

CERTIFICATE

Issued to:
Applicant:
Toenergy Technology Hangzhou Co., Ltd.
**No 3, Gaoxin Nine Road, Xiaoshan Economy and
Technology Development Zone
311215 Hangzhou City Zhejiang, China**

Licensee:
Toenergy Technology Hangzhou Co., Ltd.
**No 3, Gaoxin Nine Road, Xiaoshan Economy and
Technology Development Zone
311215 Hangzhou City Zhejiang, China**

Product : Photovoltaic (PV) Module(s)
Trade name(s) : TOENSOLAR
Type(s)/model(s) : PV module with mono c-Si cells and poly c-Si cells

The product and any acceptable variation thereto as specified in the Annex to this certificate and the documents therein referred to.

DEKRA hereby declares that the above-mentioned product has been certified on the basis of:

- a type test according to IEC 61215-1:2016, EN 61215-1:2016, IEC 61215-1-1:2016, EN 61215-1-1:2016, IEC 61215-2:2016, EN 61215-2:2017, IEC 61730-1:2016, EN IEC 61730-1:2018, IEC 61730-2:2016 and EN IEC 61730-2:2018
- a periodic surveillance
- a DEKRA certification agreement with the number 6059863

DEKRA hereby grants the right to use the DEKRA Seal certification mark.

DEKRA hereby grants the right to use the DEKRA Seal certification mark with the following content:

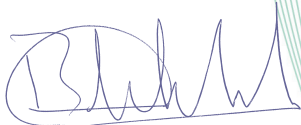
Category : Photovoltaic
Keyword : Module Tested
Keyword : Periodic Factory Inspection

The DEKRA Seal certification mark may be applied to the product as specified in this certificate for the duration and under the conditions of the DEKRA Seal certification agreement.

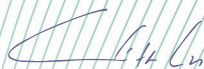
This certificate is issued on 6 July 2023 and expires at the latest on 30 March 2024.

Certificate number: 31-120337 REV.5

DEKRA Certification B.V.



B.T.M. Holtus
Managing Director



C. Lin
Certification Manager

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31-120337

SPECIFICATION OF THE CERTIFIED PRODUCT**Product data**

Product	: Photovoltaic (PV) Module(s)
Trade name(s)	: TOENSOLAR
Type(s)/model(s)	: 412918, 412919, 412920, 412921, 412922, 412923, 412924, 413540, 413541, 61414, 61415, 61416, 61791, 61798, 61849, 61878, TN-60xxxM, TN-60xxxMH, TN-72xxxM, TN-72xxxMH, TN-MG108-xxx, TN-MG120-xxx, TN-MG132-xxx and TN-MG144-xxx
Pollution Degree	: 1
Fire Rating	: Class C according to UL790

Product data – type 412918

Design	: PV module with mono c-Si cells
Maximum System Voltage	: 600V
Protection Class	: III
Description	: 40W, 44 cells

Product data – type 412919

Design	: PV module with mono c-Si cells
Maximum System Voltage	: 600V
Protection Class	: III
Description	: 65W, 39 cells

Product data – type 412920

Design	: PV module with mono c-Si cells
Maximum System Voltage	: 600V
Protection Class	: III
Description	: 40W, 44 cells

Product data – type 412921

Design	: PV module with mono c-Si cells
Maximum System Voltage	: 600V
Protection Class	: III
Description	: 65W, 39 cells

Product data – type 412922

Design	: PV module with mono c-Si cells
Maximum System Voltage	: 600V
Protection Class	: III
Description	: 85W, 44 cells

Product data – type 412923

Design	: PV module with mono c-Si cells
Maximum System Voltage	: 600V
Protection Class	: III
Description	: 135W, 44 cells

Product data – type 412924

Design	: PV module with mono c-Si cells
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Maximum System Voltage : 600V
Protection Class : III
Description : 105W, 72 cells

Product data – type 413540

Design : PV module with mono c-Si cells
Maximum System Voltage : 600V
Protection Class : III
Description : 40W, 44 cells

Product data – type 413541

Design : PV module with mono c-Si cells
Maximum System Voltage : 600V
Protection Class : III
Description : 65W, 39 cells

Product data – type 61414

Design : PV module with mono c-Si cells
Maximum System Voltage : 30V
Protection Class : III
Description : 60W, 48 cells

Product data – type 61415

Design : PV module with poly c-Si cells
Maximum System Voltage : 30V
Protection Class : III
Description : 40W, 46 cells

Product data – type 61416

Design : PV module with mono c-Si cells
Maximum System Voltage : 30V
Protection Class : III
Description : 85W, 84 cells

Product data – type 61791

Design : PV module with mono c-Si cells
Maximum System Voltage : 600V
Protection Class : III
Description : 135W, 44 cells

Product data – type 61798

Design : PV module with mono c-Si cells
Maximum System Voltage : 600V
Protection Class : III
Description : 85W, 44 cells

Product data – type 61849

Design : PV module with mono c-Si cells
Maximum System Voltage : 600V
Protection Class : III

Description : 105W, 72 cells

Product data – type 61878

Design : PV module with mono c-Si cells
Maximum System Voltage : 600V
Protection Class : III
Description : 240W, 66 cells

Product data – type TN-60xxxM

Design : PV module with mono c-Si cells
Maximum System Voltage : 1500V
Protection Class : II
Description : xxx=320-340, in steps of 5, 120 cells

Product data – type TN-60xxxMH

Design : PV module with mono c-Si cells
Maximum System Voltage : 1500V
Protection Class : II
Description : xxx=360-375, in steps of 5, 120 cells

Product data – type TN-72xxxM

Design : PV module with mono c-Si cells
Maximum System Voltage : 1500V
Protection Class : II
Description : xxx=380-410, in steps of 5, 144 cells

Product data – type TN-72xxxMH

Design : PV module with mono c-Si cells
Maximum System Voltage : 1500V
Protection Class : II
Description : xxx=430-455, in steps of 5, 144 cells

Product data – type TN-MG108-xxx

Design : PV module with mono cut c-Si cells
Maximum System Voltage : 1500V
Protection Class : II
Description : xxx=390-415, in steps of 5, 108 cells

Product data – type TN-MG120-xxx

Design : PV module with mono cut c-Si cells
Maximum System Voltage : 1500V
Protection Class : II
Description : xxx=435-460, in steps of 5, 120 cells

Product data – type TN-MG132-xxx

Design : PV module with mono cut c-Si cells
Maximum System Voltage : 1500V
Protection Class : II
Description : xxx=480-505, in steps of 5, 132 cells

Product data – type TN-MG144-xxx

Design	: PV module with mono cut c-Si cells
Maximum System Voltage	: 1500V
Protection Class	: II
Description	: xxx=525-555, in steps of 5, 144 cells

TESTS**Test requirements**

IEC 61215-1:2016
EN 61215-1:2016
IEC 61215-1-1:2016
EN 61215-1-1:2016
IEC 61215-2:2016
EN 61215-2:2017
IEC 61730-1:2016
EN IEC 61730-1:2018
IEC 61730-2:2016
EN IEC 61730-2:2018

Test result

The test results are laid down in DEKRA test file 609688600.

Additional information

This certificate replaces certificate No. 31-120337 REV.4 which we hereby declare invalid.

The list of components is laid down in test report 6096886B.55A; 6096886B.55B.


Conclusion

The examination proved that all requirements were met.

Factory locations

Toenergy Technology Hangzhou Co., Ltd.
No 3, Gaoxin Nine Road, Xiaoshan Economy and Technology Development Zone
311215 Hangzhou City Zhejiang, China

Toenergy Solar SDN BHD.
No.6, Jalan Mutiara 6, Taman Perindustrian Plentong
81750 Johor Bahru, Johor, Malaysia

Trade name(s): TOENSOLAR stands for  **TOENERGY**
Way to Solar Energy

Unique Identifier

