cancellation of certificate(s). TÜV NORD will not take any responsibility for the circumstance of misusing the invalid certificate(s) by the license holder or the manufacturer.

TÜV NORD 保留对证书取消的最终解释权。TÜV NORD 对证书持有者或制造商滥用无效证书的情况不承担任何责任。

Renewable Energy / 可再生能源

TÜV NORD (Hangzhou) Co., Ltd. / 杭州汉德质量认证服务有限公司



Serena.wu / 邬玉婷

Technical Support / 技术支持

CERTIFICATE

TÜV NORD CERT GmbH
herewith declares that

Sunova Solar Technology Co., Ltd.

Building H, Phase II, Standard Workshop, Runzhou Road, Huishan Industrial Transformation and Agglomeration Area 214115 Wuxi, Jiangsu Province, P.R. China

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: 2024-01-26
Valid until: 2027-07-03

Certification program:	P12-VA-01 Rev. 17 09.20
Certification fundamental(s):	IEC / EN 61215-1:2016; IEC / EN 61215-1-1:2016; IEC 61215-2:2016 / EN 61215-2:2017; IEC 61730-1:2016 / EN IEC 61730-1:2018 + AC:2018; IEC 61730-2:2016 / EN IEC 61730-2:2018 + AC:2018.
Registered No.:	44 780 22 406749 - 138R8A3M9
Manufacturer and factory(-ies):	See Annex 1
Test Report No.:	492012066.013
File No.:	PVP12011/23P-01



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Consumer Products



Essen, 2024-01-26

Please also pay attention to the information stated overleaf.

Manufacturer and factory(-ies):

Manufacturer:	Sunova Solar Technology Co., Ltd. Building H, Phase II, Standard Workshop, Runzhou Road, Huishan Industrial Transformation and Agglomeration Area 214115 Wuxi, Jiangsu Province, P.R. China
Factory 1:	Sunova Solar Technology Co., Ltd. Building H, Phase II, Standard Workshop, Runzhou Road, Huishan Industrial Transformation and Agglomeration Area 214115 Wuxi, Jiangsu Province, P.R. China
Factory inspection report no.:	862010664.002
Factory 2:	Jiangsu Green Energy Power Technology Co., Ltd. No.1 Taiyang Road, Youfang Town, Yangzhong City, Jiangsu Province
Factory inspection report no.:	862010732.001
Factory 3:	THORNOVA SOLAR VIET NAM COMPANY LIMITED Factory No. 1 and No. 2 Lot (VI) VI-1.2, Road N1 intersects with Road D2, Que Vo II Industrial Park, Ngoc Xa Commune, Que Vo Town, Bac Ninh Province, Vietnam
Factory inspection report no.:	862010779.001
Factory 4:	Anji Technology Co., Ltd. No. 19, Keji 5th Road Annan District 70955 Tainan City
Factory inspection report no.:	862010855.001

Remark:

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



Description of product(s):

Module types:

Double Glass PV Modules with Half-cut 210mm Mono-crystalline Silicon Solar Cells:

132 cells: SS-BGxxx-66MDH-G12 (xxx=650-670, in steps of 5)

132 cells: TS-BG66(xxx)-G12 (xxx=650-670, in steps of 5)

120 cells: SS-BGxxx-60MDH-G12 (xxx=590-610, in steps of 5)

120 cells: TS-BG60(xxx)-G12 (xxx=590-610, in steps of 5)

108 cells: SS-BGxxx-54MDH-G12 (xxx=530-545, in steps of 5)

108 cells: TS-BG54(xxx)-G12 (xxx=530-545, in steps of 5)

96 cells: SS-BGxxx-48MDH-G12 (xxx=475-490, in steps of 5)

96 cells: TS-BG48(xxx)-G12 (xxx=475-490, in steps of 5)

84 cells: SS-BGxxx-42MDH-G12 (xxx=415-425, in steps of 5)

84 cells: TS-BG42(xxx)-G12 (xxx=415-425, in steps of 5)

60 cells: SS-BGxxx-30MDH-G12 (xxx=285-310, in steps of 5)

60 cells: TS-BG30(xxx)-G12 (xxx=285-310, in steps of 5)

Remark: xxx indicates output power from the front side only

Maximum system voltage:

1500V

Fuse rating:

35A or 15A, refer CDF for details

Electrical protection class:

Class II

Pollution degree:

1

Material group:

I

Design load (positive / negative):

3600Pa / 1600Pa

Safety factors:

1.5

Fire safety class:

Class C according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018)

Bifaciality coefficient (φ):

70% \pm 5%



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Module types:

Double Glass PV Modules with Half-cut 182mm Mono-crystalline Silicon Solar Cells:

144 cells: SS-BGxxx-72MDH (xxx=530-560, in steps of 5)

144 cells: TS-BG72(xxx) (xxx=530-560, in steps of 5)

132 cells: SS-BGxxx-66MDH (xxx=485-510, in steps of 5)

132 cells: TS-BG66(xxx) (xxx=485-510, in steps of 5)

120 cells: SS-BGxxx-60MDH (xxx=440-465, in steps of 5)

120 cells: TS-BG60(xxx) (xxx=440-465, in steps of 5)

108 cells: SS-BGxxx-54MDH (xxx=400-420, in steps of 5)

108 cells: Alp 2 SS-BGxxx-54MDH (xxx=400-420, in steps of 5)

108 cells: TS-BG54(xxx) (xxx=400-420, in steps of 5)

108 cells: Alp 2 TS-BG54(xxx) (xxx=400-420, in steps of 5)

96 cells: SS-BGxxx-48MDH (xxx=355-370, in steps of 5)

96 cells: TS-BG48(xxx) (xxx=355-370, in steps of 5)

72 cells: SS-BGxxx-36MDH (xxx=265-280, in steps of 5)

72 cells: TS-BG36(xxx) (xxx=265-280, in steps of 5)

72 cells: SS-BGxxx-36MDHS (xxx=265-280, in steps of 5)

72 cells: TS-BG36(xxx)S (xxx=265-280, in steps of 5)

Remark: xxx indicates output power from the front side only

Maximum system voltage:

1500V

Fuse rating:

30A

Electrical protection class:

Class II

Pollution degree:

1

Material group:

I

Design load (positive / negative):

3600Pa / 1600Pa

Safety factors:

1.5

Fire safety class:

Class C according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018)

Bifaciality coefficient (φ):70% \pm 5%

Module types:

Double Glass PV Modules with Half-cut 210mm TOPCon Mono-crystalline Silicon Solar Cells:

132 cells: SS-BGxxx-66MDH-G12(T) (xxx=660-705, in steps of 5)

132 cells: TS-BGT66(xxx)-G12 (xxx=660-705, in steps of 5)

120 cells: SS-BGxxx-60MDH-G12(T) (xxx=600-640, in steps of 5)

120 cells: TS-BGT60(xxx)-G12 (xxx=600-640, in steps of 5)

60 cells: SS-BGxxx-30MDH-G12(T) (xxx=300-320, in steps of 5)

60 cells: TS-BGT30(xxx)-G12 (xxx=300-320, in steps of 5)

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Remark: xxx indicates output power from the front side only

Maximum system voltage:	1500V
Fuse rating:	35A
Electrical protection class:	Class II
Pollution degree:	1
Material group:	I
Design load (positive / negative):	3600Pa / 1600Pa
Safety factors:	1.5
Fire safety class:	Class C according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018)
Bifaciality coefficient (ϕ):	75% \pm 5%

Module types: **Double Glass PV Modules with Half-cut 182mm TOPCon Monocrystalline Silicon Solar Cells:**

156 cells: SS-BGxxx-78MDH(T) (xxx=580-615, in steps of 5)

156 cells: TS-BGT78(xxx) (xxx=580-615, in steps of 5)

144 cells: SS-BGxxx-72MDH(T) (xxx=535-590, in steps of 5)

144 cells: TS-BGT72(xxx) (xxx=535-590, in steps of 5)

132 cells: SS-BGxxx-66MDH(T) (xxx=490-540, in steps of 5)

132 cells: TS-BGT66(xxx) (xxx=490-540, in steps of 5)

120 cells: SS-BGxxx-60MDH(T) (xxx=445-490, in steps of 5)

120 cells: TS-BGT60(xxx) (xxx=445-490, in steps of 5)

108 cells: SS-BGxxx-54MDH(T) (xxx=400-440, in steps of 5)

108 cells: Alp 3 SS-BGxxx-54MDH(T) (xxx=400-440, in steps of 5)

108 cells: TS-BGT54(xxx) (xxx=400-440, in steps of 5)

108 cells: Alp 3 TS-BGT54(xxx) (xxx=400-440, in steps of 5)

Remark: xxx indicates output power from the front side only

Maximum system voltage:	1500V
Fuse rating:	30A
Electrical protection class:	Class II
Pollution degree:	1
Material group:	I
Design load (positive / negative):	3600Pa / 1600Pa
Safety factors:	1.5
Fire safety class:	Class C according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018)
Bifaciality coefficient (ϕ):	75% \pm 5%

Module types:	Double Glass PV Modules with Half-cut 182mm TOPCon Mono-crystalline Silicon Solar Cells: 108 cells: SS-BGxxx-54MDH(T) (xxx=405-445, in steps of 5) 108 cells: TS-BGT54(xxx) (xxx=405-445, in steps of 5) Remark: xxx indicates output power from the front side only
Maximum system voltage:	1500V
Fuse rating:	30A
Electrical protection class:	Class II
Pollution degree:	1
Material group:	I
Design load (positive / negative):	3600Pa / 1600Pa
Safety factors:	1.5
Fire safety class:	Class C according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018)
Bifaciality coefficient (ϕ):	80% \pm 5%



Module types:

Double Glass PV Modules with Half-cut 191.6mm TOPCon Monocrystalline Silicon Solar Cells:

- 144 cells: SS-BGxxx-72MDH-G10(T) (xxx = 595-615, in increment of 5)
- 144 cells: TS-BGT72(xxx)-G10 (xxx = 595-615, in increment of 5)
- 132 cells: SS-BGxxx-66MDH-G10 (T) (xxx = 545-560, in increment of 5)
- 132 cells: TS-BGT66(xxx)-G10 (xxx = 545-560, in increment of 5)
- 120 cells: SS-BGxxx-60MDH-G10(T) (xxx = 495-510, in increment of 5)
- 120 cells: TS-BGT60(xxx)-G10 (xxx = 495-510, in increment of 5)
- 108 cells: SS-BGxxx-54MDH-G10(T) (xxx = 445-460, in increment of 5)
- 108 cells: TS-BGT54(xxx)-G10 (xxx = 445-460, in increment of 5)

Remark: xxx indicates output power from the front side only

Maximum system voltage:	1500V
Fuse rating:	30A
Electrical protection class:	Class II
Pollution degree:	1
Material group:	I
Design load (positive / negative):	3600Pa / 1600Pa
Safety factors:	1.5
Fire safety class:	Class C according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018)
Bifaciality coefficient (ϕ):	75% \pm 5%

Remark:

For detailed product information, please refer to CDF (Constructional Data Form)

Bifaciality coefficient (ϕ) = $(I_{sc_{rear}} / I_{sc_{front}})$ or $(P_{mpp_{rear}} / P_{mpp_{front}})$, whichever is smaller.The tolerance of bifaciality coefficient (ϕ) is claimed by client.

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