

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: 2022-07-04

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 + AC:2017 + AC:2018; 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 - 138
Manufacturer:	see Annex 1
Test Report No.:	492012066.001
File No.:	PVP12020/21P



TÜV NORD CERT GmbH
Certification Body
Consumer Products



Essen, 2022-07-04

Please also pay attention to the information stated overleaf.

Manufacturer:

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 inspection report no.:

862010664.001

Remark:

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



TÜV NORD CERT GmbH
Certification Body
Consumer Products

Description of product(s):

Module types:	Double Glass PV Modules with Half-cut 182mm Mono-crystalline Silicon Solar Cells: 144 cells: SS-BGxxx-72MDH (xxx=530-550, in steps of 5) 132 cells: SS-BGxxx-66MDH (xxx=485-505, in steps of 5) 120 cells: SS-BGxxx-60MDH (xxx=440-455, in steps of 5) 108 cells: SS-BGxxx-54MDH (xxx=400-410, in steps of 5) Remark: xxx indicates rated maximum power at STC
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 Mono-crystalline Silicon Solar Cells: 132 cells: SS-BGxxx-66MDH-G12 (xxx=650-670, in steps of 5) 120 cells: SS-BGxxx-60MDH-G12 (xxx=590-610, in steps of 5) 108 cells: SS-BGxxx-54MDH-G12 (xxx=530-545, in steps of 5) 96 cells: SS-BGxxx-48MDH-G12 (xxx=475-490, in steps of 5) 84 cells: SS-BGxxx-42MDH-G12 (xxx=415-425, in steps of 5) Remark: xxx indicates rated maximum power at STC
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):	70% \pm 5%



TÜV NORD CERT GmbH
Certification Body
Consumer Products

Module types:	SS-BG530-72MDH	SS-BG535-72MDH	SS-BG540-72MDH	SS-BG545-72MDH
Rated P _{mp} at STC (Front side only):	530W	535W	540W	545W
Rated P _{mp} power with albedo 13.5%:	580W	585W	590W	595W

Module types:	SS-BG550-72MDH	SS-BG485-66MDH	SS-BG490-66MDH	SS-BG495-66MDH
Rated P _{mp} at STC (Front side only):	550W	485W	490W	495W
Rated P _{mp} power with albedo 13.5%:	600W	530W	535W	540W

Module types:	SS-BG500-66MDH	SS-BG505-66MDH	SS-BG440-60MDH	SS-BG445-60MDH
Rated P _{mp} at STC (Front side only):	500W	505W	440W	445W
Rated P _{mp} power with albedo 13.5%:	545W	550W	480W	485W

Module types:	SS-BG450-60MDH	SS-BG455-60MDH	SS-BG400-54MDH	SS-BG405-54MDH
Rated P _{mp} at STC (Front side only):	450W	455W	400W	405W
Rated P _{mp} power with albedo 13.5%:	490W	495W	435W	440W

Module types:	SS-BG410-54MDH	SS-BG650-66MDH-G12	SS-BG655-66MDH-G12	SS-BG660-66MDH-G12
Rated P _{mp} at STC (Front side only):	410W	650W	655W	660W
Rated P _{mp} power with albedo 13.5%:	445W	710W	715W	720W



TÜV NORD CERT GmbH
Certification Body
Consumer Products

Module types:	SS-BG655-66MDH-G12	SS-BG670-66MDH-G12	SS-BG590-60MDH-G12	SS-BG595-60MDH-G12
Rated P _{mpp} at STC (Front side only):	665W	670W	590W	595W
Rated P _{mpp} power with albedo 13.5%:	725W	730W	645W	650W

Module types:	SS-BG600-60MDH-G12	SS-BG605-60MDH-G12	SS-BG610-60MDH-G12	SS-BG530-54MDH-G12
Rated P _{mpp} at STC (Front side only):	600W	605W	610W	530W
Rated P _{mpp} power with albedo 13.5%:	655W	660W	665W	580W

Module types:	SS-BG535-54MDH-G12	SS-BG540-54MDH-G12	SS-BG545-54MDH-G12	SS-BG475-48MDH-G12
Rated P _{mpp} at STC (Front side only):	535W	540W	545W	475W
Rated P _{mpp} power with albedo 13.5%:	585W	590W	595W	520W

Module types:	SS-BG480-48MDH-G12	SS-BG485-48MDH-G12	SS-BG490-48MDH-G12	SS-BG415-42MDH-G12
Rated P _{mpp} at STC (Front side only):	480W	485W	490W	415W
Rated P _{mpp} power with albedo 13.5%:	525W	530W	535W	455W



TÜV NORD CERT GmbH
Certification Body
Consumer Products

Module types:	SS-BG420- 42MDH-G12	SS-BG425- 42MDH-G12
Rated P _{mpp} at STC (Front side only):	420W	425W
Rated P _{mpp} power with albedo 13.5%:	460W	465W

Remark:

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

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.

Rated P_{mpp} power with albedo: comprehensive power of both sides, taken ϕ and albedo into consideration.

The albedo is claimed by client.



TÜV NORD CERT GmbH
Certification Body
Consumer Products