CERTIFICATE

TÜV NORD CERT GmbH
herewith declares that

Solar Solutions GmbH
Brückenstrasse 94
D-60594 Frankfurt am Main,
Germany

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

Description of product (details see Annex 2):

Double Glass PV Modules with 6" Mono-crystalline Silicon Solar Cells

Double Glass PV Modules with 6" Half-Cut Mono-crystalline Silicon Solar Cells

Double Glass PV Modules with 6" Mono-crystalline Silicon Bifacial Solar Cells

Double Glass PV Modules with 6" Half-Cut Mono-crystalline Silicon Bifacial Solar Cells

TÜV NORD
TÜV NORD CERT GmbH
Type Tested

Valid from: 2021-08-20
Valid until: 2025-11-22

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 21 406749 - 176
Manufacturer:	see Annex 1
Test Report No.:	492011653.001
File No.:	PVP02026/21P-02

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Essen, 2021-08-20

Please also pay attention to the information stated overleaf.

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Manufacturer:

Manufacturer:	**Coded by debitor no. 55506638**
Factory inspection report no.:	862010401.002

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:	**Double Glass PV Modules with 6" Mono-crystalline Silicon Solar Cells:** 72 cells: AS-M722-G(G1)-xxx/HV (xxx=380-390, in steps of 5) 72 cells: AS-M722W-G(G1)-xxx/HV (xxx=380-390, in steps of 5) 72 cells: AS-M722Z-G(G1)-xxx/HV (xxx=380-390, in steps of 5) 72 cells: AS-M722B-G(G1)-xxx/HV (xxx=380-390, in steps of 5) 60 cells: AS-M602-G(G1)-xxx/HV (xxx=315-325, in steps of 5) 60 cells: AS-M602W-G(G1)-xxx/HV (xxx=315-325, in steps of 5) 60 cells: AS-M602Z-G(G1)-xxx/HV (xxx=315-325, in steps of 5) 60 cells: AS-M602B-G(G1)-xxx/HV (xxx=315-325, in steps of 5) 72 cells: ES-M722-G(G1)-xxx/HV (xxx=380-390, in steps of 5) 72 cells: ES-M722W-G(G1)-xxx/HV (xxx=380-390, in steps of 5) 72 cells: ES-M722Z-G(G1)-xxx/HV (xxx=380-390, in steps of 5) 72 cells: ES-M722B-G(G1)-xxx/HV (xxx=380-390, in steps of 5) 60 cells: ES-M602-G(G1)-xxx/HV (xxx=315-325, in steps of 5) 60 cells: ES-M602W-G(G1)-xxx/HV (xxx=315-325, in steps of 5) 60 cells: ES-M602Z-G(G1)-xxx/HV (xxx=315-325, in steps of 5) 60 cells: ES-M602B-G(G1)-xxx/HV (xxx=315-325, in steps of 5)
Maximum system voltage:	1500V
Fuse rating:	20A
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 A or C according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018)

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Module types:	**Double Glass PV Modules with 6" Half-Cut Mono-crystalline Silicon Solar Cells:** 144 cells: AS-M1442-GH(G1)-xxx/HV (xxx=385-390, in steps of 5) 144 cells: AS-M1442W-GH(G1)-xxx/HV (xxx=385-390, in steps of 5) 144 cells: AS-M1442Z-GH(G1)-xxx/HV (xxx=385-390, in steps of 5) 144 cells: AS-M1442B-GH(G1)-xxx/HV (xxx=385-390, in steps of 5) 120 cells: AS-M1202-GH(G1)-xxx/HV (xxx=320-325, in steps of 5) 120 cells: AS-M1202W-GH(G1)-xxx/HV (xxx=320-325, in steps of 5) 120 cells: AS-M1202Z-GH(G1)-xxx/HV (xxx=320-325, in steps of 5) 120 cells: AS-M1202B-GH(G1)-xxx/HV (xxx=320-325, in steps of 5) 144 cells: ES-M1442-GH(G1)-xxx/HV (xxx=385-390, in steps of 5) 144 cells: ES-M1442W-GH(G1)-xxx/HV (xxx=385-390, in steps of 5) 144 cells: ES-M1442Z-GH(G1)-xxx/HV (xxx=385-390, in steps of 5) 144 cells: ES-M1442B-GH(G1)-xxx/HV (xxx=385-390, in steps of 5) 120 cells: ES-M1202-GH(G1)-xxx/HV (xxx=320-325, in steps of 5) 120 cells: ES-M1202W-GH(G1)-xxx/HV (xxx=320-325, in steps of 5) 120 cells: ES-M1202Z-GH(G1)-xxx/HV (xxx=320-325, in steps of 5) 120 cells: ES-M1202B-GH(G1)-xxx/HV (xxx=320-325, in steps of 5)
Maximum system voltage:	1500V
Fuse rating:	20A
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 A or C according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018)

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Module types:

Double Glass PV Modules with 6" Mono-crystalline Silicon Bifacial Solar Cells:

72 cells: AS-M722-B(M2)-xxx/HV (xxx=355-375, in step of 5)
72 cells: AS-M722Z-B(M2)-xxx/HV (xxx=355-375, in step of 5)
72 cells: AS-M722W-B(M2)-xxx/HV (xxx=355-375, in step of 5)
60 cells: AS-M602-B(M2)-xxx/HV (xxx=295-310, in step of 5)
60 cells: AS-M602Z-B(M2)-xxx/HV (xxx=295-310, in step of 5)
60 cells: AS-M602W-B(M2)-xxx/HV (xxx=295-310, in step of 5)
72 cells: AS-M722F-B(M2)-xxx/HV (xxx=355-375, in step of 5)
60 cells: AS-M602F-B(M2)-xxx/HV (xxx=295-310, in step of 5)
72 cells: AS-M722-B(G1)-xxx/HV (xxx=390-395, in steps of 5)
72 cells: AS-M722W-B(G1)-xxx/HV (xxx=390-395, in steps of 5)
72 cells: AS-M722Z-B(G1)-xxx/HV (xxx=390-395, in steps of 5)
72 cells: AS-M722B-B(G1)-xxx/HV (xxx=390-395, in steps of 5)
60 cells: AS-M602-B(G1)-xxx/HV (xxx=325-330, in steps of 5)
60 cells: AS-M602W-B(G1)-xxx/HV (xxx=325-330, in steps of 5)
60 cells: AS-M602Z-B(G1)-xxx/HV (xxx=325-330, in steps of 5)
60 cells: AS-M602B-B(G1)-xxx/HV (xxx=325-330, in steps of 5)
72 cells: ES-M722-B(M2)-xxx/HV (xxx=355-375, in step of 5)
72 cells: ES-M722Z-B(M2)-xxx/HV (xxx=355-375, in step of 5)
72 cells: ES-M722W-B(M2)-xxx/HV (xxx=355-375, in step of 5)
60 cells: ES-M602-B(M2)-xxx/HV (xxx=295-310, in step of 5)
60 cells: ES-M602Z-B(M2)-xxx/HV (xxx=295-310, in step of 5)
60 cells: ES-M602W-B(M2)-xxx/HV (xxx=295-310, in step of 5)
72 cells: ES-M722F-B(M2)-xxx/HV (xxx=355-375, in step of 5)
60 cells: ES-M602F-B(M2)-xxx/HV (xxx=295-310, in step of 5)
72 cells: ES-M722-B(G1)-xxx/HV (xxx=390-395, in steps of 5)
72 cells: ES-M722W-B(G1)-xxx/HV (xxx=390-395, in steps of 5)
72 cells: ES-M722Z-B(G1)-xxx/HV (xxx=390-395, in steps of 5)
72 cells: ES-M722B-B(G1)-xxx/HV (xxx=390-395, in steps of 5)
60 cells: ES-M602-B(G1)-xxx/HV (xxx=325-330, in steps of 5)
60 cells: ES-M602W-B(G1)-xxx/HV (xxx=325-330, in steps of 5)
60 cells: ES-M602Z-B(G1)-xxx/HV (xxx=325-330, in steps of 5)
60 cells: ES-M602B-B(G1)-xxx/HV (xxx=325-330, in steps of 5)

Remark: The power parameter included in the module types only indicates maximum power output of front side.

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

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Pollution degree:	1
Material group:	I
Design load (positive / negative):	3600Pa / 1600Pa
Safety factors:	1.5
Fire safety class:	Class A or C according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018)

Module types:

Double Glass PV Modules with 6" Half-Cut Mono-crystalline Silicon Bifacial Solar Cells:

144 cells: AS-M1442-BH(M2)-xxx/HV (xxx=360-370, in step of 5)
144 cells: AS-M1442Z-BH(M2)-xxx/HV (xxx=360-370, in step of 5)
120 cells: AS-M1202-BH(M2)-xxx/HV (xxx=300-305, in step of 5)
120 cells: AS-M1202Z-BH(M2)-xxx/HV (xxx=300-305, in step of 5)
144 cells: AS-M1442-BH(G1)-xxx/HV (xxx=390-395, in steps of 5)
144 cells: AS-M1442W-BH(G1)-xxx/HV (xxx=390-395, in steps of 5)
144 cells: AS-M1442Z-BH(G1)-xxx/HV (xxx=390-395, in steps of 5)
144 cells: AS-M1442B-BH(G1)-xxx/HV (xxx=390-395, in steps of 5)
120 cells: AS-M1202-BH(G1)-xxx/HV (xxx=325-330, in steps of 5)
120 cells: AS-M1202W-BH(G1)-xxx/HV (xxx=325-330, in steps of 5)
120 cells: AS-M1202Z-BH(G1)-xxx/HV (xxx=325-330, in steps of 5)
120 cells: AS-M1202B-BH(G1)-xxx/HV (xxx=325-330, in steps of 5)
144 cells: AS-M1442W-BH(M6)-xxx/HV (xxx=420-445, in step of 5)
144 cells: AS-M1442Y-BH(M6)-xxx/HV (xxx=420-445, in step of 5)
144 cells: AS-M1442Z-BH(M6)-xxx/HV (xxx=420-445, in step of 5)
144 cells: AS-M1442-BH(M6)-xxx/HV (xxx=420-445, in step of 5)
120 cells: AS-M1202W-BH(M6)-xxx/HV (xxx=350-370, in step of 5)
120 cells: AS-M1202Y-BH(M6)-xxx/HV (xxx=350-370, in step of 5)
120 cells: AS-M1202Z-BH(M6)-xxx/HV (xxx=350-370, in step of 5)
120 cells: AS-M1202-BH(M6)-xxx/HV (xxx=350-370, in step of 5)
144 cells: ES-M1442-BH(M2)-xxx/HV (xxx=360-370, in step of 5)
144 cells: ES-M1442Z-BH(M2)-xxx/HV (xxx=360-370, in step of 5)
120 cells: ES-M1202-BH(M2)-xxx/HV (xxx=300-305, in step of 5)
120 cells: ES-M1202Z-BH(M2)-xxx/HV (xxx=300-305, in step of 5)
144 cells: ES-M1442-BH(G1)-xxx/HV (xxx=390-395, in steps of 5)
144 cells: ES-M1442W-BH(G1)-xxx/HV (xxx=390-395, in steps of 5)
144 cells: ES-M1442Z-BH(G1)-xxx/HV (xxx=390-395, in steps of 5)
144 cells: ES-M1442B-BH(G1)-xxx/HV (xxx=390-395, in steps of 5)
120 cells: ES-M1202-BH(G1)-xxx/HV (xxx=325-330, in steps of 5)
120 cells: ES-M1202W-BH(G1)-xxx/HV (xxx=325-330, in steps of 5)

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	120 cells: ES-M1202Z-BH(G1)-xxx/HV (xxx=325-330, in steps of 5) 120 cells: ES-M1202B-BH(G1)-xxx/HV (xxx=325-330, in steps of 5) 144 cells: ES-M1442W-BH(M6)-xxx/HV (xxx=420-445, in step of 5) 144 cells: ES-M1442Y-BH(M6)-xxx/HV (xxx=420-445, in step of 5) 144 cells: ES-M1442Z-BH(M6)-xxx/HV (xxx=420-445, in step of 5) 144 cells: ES-M1442-BH(M6)-xxx/HV (xxx=420-445, in step of 5) 120 cells: ES-M1202W-BH(M6)-xxx/HV (xxx=350-370, in step of 5) 120 cells: ES-M1202Y-BH(M6)-xxx/HV (xxx=350-370, in step of 5) 120 cells: ES-M1202Z-BH(M6)-xxx/HV (xxx=350-370, in step of 5) 120 cells: ES-M1202-BH(M6)-xxx/HV (xxx=350-370, in step of 5) Remark: The power parameter included in the module types only indicates maximum power output of front side.
Maximum system voltage:	1500V
Fuse rating:	20A or 25A
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 A or C according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018)

Remark: For detailed information on classification of Fire Safety for different combination of raw materials, please refer to CDF (Constructional Data Form) in Annex 1 of test report.

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