



Product Service

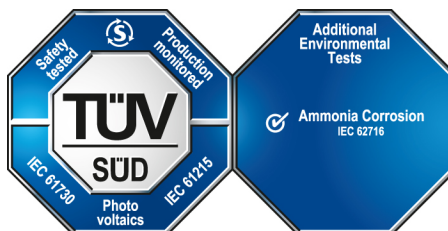
CERTIFICATE

No. Z2 099333 0043 Rev. 25

Holder of Certificate: **LONGi Green Energy Technology Co., Ltd.**

No. 388, Middle Hangtian Road
Chang'an District
710100 Xi'an City, Shaanxi
PEOPLE'S REPUBLIC OF CHINA

Certification Mark:



Product:

Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
Mono-Crystalline Silicon Photovoltaic Module

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition, the certification holder must not transfer the certificate to third parties. This certificate is valid until the listed date, unless it is cancelled earlier. All applicable requirements of the Testing, Certification, Validation and Verification Regulations of TÜV SÜD Group have to be complied. For details see: www.tuvsud.com/ps-cert

Test report no.: 704061802007-26

Valid until: 2029-07-10

Date, 2024-11-05

(Zhulin Zhang)

CERTIFICATE

No. Z2 099333 0043 Rev. 25

Model(s):

LR6-72BP-xxxM (xxx=350 to 380, in step of 5)
 LR6-60BP-xxxM (xxx=290 to 315, in step of 5)
 LR6-72DG-xxxM (xxx=330 to 360, in step of 5)
 LR6-60DG-xxxM (xxx=275 to 300, in step of 5)
 LR6-72PD-xxxM (xxx=345 to 370, in step of 5)
 LR6-60PD-xxxM (xxx=290 to 305, in step of 5)
 LR6-72HBD-xxxM (xxx=360 to 395, in step of 5)
 LR6-60HBD-xxxM (xxx=300 to 325, in step of 5)
 LR6-72HIBD-xxxM (xxx=360 to 380, in step of 5)
 LR6-60HIBD-xxxM (xxx=300 to 325, in step of 5)
 LR6-78HBD-xxxM (xxx=395 to 410, in step of 5)
 LR6-78HIBD-xxxM (xxx=395 to 410, in step of 5)
 LR6-72OPD-xxxM (xxx=370 to 410, in step of 5)
 LR6-60OPD-xxxM (xxx=325 to 345, in step of 5)
 LR6-72HPD-xxxM (xxx=360 to 385, in step of 5)
 LR6-60HPD-xxxM (xxx=300 to 320, in step of 5)
 LR6-72MBD-xxxM (xxx=365 to 385, in step of 5)
 LR6-60MBD-xxxM (xxx=305 to 320, in step of 5)
 LR6-72MPD-xxxM (xxx=365 to 385, in step of 5)
 LR6-60MPD-xxxM (xxx=305 to 320, in step of 5)
 LR6-78OPD-xxxM (xxx=425)
 LR6-72HBD-xxxMC (xxx=360 to 395, in step of 5)
 LR6-60HBD-xxxMC (xxx=300 to 325, in step of 5)
 LR6-72HIBD-xxxMC (xxx=360 to 380, in step of 5)
 LR6-60HIBD-xxxMC (xxx=300 to 325, in step of 5)
 LR4-72HBD-xxxM (xxx=415 to 455, in step of 5)
 LR4-60HBD-xxxM (xxx=345 to 375, in step of 5)
 LR4-72HIBD-xxxM (xxx=415 to 450, in step of 5)
 LR4-60HIBD-xxxM (xxx=345 to 375, in step of 5)
 LR4-78HBD-xxxM (xxx=470 to 495, in step of 5)
 LR4-78ZBD-xxxM (xxx=460 to 485, in step of 5)
 LR5-72HBD-xxxM (xxx=500 to 565, in step of 5)
 LR5-66HBD-xxxM (xxx=475 to 515, in step of 5)
 LR5-72HIBD-xxxM (xxx=500 to 565, in step of 5)
 LR5-66HIBD-xxxM (xxx=475 to 515, in step of 5)
 LR5-78ZBD-xxxM (xxx=565 to 580, in step of 5)
 LR5-78HBD-xxxM (xxx=570 to 605, in step of 5)
 LR5-72HND-xxxM (xxx=540 to 580, in step of 5)
 LR5-66HND-xxxM (xxx=495 to 530, in step of 5)
 LR5-60HND-xxxM (xxx=450 to 480, in step of 5)
 LR5-54HND-xxxM (xxx=405 to 435, in step of 5)
 LR5-72HTD-xxxM (xxx=550 to 600, in step of 5)
 LR5-60HBD-xxxM (xxx=435 to 470, in step of 5)
 LR5-60HIBD-xxxM (xxx=435 to 470, in step of 5)
 LR5-54HBD-xxxM (xxx=390 to 425, in step of 5)
 LR5-54HIBD-xxxM (xxx=390 to 425, in step of 5)
 LR5-72HBD-xxxMa (xxx=500 to 565, in step of 5)
 LR5-72HBD-xxxMc (xxx=500 to 565, in step of 5)
 LR5-72HGD-xxxM (xxx=540 to 595, in step of 5)
 LR5-72HBD-HD-xxxM (xxx=500 to 565, in step of 5)
 LR7-72HGD-xxxM (xxx=565 to 635, in step of 5)
 LGi5-72HTD-xxxM (xxx=550 to 600, in step of 5)
 LR5-54HTD-xxxM (xxx=415 to 450, in step of 5)
 LR5-72HJD-xxxM (xxx=575 to 595, in step of 5)
 LR7-72HJD-xxxM (xxx=600 to 655, in step of 5)
 LR5-54HABB-xxxM (xxx=395 to 415, in step of 5)
 LR5-54HIBB-xxxM (xxx=395 to 415, in step of 5)
 LR5-54HABD-xxxM (xxx=395 to 420, in step of 5)
 LR5-72HTDR-xxxM (xxx=550 to 600, in step of 5)
 LR5-72HGD-xxxMc (xxx=560 to 590, in step of 5)
 LR5-72HBD-xxxMc1 (xxx=500 to 565, in step of 5)
 LR5-72HBD-xxxMc2 (xxx=500 to 565, in step of 5)



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LR5-78HGD-xxxM (xxx=610 to 645, in step of 5)
 LR5-54HTBB-xxxM (xxx=410 to 435, in step of 5)
 LR5-54HTDB-xxxM (xxx=395 to 430, in step of 5)
 LR8-66HGD-xxxM (xxx=595 to 625, in step of 5)
 LR8-48HGD-xxxM (xxx=430 to 455, in step of 5)
 LR7-72HTDR-xxxM (xxx=585 to 625, in step of 5)
 LR7-66HTDR-xxxM (xxx=535 to 575, in step of 5)
 LR7-60HTDR-xxxM (xxx=485 to 525, in step of 5)
 LR7-54HTDR-xxxM (xxx=435 to 475, in step of 5)
 LR7-72HYD-xxxM (xxx=625 to 660, in step of 5)
 LR7-48HGD-xxxM (xxx=385 to 415, in step of 5)
 LR7-54HGBB-xxxM (xxx=440 to 460, in step of 5)
 LR8-66HYD-xxxM (xxx=625 to 655, in step of 5, 132cells)
 xxx is standing for rated output power at STC.

Parameters:

Safety Class:	Class II
Maximum System Voltage:	1500 V DC
Fire safety Class:	Class C according to UL790
Construction:	Framed or framless, with Junction box, Cable and Connectors.

Tested according to:

IEC 61215-1:2016
 IEC 61215-1-1:2016
 IEC 61215-2:2016
 IEC 61730-1:2016
 IEC 61730-2:2016
 IEC 62716:2013



Product Service

Attestation of Conformity

No. N8A 099333 0110 Rev. 05**Holder of Attestation: LONGi Green Energy Technology Co., Ltd.**

No. 388, Middle Hangtian Road
Chang'an District
710100 Xi'an City, Shaanxi
PEOPLE'S REPUBLIC OF CHINA

**Product: Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
Mono-crystalline Silicon Photovoltaic Module**

This Attestation of Conformity is issued on a voluntary basis according to the Low Voltage Directive 2014/35/EU relating to electrical equipment designed for use within certain voltage limits. It confirms that the listed equipment complies with the principal protection requirements of the directive and is based on the technical specifications applicable at the time of issuance. It refers only to the particular sample submitted for conformity assessment. For details see: www.tuvsud.com/ps-cert

Test report no.: 704062401208-05**Date,** 2024-12-04

(Zhulin Zhang)

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This Attestation does not replace the regulatory EU Declaration of Conformity (DoC) and does not allow for CE marking. After preparation of the necessary documentation and establishing compliance to requirements of all applicable directives, the manufacturer may sign a DoC and apply the CE marking. The DoC is issued under the sole responsibility of the manufacturer.



Product Service

Attestation of Conformity

No. N8A 099333 0110 Rev. 05

Model(s):

LR5-72HBD-xxxM (xxx=500 to 565, in step of 5)
 LR5-66HBD-xxxM (xxx=475 to 515, in step of 5)
 LR5-72HIBD-xxxM (xxx=500 to 565, in step of 5)
 LR5-66HIBD-xxxM (xxx=475 to 515, in step of 5)
 LR5-60HBD-xxxM (xxx=435 to 470, in step of 5)
 LR5-54HBD-xxxM (xxx=390 to 425, in step of 5)
 LR5-60HIBD-xxxM (xxx=435 to 470, in step of 5)
 LR5-54HIBD-xxxM (xxx=390 to 425, in step of 5)
 LR5-78HBD-xxxM (xxx=570 to 605, in step of 5)
 LR5-72HBD-xxxMa (xxx=500 to 565, in step of 5)
 LR5-72HBD-xxxMc (xxx=500 to 565, in step of 5)
 LR5-72HBD-xxxMc1 (xxx=530 to 565, in step of 5)
 LR5-72HBD-xxxMc2 (xxx=530 to 565, in step of 5)
 LR5-54HABB-xxxM (xxx=395 to 415, in step of 5)
 LR5-54HIBB-xxxM (xxx=395 to 415, in step of 5)
 LR5-54HABD-xxxM (xxx=395 to 420, in step of 5)
 LR5-72HBD-HD-xxxM (xxx=500 to 565, in step of 5)
 LR5-72HGD-xxxM (xxx=540 to 590, in step of 5)
 LR5-72HGD-xxxMc (xxx=560 to 590, in step of 5)
 LR7-72HGD-xxxM (xxx=565 to 635, in step of 5)
 LR5-72HJD-xxxM (xxx=575 to 595, in step of 5)
 LR5-72HTDR-xxxM (xxx=550 to 600, in step of 5)
 LR5-72HTD-xxxM (xxx=550 to 600, in step of 5)
 LR5-54HTD-xxxM (xxx=415 to 450, in step of 5)
 LR8-66HGD-xxxM (xxx=595 to 625, in step of 5)
 LR8-48HGD-xxxM (xxx=430 to 455, in step of 5)
 LR7-72HTDR-xxxM (xxx=585 to 625, in step of 5)
 LR7-66HTDR-xxxM (xxx=535 to 575, in step of 5)
 LR7-60HTDR-xxxM (xxx=485 to 525, in step of 5)
 LR7-54HTDR-xxxM (xxx=435 to 475, in step of 5)
 LR7-72HYD-xxxM (xxx=625 to 660, in step of 5)
 LR7-48HGD-xxxM (xxx=385 to 415, in step of 5)
 LR7-54HGBB-xxxM (xxx=440 to 460, in step of 5)
 LR8-66HYD-xxxM (xxx=625 to 650, in step of 5)
 LGi7-72HTD-xxxM (xxx=585 to 625, in step of 5)
 LR7-72HVD-xxxM (xxx=625 to 660, in step of 5)
 xxx stands for rated output power at STC.

Parameters:

Fire Safety Class:	Class A or C according to UL790.
Safety Class:	Class II
Max. System Voltage:	1500V DC
Test Laboratory:	China Telecommunication Technology Labs. CuiHu Cloud Center, No.1 Gaolizhang Road, Wenquan Town Haidian District, Beijing, China.
Construction:	Framed, with Junction box, cable and connector.

Tested according to:

EN IEC 61730-1:2018
 EN IEC 61730-2:2018

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This Attestation does not replace the regulatory EU Declaration of Conformity (DoC) and does not allow for CE marking. After preparation of the necessary documentation and establishing compliance to requirements of all applicable directives, the manufacturer may sign a DoC and apply the CE marking. The DoC is issued under the sole responsibility of the manufacturer.



Product Service

CERTIFICATE

No. Z2 099333 0039 Rev. 37

Holder of Certificate: **LONGi Green Energy Technology Co., Ltd.**
No. 388, Middle Hangtian Road
Chang'an District
710100 Xi'an City, Shaanxi
PEOPLE'S REPUBLIC OF CHINA

Certification Mark:



Product: **Crystalline Silicon Terrestrial Photovoltaic (PV) Modules**
Mono-Crystalline Silicon Photovoltaic Module

The product was tested on a voluntary basis and complies with the essential requirements. The certification mark shown above can be affixed on the product. It is not permitted to alter the certification mark in any way. In addition, the certification holder must not transfer the certificate to third parties. This certificate is valid until the listed date, unless it is cancelled earlier. All applicable requirements of the Testing, Certification, Validation and Verification Regulations of TÜV SÜD Group have to be complied. For details see: www.tuvsud.com/ps-cert

Test report no.: 704061700509-39

Valid until: 2029-12-03

Date, 2024-12-04

(Zhulin Zhang)

CERTIFICATE

No. Z2 099333 0039 Rev. 37

Model(s):

LR6-72BP-xxxM (xxx=350 to 380, in step of 5)
 LR6-60BP-xxxM (xxx=290 to 315, in step of 5)
 LR6-72DG-xxxM (xxx=330 to 360, in step of 5)
 LR6-60DG-xxxM (xxx=275 to 300, in step of 5)
 LR6-72PD-xxxM (xxx=345 to 370, in step of 5)
 LR6-60PD-xxxM (xxx=290 to 305, in step of 5)
 LR6-72HBD-xxxM (xxx=360 to 395, in step of 5)
 LR6-60HBD-xxxM (xxx=300 to 325, in step of 5)
 LR6-72HIBD-xxxM (xxx=360 to 380, in step of 5)
 LR6-60HIBD-xxxM (xxx=300 to 325, in step of 5)
 LR6-78HBD-xxxM (xxx=395 to 410, in step of 5)
 LR6-78HIBD-xxxM (xxx=395 to 410, in step of 5)
 LR6-72OPD-xxxM (xxx=370 to 410, in step of 5)
 LR6-60OPD-xxxM (xxx=325 to 345, in step of 5)
 LR6-72HPD-xxxM (xxx=360 to 385, in step of 5)
 LR6-60HPD-xxxM (xxx=300 to 320, in step of 5)
 LR6-72MBD-xxxM (xxx=365 to 385, in step of 5)
 LR6-60MBD-xxxM (xxx=305 to 320, in step of 5)
 LR6-72MPD-xxxM (xxx=365 to 385, in step of 5)
 LR6-60MPD-xxxM (xxx=305 to 320, in step of 5)
 LR6-78OPD-xxxM (xxx=425)
 LR6-72HBD-xxxMC (xxx=360 to 395, in step of 5)
 LR6-60HBD-xxxMC (xxx=300 to 325, in step of 5)
 LR6-72HIBD-xxxMC (xxx=360 to 380, in step of 5)
 LR6-60HIBD-xxxMC (xxx=300 to 325, in step of 5)
 LR4-72HBD-xxxM (xxx=415 to 455, in step of 5)
 LR4-60HBD-xxxM (xxx=345 to 375, in step of 5)
 LR4-72HIBD-xxxM (xxx=415 to 450, in step of 5)
 LR4-60HIBD-xxxM (xxx=345 to 375, in step of 5)
 LR4-78HBD-xxxM (xxx=470 to 495, in step of 5)
 LR4-78ZBD-xxxM (xxx=460 to 485, in step of 5)
 LR5-72HBD-xxxM (xxx=500 to 565, in step of 5)
 LR5-66HBD-xxxM (xxx=475 to 515, in step of 5)
 LR5-72HIBD-xxxM (xxx=500 to 565, in step of 5)
 LR5-66HIBD-xxxM (xxx=475 to 515, in step of 5)
 LR5-60HBD-xxxM (xxx=435 to 470, in step of 5)
 LR5-54HBD-xxxM (xxx=390 to 425, in step of 5)
 LR5-60HIBD-xxxM (xxx=435 to 470, in step of 5)
 LR5-54HIBD-xxxM (xxx=390 to 425, in step of 5)
 LR5-78ZBD-xxxM (xxx=565 to 580, in step of 5)
 LR5-78HBD-xxxM (xxx=570 to 605, in step of 5)
 LR5-72HND-xxxM (xxx=540 to 580, in step of 5)
 LR5-66HND-xxxM (xxx=495 to 530, in step of 5)
 LR5-60HND-xxxM (xxx=450 to 480, in step of 5)
 LR5-54HND-xxxM (xxx=405 to 435, in step of 5)
 LR5-72HTD-xxxM (xxx=550 to 600, in step of 5)
 LGi6-32HPDH-xxxRM (xxx=162 to 171, in step of 3)
 LGi4-22HPD-xxxRM (xxx=129 to 138, in step of 3)
 LGi4-48HBD-xxxRM (xxx=285 to 310, in step of 5)
 LGi4-72HBC-xxxWM (xxx=360 to 410, in step of 5)
 LGi4-66HBC-xxxWM (xxx=330 to 375, in step of 5)
 LGi4-60HBC-xxxWM (xxx=300 to 340, in step of 5)
 LGi4-54HBC-xxxWM (xxx=270 to 305, in step of 5)
 LGi4-48HBC-xxxWM (xxx=240 to 270, in step of 5)
 LGi4-44HBC-xxxWM (xxx=220 to 250, in step of 5)
 LGi4-40HBC-xxxWM (xxx=200 to 225, in step of 5)
 LGi4-36HBC-xxxWM (xxx=180 to 204, in step of 3)
 LGi4-32HBC-xxxWM (xxx=162 to 180, in step of 3)
 LR5-72HBD-xxxMa (xxx=500 to 565, in step of 5)
 LR5-72HBD-xxxMc (xxx=500 to 565, in step of 5)
 LR5-72HBD-xxxMc1 (xxx=530 to 565, in step of 5)
 LR5-72HBD-xxxMc2 (xxx=530 to 565, in step of 5)
 LR5-72HGD-xxxM (xxx=540 to 595, in step of 5)
 LR5-72HGD-xxxMc (xxx=560 to 590, in step of 5)
 LR5-72HBD-HD-xxxM (xxx=500 to 565, in step of 5)
 LGi5-72HBD-xxxM (xxx=500 to 565, in step of 5)
 LR5-54HABB-xxxM (xxx=395 to 415, in step of 5)
 LR5-54HIBB-xxxM (xxx=395 to 415, in step of 5)
 LR5-54HABD-xxxM (xxx=395 to 420, in step of 5)
 LR7-72HGD-xxxM (xxx=565 to 635, in step of 5)

CERTIFICATE

No. Z2 099333 0039 Rev. 37

LR5-54HTD-xxxM (xxx=415 to 450, in step of 5)
LGi5-72HTD-xxxM (xxx=550 to 600, in step of 5)
LR5-72HJD-xxxM (xxx=575 to 595, in step of 5)
LR7-72HJD-xxxM (xxx=600 to 655, in step of 5)
LR5-78HGD-xxxM (xxx=610 to 645, in step of 5)
LR5-54HTBB-xxxM (xxx=410 to 435, in step of 5)
LR5-72HTDR-xxxM (xxx=550 to 600, in step of 5)
LR5-54HTDB-xxxM (xxx=395 to 430, in step of 5)
LR8-66HGD-xxxM (xxx=595 to 625, in step of 5)
LR8-48HGD-xxxM (xxx=430 to 455, in step of 5)
LR7-72HTDR-xxxM (xxx=585 to 625, in step of 5)
LR7-66HTDR-xxxM (xxx=535 to 575, in step of 5)
LR7-60HTDR-xxxM (xxx=485 to 525, in step of 5)
LR7-54HTDR-xxxM (xxx=435 to 475, in step of 5)
LR7-72HYD-xxxM (xxx=625 to 660, in step of 5)
LR7-48HGD-xxxM (xxx=385 to 415, in step of 5)
LR7-54HGBB-xxxM (xxx=440 to 460, in step of 5)
LR8-66HYD-xxxM (xxx=625 to 655, in step of 5)
LGi7-72HTD-xxxM (xxx=585 to 625, in step of 5)
LR7-72HVD-xxxM (xxx=625 to 660, in step of 5)
xxx stands for rated output power at STC.

Parameters:

Fire Safety Class:	Class A or C according to UL790.
Safety Class:	Class II
Max. System Voltage:	1500V DC
Test Laboratory:	Yangzhou Opto-Electrical Products Testing Institute, No. 10 West Kaifa Road, Yangzhou, 225009 Jiangsu, P. R. China.
Construction:	Frameless or framed, with Junction box, cable and connector.

Tested according to:

IEC 61215-1:2016
IEC 61215-1-1:2016
IEC 61215-2:2016
IEC 61730-1:2016
IEC 61730-2:2016
EN IEC 61730-1:2018
EN IEC 61730-1:2018/AC:2018-06
EN IEC 61730-2:2018
EN IEC 61730-2:2018/AC:2018-06

CE Declaration of Conformity

Manufacturer: LONGi Solar Technology Co., Ltd.
Address: No.8369 Shangyuan Road, 710018 Xi'an City, Shaanxi, PRC
Product: Photovoltaic (PV) Module
Brand: LONGi
Model(s):

- LR5-54 ZZZ XXX M LR5-66 ZZZ XXX M LR5-72 ZZZ XXX M
- LR7-54 ZZZ XXX M LR7-60 ZZZ XXX M LR7-72 ZZZ XXX M

ZZZ stands for module type (HPH, HPB, HTH, HTHF, HTB, HTD, HBD, HGD, HTDB, HTDR)
XXX indicates module nameplate power in Watt.

LONGi Solar Technologie GmbH herewith confirms that its PV modules comply with the requirements set out in the European Union Directive 2014/35/EU (Low Voltage Directive – LVD) for the electrical equipment used in certain voltage limits. For the evaluation of the conformance with these Directives, the following IEC standards were applied:

- IEC 61215-1:2016 (Terrestrial PV modules - Design qualification and type approval)
- IEC 61730-1:2016 (Photovoltaic (PV) module safety qualification)

based on: report 704061700516-X issued by TÜV Süd for 1.500 V monofacial products
report 704061802022-X issued by TÜV Süd for 1.000 V monofacial products
report 704061700509-X issued by TÜV Süd for 1.500 V bifacial products

Responsible for making this declaration is the manufacturer and/or it's authorized representative within the European Union (LONGi Solar Technologie GmbH).

Europe Service Department
i.A.



Director of Europe Service Department
June 14th, 2024



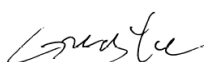
Certificate of Conformity

Certificate Number: CN-PV-220238

On the basis of the tests undertaken, the sample<s> of the below product have been found to comply with the requirements of the referenced specification<s>/standard<s> at the time the tests were carried out. It does not imply that Intertek has performed any surveillance or control of the manufacture(s). The manufacturer(s) shall ensure that the manufacturing process assures compliance of the production units with the examined products mentioned in this certificate.

Applicant:	Shenzhen SOFARSOLAR Co., Ltd. 11/F., Gaoxinqi Technology Building, No.67 Area, Xingdong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, China
Product:	Solar Grid-tied Inverter
Ratings & Principle Characteristics:	See appendix of Certificate of Conformity
Model:	SOFAR 3.3KTLX-G3, SOFAR 4.4KTLX-G3, SOFAR 5KTLX-G3-A SOFAR 5.5KTLX-G3, SOFAR 6.6KTLX-G3, SOFAR 8.8KTLX-G3, SOFAR 8.8KTLX-G3-A, SOFAR 11KTLX-G3, SOFAR 10KTLX-G3-A SOFAR 11KTLX-G3-A, SOFAR 12KTLX-G3
Brand Name<s>:	
Product Complies with:	Ordinul ANRE Nr. 208/14.12.2018 For the approval of the Technical Regulation concerning the technical requirements for connection to electricity networks of public interest for generating modules, power plants consisting of generating modules and power plants consisting of offshore generating modules (offshore) Type approval for type B
Certificate Issuing Office Name & Address:	Intertek Testing Services Ltd. Shanghai West Area, 2 nd Floor, No. 707, Zhangyang Road China (Shanghai) Pilot Free Trade Zone, Shanghai, P. R. China
Test Report No.<s>:	221010042GZU-001

Additional information in Appendix.



Signature

Certification Manager: Grady Ye

Date: 10 November 2022

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-220238.

MODEL	SOFAR 3.3KTLX-G3	SOFAR 4.4KTLX-G3	SOFAR 5KTLX-G3-A	SOFAR 5.5KTLX-G3
Max PV voltage	1100Vdc			
MPPT Voltage range	140-1000Vdc			
Max. input current	15/15A			
PV Isc	22.5/22.5A			
Rated power(W)	3000	4000	5000	5000
Max.apparent power (VA)	3300	4400	5000	5500
Max output current	5.0 A	6.7 A	7.6 A	8.3 A
Output voltage	3/N/PE 220Vac/380Vac, 230Vac/400Vac			
Nominal Frequency	50 Hz			
Power Factor	1 default (adjustable+/-0.8)			
Ambient Temperature	-30°C - +60°C			
Protection Degree	IP65			
Protection Class	Class I			
Software Version	V000001			

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-220238.

MODEL	SOFAR 6.6KTLX-G3	SOFAR 8.8KTLX-G3	SOFAR 8.8KTLX-G3-A	SOFAR 10KTLX-G3-A
Max PV voltage	1100Vdc			
MPPT Voltage range	140-1000Vdc			
Max. input current	15/15A		15/30A	
PV Isc	22.5/22.5A		22.5A/45A	
Rated power(W)	6000	8000	8000	10000
Max.apparent power (VA)	6600	8800	8800	10000
Max output current	10.0 A	13.3 A	13.3 A	15.2 A
Output voltage	3/N/PE 220Vac/380Vac, 230Vac/400Vac			
Nominal Frequency	50 Hz			
Power Factor	1 default (adjustable+/-0.8)			
Ambient Temperature	-30°C - +60°C			
Protection Degree	IP65			
Protection Class	Class I			
Software Version	V000001			

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APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-220238.

MODEL	SOFAR 11KTLX-G3	SOFAR 11KTLX-G3-A	SOFAR 12KTLX-G3
Max PV voltage	1100Vdc		
MPPT Voltage range	140-1000Vdc		
Max. input current	15A/15A	15A/30A	
PV Isc	22.5/22.5A	22.5A/45A	
Rated power(W)	10000	10000	12000
Max.apparent power (VA)	11000	11000	13200
Max output current	16.7 A	16.7 A	20.0 A
Output voltage	3/N/PE 220Vac/380Vac, 230Vac/400Vac		
Nominal Frequency	50 Hz		
Power Factor	1 default (adjustable+/-0.8)		
Ambient Temperature	-30°C - +60°C		
Protection Degree	IP65		
Protection Class	Class I		
Software Version	V000001		

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VERIFICATION OF RED COMPLIANCE

Verification No.: GZCR2109020996PVV

Applicant: Shenzhen SOFARSOLAR Co., Ltd.

Address of Applicant: 401, Building 4, Antongda Industrial Park, District 68, Xingdong Community, Xinan Street, Baoan District, Shenzhen, China

Manufacturer: Shenzhen SOFARSOLAR Co., Ltd.

Address of Manufacturer: 401, Building 4, Antongda Industrial Park, District 68, Xingdong Community, Xinan Street, Baoan District, Shenzhen, China

Factory: Dongguan SOFAR SOLAR Co., Ltd.

Address of Factory: 1F - 6F, Building E, No. 1 JinQi Road, Bihu Industrial Park, Wulian, Village, Fenggang Town, Dongguan City

Product Description: PV inverter

Model No.: SOFAR 3.3KTLX-G3, SOFAR 4.4KTLX-G3, SOFAR 5KTLX-G3-A, SOFAR 5.5KTLX-G3, SOFAR 6.6KTLX-G3, SOFAR 8.8KTLX-G3-A, SOFAR 8.8KTLX-G3, SOFAR 10KTLX-G3-A, SOFAR 11KTLX-G3-A, SOFAR 11KTLX-G3, SOFAR 12KTLX-G3

Trade Mark: 

Sufficient samples of the product have been tested and found to be in conformity with

Test Standards: EN 61000-6-3: 2007+A1:2011, EN IEC 61000-6-1: 2019
EN 301 489-1 V2.2.3, EN 301 489-17 V3.2.4
EN 300 328 V2.2.2, EN 62479: 2010

As shown in the

Test Report Number(s): GZCR210902099601, GZCR210902099602
GZCR210902099603, GZCR210902099604

Based on a review of the test report(s) detailed above, this apparatus meets the requirements of above standards. The product is in conformity with the essential requirements of Article 3.1 (a) the protection of the health, 3.1 (b) an adequate level of electromagnetic compatibility and 3.2 effective use of the spectrum of 2014/53/EU. The CE mark as shown below can be used, under the responsibility of the manufacturer, after completion of an EU Declaration of Conformity and compliance with all relevant EU Directives.



Date: 2021-10-14

Test Verification of Conformity

Verification Number: 211108059GZU-VOC005

On the basis of the referenced test report(s), sample(s) tested of the below product have been found to comply with the standards harmonized with the directives listed on this verification at the time the tests were carried out. Other standards and Directives may be relevant to the product. This verification is part of the full test report(s) and should be read in conjunction with it <them>.

Once compliance with all product relevant  mark directives are verified, including any relevant e.g. risk assessment and production control, the manufacturer may indicate compliance by signing a Declaration of Conformity themselves and applying the mark to products identical to the tested sample(s).

Applicant Name & Address:	Shenzhen SOFARSOLAR Co., Ltd. 11/F., Gaoxingqi Technology Building, No.67 Area, Xingdong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, China
Product Description:	Inverter
Ratings & Principle Characteristics:	NA
Models/Type References:	SOFAR 12KTLX-G3, SOFAR 3.3KTLX-G3, SOFAR 4.4KTLX-G3, SOFAR 5KTLX-G3-A, SOFAR 5.5KTLX-G3, SOFAR 6.6KTLX-G3, SOFAR 8.8KTLX-G3, SOFAR 8.8KTLX-G3-A, SOFAR 10KTLX-G3-A, SOFAR 11KTLX-G3, SOFAR 11KTLX-G3-A
Brand Name:	
Relevant Standards/Directives:	This verification and corresponding evaluation report is considered to constitute technical documentation sufficient for an EC Declaration of Conformity and CE marking of the product according to Directive 2011/65/EU and (EU) 2015/863 of the European Parliament and of the Council with regard to the restriction of the use of certain hazardous substances in electrical and electronic equipment.
Verification Issuing Office Name & Address:	Intertek Testing Services Shenzhen Ltd. Guangzhou Branch Room 02, 1-8F. & Room 01, 101/E201/E301/E401/E501/E601/E701/E801, No.7-2, Caipin Road, Science City, GETDD, Guangzhou, Guangdong, China.
Date of Tests:	Nov 9, 2021 to Jan 10, 2022
Test Report Number(s):	211108059GZU-005

Signature



Name: Hay.zhao

Position: Engineer

Date: 18 May, 2022

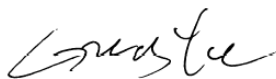
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Certificate of Conformity

Certificate Number: CN-PV-210111

On the basis of the tests undertaken, the samples of the below product have been found to comply with the requirements of the referenced specifications /standards at the time the tests were carried out. It does not imply that Intertek has performed any surveillance or control of the manufacture. The manufacturer shall ensure that the manufacturing process assures compliance of the production units with the examined products mentioned in this certificate.

Applicant Name & Address:	Shenzhen SOFARSOLAR Co., Ltd. 401, Building 4, AnTongDa Industrial Park, District 68, XingDong Community, XinAn Street, BaoAn District, Shenzhen, China
Product Description:	Anti-backflow system
Ratings & Principle Characteristics:	See Annex to Certificate of Conformity
Models/Type References:	SOFAR 3.3KTLX-G3, SOFAR 4.4KTLX-G3, SOFAR 5KTLX-G3-A SOFAR 5.5KTLX-G3, SOFAR 6.6KTLX-G3, SOFAR 8.8KTLX-G3, SOFAR 8.8KTLX-G3-A, SOFAR 11KTLX-G3, SOFAR 10KTLX-G3-A SOFAR 11KTLX-G3-A, SOFAR 12KTLX-G3
Brand Name:	
Specification/Standard:	UNE 217001 IN: October 2020 Tests for systems that avoid the discharge of energy to the distribution network
Certificate Issuing Office Name & Address:	Intertek Testing Services Ltd. Shanghai West Area, 2nd Floor, No. 707, Zhangyang Road China (Shanghai) Pilot Free Trade Zone, Shanghai, P. R. China
Test Report Number:	210416108GZU-015
Additional information in Appendix.	



Signature

Certification Manager: Grady Ye

Date: 17 May 2021

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APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-210111

MODEL	SOFAR 3.3KTLX-G3	SOFAR 4.4KTLX-G3	SOFAR 5KTLX-G3-A	SOFAR 5.5KTLX-G3
Max PV voltage	1100Vdc			
MPPT Voltage range	140-1000Vdc			
Max. input current	15/15A			
PV Isc	22.5/22.5A			
Rated power(W)	3000	4000	5000	5000
Max.apparent power (VA)	3300	4400	5000	5500
Max output current	3×5.0 A	3×6.7 A	3×7.6 A	3×8.3 A
Output voltage	3W/N/PE 230Vac/400Vac			
Nominal Frequency	50 Hz			
Power Factor	1 default (adjustable+/-0.8)			
Ambient Temperature	-30°C - +60°C			
Protection Degree	IP65			
Protection Class	Class I			
Software Version	V000001			

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APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-210111

MODEL	SOFAR 6.6KTLX-G3	SOFAR 8.8KTLX-G3	SOFAR 8.8KTLX-G3-A	SOFAR 10KTLX-G3-A
Max PV voltage	1100Vdc			
MPPT Voltage range	140-1000Vdc			
Max. input current	15/15A		15/30A	
PV Isc	22.5/22.5A		22.5A/45A	
Rated power(W)	6000	8000	8000	10000
Max.apparent power (VA)	6600	8800	8800	10000
Max output current	3×10.0 A	3×13.3 A	3×13.3 A	3×15.2 A
Output voltage	3W/N/PE 230Vac/400Vac			
Nominal Frequency	50 Hz			
Power Factor	1 default (adjustable+/-0.8)			
Ambient Temperature	-30℃ - +60℃			
Protection Degree	IP65			
Protection Class	Class I			
Software Version	V000001			

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APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-210111

MODEL	SOFAR 11KTLX-G3	SOFAR 11KTLX-G3-A	SOFAR 12KTLX-G3
Max PV voltage	1100Vdc		
MPPT Voltage range	140-1000Vdc		
Max. input current	15A/15A	15A/30A	
PV Isc	22.5/22.5A	22.5A/45A	
Rated power(W)	10000	10000	12000
Max.apparent power (VA)	11000	11000	13200
Max output current	3×16.7 A	3×16.7 A	3×20.0 A
Output voltage	3W/N/PE 230Vac/400Vac		
Nominal Frequency	50 Hz		
Power Factor	1 default (adjustable+/-0.8)		
Ambient Temperature	-30°C - +60°C		
Protection Degree	IP65		
Protection Class	Class I		
Software Version	V000001		

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Unit Certificate (Einheitenzertifikat)

Certificate No. (Zertifikats-Nr.): CN-PV-210109R1

On the basis of the tests undertaken, the sample(s) of the below product have been found to comply with the requirements of the referenced specification(s)/standard(s) at the time the tests were carried out. It does not imply that Intertek has performed any surveillance or control of the manufacture(s). The manufacturer(s) shall ensure that the manufacturing process assures compliance of the production units with the examined products mentioned in this certificate.

Anhand der durchgeführten Tests wurde festgestellt, dass die Probe (n) des nachstehenden Produkts zum Zeitpunkt der Durchführung der Tests den Anforderungen der angegebenen Spezifikation (n) / Norm (en) entsprachen. Dies bedeutet nicht, dass Intertek die Herstellung (en) überwacht oder kontrolliert hat. Der Hersteller stellt sicher, dass der Herstellungsprozess die Übereinstimmung der Produktionseinheiten mit den in diesem Zertifikat genannten geprüften Produkten sicherstellt.

Applicant:
(Antragsteller)

Shenzhen SOFARSOLAR Co., Ltd.
401, Building 4, AnTongDa Industrial Park, District 68, XingDong Community, XinAn Street, BaoAn District, Shenzhen, China

Product:
(Produkt)

Solar Grid-tied inverter
(Umrichter)

Model:
(Modell)

SOFAR 3.3KTLX-G3, SOFAR 4.4KTLX-G3, SOFAR 5KTLX-G3-A
SOFAR 5.5KTLX-G3, SOFAR 6.6KTLX-G3, SOFAR 8.8KTLX-G3,
SOFAR 8.8KTLX-G3-A, SOFAR 11KTLX-G3, SOFAR 10KTLX-G3-A
SOFAR 11KTLX-G3-A, SOFAR 12KTLX-G3

Max. active power P_{EMax}:

(max. Wirkleistung P_{EMax})

3.039KW; 4.050KW; 5.057KW; 5.057KW; 6.069KW; 8.063KW; 8.063KW; 10.101KW;
10.101KW; 10.101KW; 12.091KW

Max. apparent power S_{EMax}:

(max. Scheinleistung S_{EMax})

3.369KVA; 4.476KVA; 5.057KVA; 5.566KVA; 6.698KVA; 8.849KVA; 8.849KVA;
11.075KVA; 10.101KVA; 11.075KVA; 13.404KVA

Rated voltage:

(Bemessungsspannung)

3W/N/PE 230Vac/400Vac

Rated current (AC) I_r:

(Bemessungsstrom (AC) I_r)

5.0A; 6.7A; 7.6A; 8.3A; 10.0A; 13.3A; 13.3A; 15.2A; 16.7A; 16.7A; 20.0A

Initial short-circuit AC current I_k:

(Anfangs-Kurzschlusswechselstrom I_k)

5.0A; 6.7A; 7.6A; 8.3A; 10.0A; 13.3A; 13.3A; 15.2A; 16.7A; 16.7A; 20.0A

Tested according to:

(Geprüft nach)

VDE-AR-N 4105:2018-11 "Erzeugungsanlagen am Niederspannungsnetz"
Technische Mindestanforderungen für Anschluss und Parallelbetrieb von
Erzeugungsanlagen am Niederspannungsnetz
DIN VDE V 0124-100 (VDE V 0124-100):2020-06 "Netzintegration von
Erzeugungsanlagen – Niederspannung"
Prüfanforderungen an Erzeugungseinheiten vorgesehen zum Anschluss und
Parallelbetrieb am Niederspannungsnetz
210416108GZU-014

Test Report No.:

(Prüfbericht-Nr.)

Certificate Issuing Office:

(Stelle des ausgestellten Zertifikats)

Intertek Testing Services Ltd. Shanghai
West Area, 2nd Floor, No. 707, Zhangyang Road
China (Shanghai) Pilot Free Trade Zone, Shanghai, P. R. China

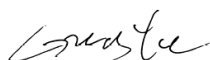
Accredited by ACCREDIA in accordance with ISO/IEC 17065:2012

Replaces certificate CN-PV-210109 dated 14 May 2021

The above designated power generation unit meets the requirements of VDE-AR-N 4105: 2018.

Die oben bezeichnete Erzeugungseinheit erfüllt die Anforderungen der VDE-AR-N 4105: 2018.

See Appendix page for detailed technical information (Detaillierte technische Informationen siehe Anhang).



Signature (Unterschrift)

Certification Manager: Grady Ye

Date (Datum): 14 July 2022



PRD N° 306B

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APPENDIX (ANHANG)

Annex to Certificate No. (Anhang zur Zertifikatsnummer): CN-PV-210109R1

Model (Modell)	SOFAR 3.3KTLX- G3	SOFAR 4.4KTLX- G3	SOFAR 5KTLX- G3-A	SOFAR 5.5KTLX- G3	SOFAR 6.6KTLX- G3	SOFAR 8.8KTLX- G3
Max. DC input voltage (Max. DC-Eingangsspannung)	1100Vdc					
Voltage range (Spannungsbereich)	140-1000Vdc					
Max. PV Isc	22.5A/22.5A					
Nominal mains voltage (Netzspannung Batteriespannungsbereich)	3W/N/PE 230Vac/400Vac					
Max. output current (Max. Ausgangsstrom)	3×5.0 A	3×6.7 A	3×7.6 A	3×8.3 A	3×10.0 A	3×13.3 A
Nominal frequency (Nominale Netzfrequenz)	50Hz					
Power factor (Leistungsfaktor)	1 default (adjustable+/-0.8)					
Rated power Nennleistung	3000W	4000W	5000W	5000W	6000W	8000W
Max. apparent power (Max. Scheinleistung)	3300VA	4400VA	5000VA	5500VA	6600VA	8800VA
Ingress protection (Schutzart)	IP65					
Protection class (Schutzklasse)	Class I					
Operating temperature range (Betriebstemperaturbereich)	-30°C - +60°C					
FW-Version	V000001					

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APPENDIX (ANHANG)

Annex to Certificate No. (Anhang zur Zertifikatsnummer): CN-PV-210109R1

Model (Modell)	SOFAR 8.8KTLX-G3-A	SOFAR 10KTLX-G3-A	SOFAR 11KTLX-G3	SOFAR 11KTLX-G3-A	SOFAR 12KTLX-G3
Max. DC input voltage (Max. DC-Eingangsspannung)	1100Vdc				
Voltage range (Spannungsbereich)	140-1000Vdc				
Max. PV Isc	22.5A/45A		22.5A/22.5A	22.5A/45A	
Nominal mains voltage (Netzspannung Batteriespannungsbereich)	3W/N/PE 230Vac/400Vac				
Max. output current (Max. Ausgangsstrom)	3×13.3 A	3×15.2 A	3×16.7 A	3×16.7 A	3×20.0 A
Nominal frequency (Nominale Netzfrequenz)	50Hz				
Power factor (Leistungsfaktor)	1 default (adjustable+/-0.8)				
Rated power Nennleistung	8000W	10000W	10000W	10000W	12000W
Max. apparent power (Max. Scheinleistung)	8800VA	10000VA	11000VA	11000VA	13200VA
Ingress protection (Schutzart)	IP65				
Protection class (Schutzklasse)	Class I				
Operating temperature range (Betriebstemperaturbereich)	-30°C - +60°C				
FW-Version	V000001				

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APPENDIX (ANHANG)

Annex to Certificate No. (Anhang zur Zertifikatsnummer): CN-PV-210109R1

E.5 of (von) VDE-AR-N 4105:2018-11

Test report "Network interactions" for power generation units with an input current > 75 A
Prüfbericht „Netzurückwirkungen“ für Erzeugungseinheiten mit einem Eingangsstrom > 75 A

Extract of the test report for power generation units (Auszug aus dem Prüfbericht für Erzeugungseinheiten) “Determination of electrical properties” („Bestimmung der elektrischen Eigenschaften“)				No. (Nr.): 210416108GZU-014 (consecutive no. (laufende Nr.))			
System manufacturer: (Anlagenhersteller)		Shenzhen SOFARSOLAR Co., Ltd. 401, Building 4, AnTongDa Industrial Park, District 68, XingDong Community, XinAn Street, BaoAn District, Shenzhen, China					
Manufacturer indications: (Herstellerangaben)		System type (Anlagenart) (BHKW, PV-WR, ...)		PV			
		Max. active power PEmax (maximale Wirkleistung PEmax)		SOFAR 3.3KTLX-G3		SOFAR 4.4KTLX-G3	SOFAR 5.5KTLX-G3
				3.039KW		4.050KW	5.057KW
				SOFAR 6.6KTLX-G3		SOFAR 6.6KTLX-X	SOFAR 8.8KTLX-G3/-A
				6.069KW		6.636KW	8.063KW
				SOFAR 11KTLX-G3/-A		SOFAR 12KTLX-G3	--
				10.101KW		12.091KW	---
				Rated voltage (Bemessungsspannung)		3W/N/PE 230Vac/400Vac	
Measurement period (Messzeitraum)		From (vom) YYYY-MM-DD to (bis) YYYY-MM-DD		2021-Mar-30 to 2021-May-09			
Rapid voltage changes (Schnelle Spannungsänderungen)				ki = 0.420			
Connection without provisions (regarding the primary energy carrier) (Einschalten ohne Vorgabe (zum Primärenergieträger))				ki = 0.162			
Most adverse case when switching between generator levels (Ungünstigster Fall beim Umschalten der Generatorstufen)				ki = (Die EZE verfügt über keine Generatorstufen / The PGU does not provide generator levels)			
Connection at nominal conditions (of the primary energy carrier) (Einschalten bei Nennbedingungen (des Primärenergieträgers))				ki = 0.158			
Disconnection at rated power (Ausschalten bei Bemessungsleistung)				ki = 0.420			
Worst value of all switching operations (Schlechtester Wert aller Schaltvorgänge)				kimax = 0.420			
Flicker	Network impedance angle φ_k (Netzimpedanzwinkel φ_k)		30°	50°	70°	85°	
	Initial flicker factor c (Anlagenflickerbeiwert c)		1.70	1.68	1.61	1.63	

This Certificate is for the exclusive use of Intertek's client and is provided pursuant to the agreement between Intertek and its Client. Intertek's responsibility and liability are limited to the terms and conditions of the agreement. Intertek assumes no liability to any party, other than to the Client in accordance with the agreement, for any loss, expense or damage occasioned by the use of this Certificate. Only the Client is authorized to permit copying or distribution of this Certificate. Any use of the Intertek name or one of its marks for the sale or advertisement of the tested material, product or service must first be approved in writing by Intertek.

Dieses Zertifikat ist ausschließlich für den Kunden von Intertek bestimmt und wird gemäß der Vereinbarung zwischen Intertek und seinem Kunden zur Verfügung gestellt. Die Verantwortung und Haftung von Intertek ist auf die Vertragsbedingungen beschränkt. Intertek übernimmt keine Haftung gegenüber anderen Parteien als dem Kunden gemäß der Vereinbarung für Verluste, Kosten oder Schäden, die durch die Verwendung dieses Zertifikats entstehen. Nur der Kunde ist berechtigt, das Kopieren oder Verteilen dieses Zertifikats zuzulassen. Jede Verwendung des Intertek-Namens oder einer seiner Marken für den Verkauf oder die Werbung für das getestete Material, Produkt oder die getestete Dienstleistung muss zuerst von Intertek schriftlich genehmigt werden.

EQUIPMENT CERTIFICATE

Certificate No.:	Issued:	Valid until:	GCC class
TC-GCC-DNVGL-SE-0124-08245-0	2022-02-17	Unlimited	TC ₁

Issued for:

PV Inverters SOFAR [3.3-12]KTL-X (PPM Type A)

With specifications and software version as listed in Annex 2

Issued to:

Shenzhen SOFARSOLAR Co., Ltd.

401, Building 4, AnTongDa Industrial Park, District 68, XingDong Community, XinAn Street, BaoAn District, Shenzhen, Guangdong P.R. China

According to:

DNVGL-SE-0124, 2016-03: Certification of Grid Code Compliance

PTPIREE, 2021-04: Conditions and procedures for using certificates in the process of connecting power generating modules to power networks

32016R0631, 2016-04: Requirements for Generators (NC RfG)

PSE, 2018-12: Requirements of general application resulting from Commission Regulation (EU) 2016/631 of 14 April 2016

detailed in Annex 1

Based on the document:

CR-GCC-DNVGL-SE-0124-08245-A072-0 Network Code Requirements for a PGU of Type A - Poland, Certification Report, dated 2022-02-17

Further assessment information, including scope and conditions, is found in Annex 1. Description of the PV inverters and type tests performed is found in Annex 2 and Annex 3 respectively.

Hamburg, 2022-02-17

For DNV Renewables Certification



Bente Vestergaard

Director and Service Line Leader Type
and Component Certification



By DAKKS according DIN EN IEC/ISO 17065
accredited Certification Body for products. The
accreditation is valid for the fields of certification
listed in the certificate.

Hamburg, 2022-02-17

For DNV Renewables Certification



Liselotte Ulvgård

Project Manager

EQUIPMENT CERTIFICATE – ANNEX 1

Certificate No.:

TC-GCC-DNVGL-SE-0124-08245-0

Page 2 of 5

Conditions, assessment criteria and scope of assessment

Provided that the conditions listed in section 1 are considered at project level, the PV inverters as further specified in Annex 2 comply with the requirements within scope of this certification, as specified in section 3.

1 Conditions

- Changes of the system design, hardware or the software of the certified PV inverters are to be approved by DNV.
- Inverter settings must finally be agreed and checked at project level to ensure grid code compliance, based on the requirements of relevant System Operator (SO). For the functionalities within scope of this certification, more information about the settings assessed is found in Control Settings in section 4.2 as well as the corresponding assessment sections 5.1-5.4 of the certification report CR-GCC-DNVGL-SE-0124-08245-A072-0.
- The capability of remote control has been shown on unit level but must finally be ensured at project level, considering any further requirements of relevant System Operator (SO) and the full communication network. For the functionalities within scope of this certification, this concerns remote cessation of active power and remote blocking and control of LFSM-O, as further described in section 5.3 and 5.4 of the certification report CR-GCC-DNVGL-SE-0124-08245-A072-0.

2 Assessment criteria and normative references for this certificate:

- /A/ Service Specification DNVGL-SE-0124: Certification of Grid Code Compliance, DNV GL, March 2016
- /B/ Conditions and procedures for using certificates in the process of connecting power generating modules to power networks, Warunki i procedury wykorzystania certyfikatów w procesie przyłączenia modułów wytwarzania energii do sieci elektroenergetycznych, version 1.2, PTPIREE, dated 2021-04-28, (in the following: PTPIREE 2021-04)
- /C/ Requirements of general application resulting from Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators (NC RfG) – as approved by the decision of the President of the Energy Regulatory Office DRE.WOSE.7128.550.2.2018.ZJ dated January 2nd 2019, Wymogi ogólnego stosowania wynikające z Rozporządzenia Komisji (UE) 2016/631 z dnia 14 kwietnia 2016 r. ustanawiającego kodeks sieci dotyczący wymogów w zakresie przyłączenia jednostek wytwórczych do sieci (NC RfG), PSE S.A., dated 2018-12-18 zatwierdzone Decyzją Prezesa Urzędu Regulacji Energetyki DRE.WOSE.7128.550.2.2018.ZJ z dnia 2 stycznia 2019 r, (in the following: PSE 2018-12)
- /D/ Commission Regulation (EU) 2016/631 of 14 April 2016 establishing a network code on requirements for grid connection of generators, published in the Official Journal of the European Union L112/1, The European Commission, 27/04/2016. Document 32016R0631, (in the following: NC RfG)

3 Scope of assessment and results

The following functionalities have been assessed based on the rules for the use of equipment certificates for Power Park Modules (PPMs), as specified in chapter 7 and 9 of the PTPIREE 2021-04 /B/. The functions denoted "Not Applicable" in the table of chapter 7 has not been included.

Capability	NC RfG /D/	PSE 2018-12 /C/	Type A	Assessment result (*)
Frequency range	13.1 (a)	13.1 (a)(i)	x	Compliant
Rate of Change of Frequency (RoCoF) withstand capability, df/dt	13.1 (b)	13.1 (b)	x	Compliant
Remote cessation of active power	13.6	13.6	x	Compliant
Limited Frequency Sensitive Mode – Over Frequency (LFSM-O)	13.2	13.2 (a), (b), (f)	x	Compliant

(*) Please note also the corresponding conditions for compliance, as stated in section 1

EQUIPMENT CERTIFICATE – ANNEX 2

Certificate No.:

TC-GCC-DNVGL-SE-0124-08245-0

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Schematic description and technical data of the generating units

1 Schematic description of the generating unit

The SOFARSOLAR solar inverter family SOFAR [3.3-12]KTL-X, consisting of: SOFAR 3.3KTL-X, SOFAR 4.4KTL-X, SOFAR 5.5KTL-X, SOFAR 6.6KTL-X, SOFAR 8.8KTL-X, SOFAR 11KTL-X and SOFAR 12KTL-X convert electrical energy generated by photovoltaic modules (DC) to three-phase alternating current (AC).

They run at 400 V rated output voltage with a rated active power output of 3 kW to 12 kW. The different output power variants are achieved through derating via software. There is no further difference in the hardware or firmware used, as stated by the manufacturer.

The electrical data of the generating unit is summarized in the following section.

2 Technical data of main components

According to the documents provided by the manufacturer, the following components are used.

2.1 General Specifications

Generating Unit	SOFAR 3.3KTL-X	SOFAR 4.4KTL-X	SOFAR 5.5KTL-X	SOFAR 6.6KTL-X
No. of phases	3	3	3	3
Rated apparent power	3300 VA	4400 VA	5500 VA	6600 VA
Rated active power	3000 W	4000 W	5000 W	6000 W
Rated AC-voltage (phase to phase)	400 Vac	400 Vac	400 Vac	400 Vac
Rated frequency	50 Hz	50Hz	50Hz	50 Hz
	SOFAR 8.8KTL-X	SOFAR 11KTL-X	SOFAR 12KTL-X	
No. of phases	3	3	3	
Rated apparent power	8800 VA	11000 VA	13200 VA	
Rated active power	8000 W	10000 W	12000 W	
Rated AC-voltage (phase to phase)	400 Vac	400 Vac	400 Vac	
Rated frequency	50 Hz	50 Hz	50/ Hz	

2.2 DC Input

Min. MPPT voltage	160 V
Max. MPPT voltage	960 V
Max. DC input voltage	1000 V
Max. DC input current	11 A/11 A

2.3 Software Version

Software version	V320
------------------	------

2.4 Unit transformer

The transformer is not part of the generating unit and consequently has not been part of the assessment.

2.6 Grid Protection

The protection is not part of certification scope

EQUIPMENT CERTIFICATE – ANNEX 2

Certificate No.:

TC-GCC-DNVGL-SE-0124-08245-0

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2.7 Control settings

The control interface allows for the selection of different parameter sets via the “Country code” field, which provide default settings based on specific grid codes and national requirements. For this certification report the parameter set called “12” in the display interface, was assessed for the functionalities within scope of this certification.

It should be noted that compliance can be achieved also with other parameter sets and control settings, but that changes to control settings will affect the inverter control behaviour which can thus affect compliance. It should be noted the final settings must be agreed on project level in agreement with relevant system operator.

Protection settings has not been part of the assessment. Since these could intervene with and affect the compliance of the assessed functionalities, this must be further assessed at project level.

EQUIPMENT CERTIFICATE – ANNEX 3

Certificate No.:

TC-GCC-DNVGL-SE-0124-08245-0

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Type tests

1 Type tests

Tests were performed between 2021-10-12 and 2021-10-27 in the SOFARSOLAR lab in Shenzhen in P.R. China. All tests were performed under ISO-17025 accreditation, and they were performed on the SOFAR 12KTL-X unit.

The results used for assessment are documented in the measurement report(s) as specified below:

Scope	Reference
Frequency range	3.1 of /1/
Rate of Change of Frequency (RoCoF) withstand capability, df/dt	3.2 of /1/
Remote cessation of active power	3.3 of /1/
Limited Frequency Sensitive Mode – over frequency (LFSM-O)	3.4 of /1/

Test report(s)	Document number	Content
/1/	10305241-SHA-TR-04-A	Measurement of power control characteristics of a PV inverter of the type SOFAR 12KTL-X according to FGW TG3 Rev. 25 and Polish Grid Code

The tests results have been assessed against the requirements of PSE 2018-12 /C/ and NC RfG /D/. Further details are described in the corresponding certification report CR-GCC-DNVGL-SE-0124-08245-A072-0.

CERTIFICATE

of conformity with the following European Directives
Low Voltage Directive 2014/35/EU

This certifies that below described products of the applicant:

Shenzhen SOFARSOLAR Co., Ltd.

401, Building 4, AnTongDa Industrial Park, District 68, XingDong
Community, XinAn Street, BaoAn District,
Shenzhen, China.

comply to the essential requirements of the above mentioned European Directive and the following standards,
taking into account the German national deviations:

Product(s): Solar Grid-tied Inverter

Model type(s): SOFAR 25KTLX-G3, SOFAR 30KTLX-G3, SOFAR 30KTLX-G3-A,
SOFAR 33KTLX-G3, SOFAR 36KTLX-G3, SOFAR 40KTLX-G3,
SOFAR 45KTLX-G3, SOFAR 50KTLX-G3, SOFAR 40KTLX-G3-HV,
SOFAR 50KTLX-G3-HV

Standard(s): EN 62109-1:2010, EN 62109-2:2011

This certificate of conformity is based on the evaluation of samples of the product. It does not imply an
assessment of the production and it does not permit the use of a mark of conformity or of a safety mark of the
TÜV NORD CERT GmbH. The holder of this certificate may use this Certificate together with his EC-
Declaration of Conformity.

Registered no.: 44 799 21 406749 - 124R1

Report no.: 492011831.002

File no.: PVP07047/21B-01



TÜV NORD CERT GmbH
Certification Body
Balance of System (BOS) for Photovoltaics

Essen, 2021-11-08

TÜV NORD CERT GmbH

Langemarckstraße 20 45141 Essen

www.tuev-nord-cert.de

prodcert@tuev-nord.de

Please also pay attention to the information stated overleaf.



The CE marking may be affixed on the product if all relevant and effective Directives are complied with.





Dongguan BALUN Testing Technology Co., Ltd.

Room 104, 204, 205, Building 1, No. 6, Industrial South Road, Songshan Lake District, Dongguan, Guangdong, China

VERIFICATION OF CONFORMITY

Certificate No.: BL-DG2480068D02

Applicant: Shenzhen SOFARSOLAR Co., Ltd.

Address: 11/F., Gaoxinqi Technology Building, No.67 Area, Xingdong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, China.

Manufacture: Shenzhen SOFARSOLAR Co., Ltd.

Address: 11/F., Gaoxinqi Technology Building, No.67 Area, Xingdong Community, Xin'an Sub-district, Bao'an District, Shenzhen City, China.

Product: Solar Grid-tied Inverter

Brand name: **SOFAR**

Model name: SOFAR 20KTLX-G3, SOFAR 25KTLX-G3, SOFAR 30KTLX-G3, SOFAR 30KTLX-G3-A, SOFAR 33KTLX-G3, SOFAR 36KTLX-G3, SOFAR 40KTLX-G3, SOFAR 45KTLX-G3, SOFAR 50KTLX-G3, SOFAR 40KTLX-G3-HV, SOFAR 50KTLX-G3-HV

The submitted sample of the above product has been tested according with below Standard(s) used for showing compliance with the essential requirements in the **EMC directive (2014/30/EU)** :

Applied Standards:	Report No.:
EN IEC 61000-6-1:2019, EN IEC 61000-6-2:2019, EN 61000-6-3:2007+A1:2011+AC:2012, EN IEC 61000-6-4:2019	BL-DG2480068-402



Tel: +86 769 22212330

Email: qc@baluntek.com

Certificate of Conformity

By the product certificate number

No. 2621/0362-3-E1-C-CER

Issued to:

License holder: **Shenzhen SOFARSOLAR Co., Ltd.**
11/F., Gaoxinqi Technology Building, No.67 Area,
Xingdong Community, Xin'an Sub-district, Bao'an District,
Shenzhen City, Guangdong Province, P.R. China

Trademark:



Manufacturer:

Dongguan SOFAR SOLAR Co., Ltd.
1F – 6F, Building E, No.1 JinQi Road, Bihu Industrial Park.
Wulian Village, Fenggang Town, Dongguan City,
Guangdong Province, P.R. China.



It is certified that the product:

Type of generator: **Solar Grid-tied Inverter**

Models: **SOFAR 25KTLX-G3 / SOFAR 30KTLX-G3 / SOFAR 30KTLX-G3-A / SOFAR 33KTLX-G3 / SOFAR 36KTLX-G3 / SOFAR 40KTLX-G3 / SOFAR 45KTLX-G3 / SOFAR 50KTLX-G3 / SOFAR 40KTLX-G3-HV / SOFAR 50KTLX-G3-HV**

Technical Data:	Rated Active Power	See page 2
	Rated Voltage	See page 2
	Rated Frequency	50 Hz
	Firmware version	V000001
	Number of phases	See page 2
	Isolation transformer	NO

Is in compliance with standard:

- **EN 50549-1:2019**
Requirements for generating plants to be connected in parallel with distribution networks – Part 1: Connection to a LV Distribution Network - Generating Plants up to and including type B.

This certificate just covers PV inverters models certified below above-mentioned references to be installed in PV generating of type plants **B** to be connected to a LV distribution network.

The above-mentioned product is certified according to the standard EN 50549-1:2019 and is valid to be installed in PV generating of type plants B to be connected to a LV distribution network. The relation between this European Standard with the relevant Article of COMMISSION REGULATION (EU) 2016/631 (NC RfG) is considered as it is indicated in the annex H of the standard EN 50549-1:2019.

Requirements for interface protection according to the clause 4.9.3 of the above-mentioned standard have been checked verifying upper and lower thresholds of the voltage and frequency configuration ranges which are required in the certified standard. This ensures the compliance with interface protection settings which adjusted inside of these configuration ranges, as for example, interface protection settings needed in **Greece**.

The above-mentioned generating unit is certified according to the SGS internal procedure PE.T-ECPE-53 based on the requirements of the UNE-EN ISO / IEC 17065..

First issued on: 17th of January 2022.

This certificate is valid until: 17th of January 2027.

Madrid, 23rd of March 2022

Daniel Arranz Muñiz
Certification Manager



Full list of product references and nominal characteristics:

Model	SOFAR 25KTLX-G3	SOFAR 30KTLX-G3	SOFAR 30KTLX-G3-A	SOFAR 33KTLX-G3	SOFAR 36KTLX-G3
DC Input					
Max. DC voltage	1100 V				
Rated input voltage	620 V				
MPPT voltage range	180 V-1000 V				
AC Output					
Rated AC Output power	25 kW	30 kW	29.9 kW	33 kW	36 kW
Max. AC Output power	28 kVA	34 kVA	29.9 kVA	37 kVA	40 kVA
Nominal grid voltage	3/N/PE, 230V/400V				
Nominal output frequency	50Hz				

Model	SOFAR 40KTLX-G3	SOFAR 45KTLX-G3	SOFAR 50KTLX-G3	SOFAR 40KTLX-G3-HV	SOFAR 50KTLX-G3-HV
DC Input					
Max. DC voltage	1100 V				
Rated input voltage	620 V			725 V	
MPPT voltage range	180 V~1000 V				
AC Output					
Rated AC Output power	40 kW	45 kW	50 kW	40 kW	50 kW
Max. AC Output power	44 kVA	50 kVA	55 kVA	44 kVA	55 kVA
Nominal grid voltage	3/N/PE, 230 V/400 V			3P/PE, 277 V/480 V	
Nominal output frequency	50 Hz				



Certificate of Conformity

By the product certificate number / Par le numéro du certificat du produit

No. 2621/0362-3-CER/E1

Issued to / Délivré à:

License holder /
Titulaire de la licence:

Shenzhen SOFARSOLAR Co., Ltd.

401, Building 4, AnTongDa Industrial Park, District 68, XingDong Community, XinAn Street, BaoAn District. Shenzhen City, Guangdong Province, P.R. China.

Trademark / Marque
déposée:

Manufacturer /
Fabricant:

Dongguan SOFAR SOLAR Co., Ltd.

1F – 6F, Building E, No.1 JinQi Road, Bihu Industrial Park. Wulian Village, Fenggang Town, Dongguan City, Guangdong Province, P.R. China.

It is certified that the product / Il est certifié que le produit:

Type of generator / Type de génératrice **PV Inverter**

Models / Modèles: **SOFAR 25KTLX-G3 / SOFAR 30KTLX-G3 / SOFAR 30KTLX-G3-A / SOFAR 33KTLX-G3 / SOFAR 36KTLX-G3 / SOFAR 40KTLX-G3 / SOFAR 45KTLX-G3 / SOFAR 50KTLX-G3 / SOFAR 40KTLX-G3-HV / SOFAR 50KTLX-G3-HV**

Technical Data /
Données techniques:

Rated Active Power / Puissance active nominale

See page 2 / Voir page 2

Rated Voltage / Tension nominale

See page 2 / Voir page 2

Rated Frequency / Fréquence nominale

50 Hz

Firmware version / Version du firmware

V000001

Number of phases / Nombre de phases

See page 2 / Voir page 2

Isolation transformer / Transformateur d'isolement

NO / Non

Is in compliance with standard / Est conforme à la norme:

EN 50549-1:2019 "Requirements for generating plants to be connected in parallel with distribution networks" – Part 1: Connection to a LV Distribution Network - Generating Plants up to and including type B. / "Exigences relatives aux centrales de production à raccorder en parallèle aux réseaux de distribution" - Partie 1: Raccordement à un réseau de distribution BT - Centrales jusqu'au type B inclus.

This certificate just covers PV inverters models certified below above-mentioned references to be installed in PV generating of type plants B to be connected to a LV distribution network. / Ce certificat couvre uniquement les modèles d'onduleurs PV certifiés selon les références mentionnées ci-dessus, à installer dans des centrales PV de type B à connecter à un réseau de distribution BT.

The above-mentioned product is certified according to the standard EN 50549-1:2019 and is valid to be installed in PV generating of type plants B to be connected to a LV distribution network. The relation between this European Standard with the relevant Article of COMMISSION REGULATION (EU) 2016/631 (NC RfG) is considered as it is indicated in the annex H of the standard EN 50549-1:2019. / Le produit susmentionné est certifié conformément à la norme EN 50549-1 : 2019 et est valable pour être installé dans des centrales PV de type B à raccorder à un réseau de distribution MT. La relation entre cette norme européenne et l'article pertinent du RÈGLEMENT (UE) 2016/631 DE LA COMMISSION (NC RfG) est considérée comme indiquée dans l'annexe H de la norme EN 50549-1:2019.

The above-mentioned generating unit is certified according to the SGS internal procedure PE.T-ECPE-53 based on the requirements of the UNE-EN ISO / IEC 17065. / L'unité de production susmentionnée est certifiée conformément à la procédure interne de SGS PE.T-ECPE-53 basée sur les exigences de la norme UNE-EN ISO / IEC 17065.

First issued on: 17th January 2022. / Première émission le: 17 janvier 2022.

This certificate is valid until: 17th January 2027. / Ce certificat est valable jusqu'au: 17 janvier 2027..

Madrid, 20th June 2023

Daniel Arranz Muñiz
Certification Manager



Model	SOFAR 25KTLX-G3	SOFAR 30KTLX-G3	SOFAR 30KTLX-G3-A	SOFAR 33KTLX-G3	SOFAR 36KTLX-G3
DC Input					
Max. DC voltage	1100 V				
Rated input voltage	620 V				
MPPT voltage range	180 V-1000 V				
AC Output					
Rated AC Output power	25 kW	30 kW	29.9 kW	33 kW	36 kW
Max. AC Output power	28 kVA	34 kVA	29.9 kVA	37 kVA	40 kVA
Nominal grid voltage	3/N/PE, 230V/400V				
Nominal output frequency	50Hz				
Model	SOFAR 40KTLX-G3	SOFAR 45KTLX-G3	SOFAR 50KTLX-G3	SOFAR 40KTLX-G3-HV	SOFAR 50KTLX-G3-HV
DC Input					
Max. DC voltage	1100 V				
Rated input voltage	620 V			725 V	
MPPT voltage range	180 V~1000 V				
AC Output					
Rated AC Output power	40 kW	45 kW	50 kW	40 kW	50 kW
Max. AC Output power	44 kVA	50 kVA	55 kVA	44 kVA	55 kVA
Nominal grid voltage	3/N/PE, 230 V/400 V			3P/PE, 277 V/480 V	
Nominal output frequency	50 Hz				



Certificado de Conformidad

Por medio del certificado de producto número / By the product certificate number

N° 2621/0362-4-E1-A-CER/E1

Emitido a / Issued to:

Titular del certificado /
License holder:

Shenzhen SOFARSOLAR Co., Ltd.
401, Building 4, AnTongDa Industrial Park, District 68, XingDong
Community, XinAn Street, BaoAn District. Shenzhen City, Guangdong
Province, P.R. China



Marca / Trademark



Fábrica / Manufacturer

Dongguan SOFAR SOLAR Co., Ltd.
1F – 6F, Building E, No.1 JinQi Road, Bihu Industrial Park. Wulian Village,
Fenggang Town, Dongguan, P.R. China.

Se certifica que el producto: / It is certified that the product:

Tipo de aparato / Type of product: Solar Grid-tied Inverter

Modelos / Models:

SOFAR 25KTLX-G3 / SOFAR 30KTLX-G3 / SOFAR 30KTLX-G3-A / SOFAR 33KTLX-G3 /
SOFAR 36KTLX-G3 / SOFAR 40KTLX-G3 / SOFAR 45KTLX-G3 /
SOFAR 50KTLX-G3 / SOFAR 40KTLX-G3-HV / SOFAR 50KTLX-G3-HV

Datos técnicos /

Rated characteristics:

Potencia nominal / Rated Power

Ver página 2 / See page 2

Tensión nominal / Rated Voltage

Ver página 2 / See page 2

Frecuencia nominal / Rated Frequency

50 Hz

Versión Firmware / Firmware version

V000001

Número de fases / Number of phases

Ver página 2 / See page 2

Transformador de aislamiento / Isolation transformer

NO

Está en cumplimiento con la norma / Is in compliance with the standard:

- **UNE 217002: 2020** Inversores para conexión a la red de distribución. Ensayos de los requisitos de inyección de corriente continua a la red, generación de sobretensiones y sistema de detección de funcionamiento en isla

Está en cumplimiento con los requisitos de la norma y regulación / Is in compliance with the requirements of standard and regulation:

- **IEC 62116:2014** "Inversores fotovoltaicos conectados a la red de las compañías eléctricas. Procedimiento de ensayo para las medidas de prevención de formación de islas en la red"
- **Anexo I, apartado 2.3.6 y 5.3 de la Orden Ministerial TED/749/2020**, de 16 de julio, por la que se establecen los requisitos técnicos para la conexión a la red necesarios para la implementación de los códigos de red de conexión.

El equipo antes mencionado está certificado conforme con el procedimiento interno de SGS PE.T-ECPE-23 de acuerdo con los requisitos de la norma UNE-EN ISO/IEC 17065. / The above-mentioned generating unit is certified according to the SGS internal procedure PE.T-ECPE-23 based on the requirements of the UNE-EN ISO / IEC 17065.

Este certificado cancela y sustituye el certificado n° 2621/0362-4-E1-A-CER. / This certificate cancels and supersedes the certificate n° 2621/0362-4-E1-A-CER.

Este certificado se emite por vez primera: 16 de diciembre de 2021. / This certificate is first issued on 16th of December 2021.

Este certificado es válido hasta: 16 de diciembre de 2026. / This certificate is valid until the 16th of December 2026.

Madrid, 07 de abril de 2022


Daniel Arranz Muñiz
Certification Manager



SGS Tecnos, S.A. C/ Trespaderna, 29 - 28042 Madrid

This certificate is issued by SGS under its General Conditions

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<https://www.sgs.com/en/certified-clients-and-products/electrical-products>

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N° 2621/0362-4-E1-A-CER/E1

Página 1 de 2

Lista completa de referencias con las características nominales de los productos certificados /
Full list of product references and nominal characteristics:

Model	SOFAR 25KTLX-G3	SOFAR 30KTLX-G3	SOFAR 30KTLX-G3-A	SOFAR 33KTLX-G3	SOFAR 36KTLX-G3
DC Input					
Max. DC voltage	1100 V				
Rated input voltage	620 V				
MPPT voltage range	180 V-1000 V				
AC Output					
Rated AC Output power	25 kW	30 kW	29.9 kW	33 kW	36 kW
Max. AC Output power	28 kVA	34 kVA	29.9 kVA	37 kVA	40 kVA
Nominal grid voltage	3/N/PE, 230V/400V				
Nominal output frequency	50Hz				

Model	SOFAR 40KTLX-G3	SOFAR 45KTLX-G3	SOFAR 50KTLX-G3	SOFAR 40KTLX-G3-HV	SOFAR 50KTLX-G3-HV
DC Input					
Max. DC voltage	1100 V				
Rated input voltage	620 V			725 V	
MPPT voltage range	180 V~1000 V				
AC Output					
Rated AC Output power	40 kW	45 kW	50 kW	40 kW	50 kW
Max. AC Output power	44 kVA	50 kVA	55 kVA	44 kVA	55 kVA
Nominal grid voltage	3/N/PE, 230 V/400 V			3P/PE, 277 V/480 V	
Nominal output frequency	50 Hz				





CERTIFICATE OF PRODUCT CERTIFICATION

SOLAR PRODUCT CERTIFICATE

CERTIFICATE NO.: CQC23024395932

Valid from: Jul.13,2023

Valid until:long-term

NAME AND REGISTERED ADDRESS OF THE APPLICANT	Shenzhen SOFARSOLAR Co., Ltd. 11/F., Gaoxinqi Technology Building, No.67 Area, Xingdong Community, Xin' an Sub-district, Bao' an District, Shenzhen City,China
NAME AND REGISTERED ADDRESS OF THE MANUFACTURER	Shenzhen SOFARSOLAR Co., Ltd. 11/F., Gaoxinqi Technology Building, No.67 Area, Xingdong Community, Xin' an Sub-district, Bao' an District, Shenzhen City,China
NAME AND LOCATION OF THE FACTORY	Dongguan SOFAR SOLAR Co., Ltd. 1F - 6F, Building E, No. 1 JinQi Road, Bihu Industrial Park, Wulian Village, Fenggang Town, Dongguan City.
PRODUCT NAME, MODEL AND SPECIFICATION	Solar Grid-tied Inverter See Appendix
THE STANDARDS AND TECHNICAL REQUIREMENTS FOR THE PRODUCTS	NB/T32004-2018
TYPE OF CERTIFICATION SCHEMES	Type Testing of Product + Initial Factory Inspection + Follow up Factory Inspection

This is to certify that the above mentioned product(s) complies with the requirements of certification rules of CQC33-461239-2018.
The validity of the certificate is subject to positive result of the regular follow up inspection by issuing certification body.

The certificate information is available through the QR code below or CNCA's website: www.cnca.gov.cn



SIGNATURE:

谢肇煦



CHINA QUALITY CERTIFICATION CENTRE





CERTIFICATE OF PRODUCT CERTIFICATION

SOLAR PRODUCT CERTIFICATE

APPENDIX

Page 1 of 2

CERTIFICATE NO.: CQC23024395932

PAPER:

SOFAR 50KTLC-G3-HV

直流输入:MPPT 电压范围 180V-1000Vdc, 最大直流输入电压 1100Vdc, 最大输入电流 40A*4; 交流输出:3/N/PE~, 480V, 50Hz, Max. 66. 2A*3, 额定交流输出功率 50kW;

SOFAR 50KTLC-G3

直流输入:MPPT 电压范围 180V-1000Vdc, 最大直流输入电压 1100Vdc, 最大输入电流 40A*4; 交流输出:3/N/PE~, 400V, 50Hz, Max. 83. 3A*3, 额定交流输出功率 50kW;

SOFAR 45KTLC-G3

直流输入:MPPT 电压范围 180V-1000Vdc, 最大直流输入电压 1100Vdc, 最大输入电流 40A*4; 交流输出:3/N/PE~, 400V, 50Hz, Max. 75. 8A*3, 额定交流输出功率 45kW;

SOFAR 40KTLC-G3-HV

直流输入:MPPT 电压范围 180V-1000Vdc, 最大直流输入电压 1100Vdc, 最大输入电流 40A*3; 交流输出:3/N/PE~, 480V, 50Hz, Max. 53A*3, 额定交流输出功率 40kW;

SOFAR 40KTLC-G3

直流输入:MPPT 电压范围 180V-1000Vdc, 最大直流输入电压 1100Vdc, 最大输入电流 40A*4; 交流输出:3/N/PE~, 400V, 50Hz, Max. 66. 7A*3, 额定交流输出功率 40kW;

NOTE: This appendix is valid when used with the certificate.



CHINA QUALITY CERTIFICATION CENTRE



CERTIFICATE OF PRODUCT CERTIFICATION

SOLAR PRODUCT CERTIFICATE

APPENDIX

Page 2 of 2

CERTIFICATE NO.: CQC23024395932

PAPER:

SOFAR 36KTLC-G3

直流输入:MPPT 电压范围 180V-1000Vdc, 最大直流输入电压 1100Vdc, 最大输入电流 40A*3; 交流输出:3/N/PE~, 400V, 50Hz, Max. 60. 6A*3, 额定交流输出功率 36kW;

SOFAR 33KTLC-G3

直流输入:MPPT 电压范围 180V-1000Vdc, 最大直流输入电压 1100Vdc, 最大输入电流 40A*3; 交流输出:3/N/PE~, 400V, 50Hz, Max. 56A*3, 额定交流输出功率 33kW;

SOFAR 30KTLC-G3

直流输入:MPPT 电压范围 180V-1000Vdc, 最大直流输入电压 1100Vdc, 最大输入电流 40A*3; 交流输出:3/N/PE~, 400V, 50Hz, Max. 51. 5A*3, 额定交流输出功率 30kW;

SOFAR 25KTLC-G3

直流输入:MPPT 电压范围 180V-1000Vdc, 最大直流输入电压 1100Vdc, 最大输入电流 40A*3; 交流输出:3/N/PE~, 400V, 50Hz, Max. 42. 4A*3, 额定交流输出功率 25kW;

NOTE: This appendix is valid when used with the certificate.



CHINA QUALITY CERTIFICATION CENTRE

Certificate of The Network and System Protection

Zertifikat für den Netz- und Anlagenschutz

Certificate No. (Zertifikats-Nr.): CN-PV-230178

On the basis of the tests undertaken, the sample(s) of the below product have been found to comply with the requirements of the referenced specification(s)/standard(s) at the time the tests were carried out. It does not imply that Intertek has performed any surveillance or control of the manufacture(s). The manufacturer(s) shall ensure that the manufacturing process assures compliance of the production units with the examined products mentioned in this certificate.

Anhand der durchgeführten Tests wurde festgestellt, dass die Probe (n) des nachstehenden Produkts zum Zeitpunkt der Durchführung der Tests den Anforderungen der angegebenen Spezifikation (n) / Norm (en) entsprachen. Dies bedeutet nicht, dass Intertek die Herstellung (en) überwacht oder kontrolliert hat. Der Hersteller stellt sicher, dass der Herstellungsprozess die Übereinstimmung der Produktionseinheiten mit den in diesem Zertifikat genannten geprüften Produkten sicherstellt.

Applicant:
(Antragsteller)

Shenzhen SOFARSOLAR Co., Ltd.
11/F., Gaoxinqi Technology Building, No.67 Area, Xingdong Community, Xin'an Sub-district,
Bao'an District, Shenzhen City, China

Type of NS protection:
(Typ NA-Schutz)

Integrierter NA-Schutz (Integrated NS protection)

**Assigned to power
generation unit of type:**
(Zugeordnet zu
Erzeugungseinheit Typ)

SOFAR 25KTLX-G3
Bemessungsspannung (Rated voltage) 3/N/PE, 380V/400V
Bemessungsfrequenz (Nominal frequency) 50/60 Hz

Firmware version:
(Firmwareversion)

V000001

Brandname:
(Markenname)



Network connection rule:
(Netzanschlussregel)

VDE-AR-N 4105:2018-11

Erzeugungsanlagen am Niederspannungsnetz - Technische Mindestanforderungen für Anschluss und Parallelbetrieb von Erzeugungsanlagen am Niederspannungsnetz
(Generators connected to the low-voltage distribution network - Technical minimum requirements for connection and parallel operation of power generation systems connected to the low-voltage network)

DIN VDE V 0124-100 (VDE V 0124-100):2020-06

Netzintegration von Erzeugungsanlagen – Niederspannung -Prüfanforderungen an Erzeugungseinheiten vorgesehen zum Anschluss und Parallelbetrieb am Niederspannungsnetz
(Network integration of power generation systems – Low voltage - Test requirements for power generation units intended for connection to and parallel operation on the low-voltage network)

Test Report No.:
(Prüfbericht-Nr.)

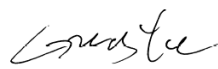
230302181GZU-001 Revision 1

Certificate Issuing Office:
(Stelle des ausgestellten
Zertifikats)

Intertek Testing Services Ltd. Shanghai
West Area, 2nd Floor, No. 707, Zhangyang Road
China (Shanghai) Pilot Free Trade Zone, Shanghai, P. R. China
Accredited by ACCREDIA in accordance with ISO/IEC 17065:2012

The network and system protection designated above meets the requirements of VDE-AR-N 4105: 2018.
Der oben bezeichnete Netz- und Anlagenschutz erfüllt die Anforderungen der VDE-AR-N 4105: 2018.

Signature: (Unterschrift)



Certification Manager: Grady Ye

Date (Datum): 18 April 2023



PRD N° 306B

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APPENDIX (ANHANG)

Annex to Certificate No. (Anhang zur Zertifikatsnummer): CN-PV-230178

E.7 of (von) VDE-AR-N 4105:2018-11

Requirements for the test report for the NS protection (Anforderungen an den Prüfbericht zum NA-Schutz)

Extract of the test report for NS protection (Auszug aus dem Prüfbericht für den NA-Schutz) “Determination of electrical properties” („Bestimmung der elektrischen Eigenschaften“)				No. (Nr.): 230302181GZU-001 Revision 1 (consecutive no. (laufende Nr.))		
Test report NS protection (Prüfbericht NA-Schutz)						
Type of NS Protection: (Typ NA-Schutz)	Integrierter NA-Schutz (Integrated NS protection)			Further manufacturer indications (weitere Herstellerangaben)		
Software Version:	V000001					
Manufacturer: (Hersteller)	Shenzhen SOFARSOLAR Co., Ltd. 11/F., Gaoxinqi Technology Building, No.67 Area, Xingdong Community, Xin’an Sub-district, Bao’an District, Shenzhen City, China					
Measurement Period: (Messzeitraum)	2023-3-2~2023-3-7					
	Stirling generators, fuel cells (Stirlinggeneratoren, Brennstoffzellen)			Inverter(s) (Umrichter)		
	Synchronous and asynchronous generators with $P_n \leq 50$ kW coupled directly or via inverters (direkt oder über Umrichter gekoppelte Synchron- und Asynchrongeneratoren mit $P_n \leq 50$ kW)			Directly coupled synchronous and asynchronous generators with $P_n > 50$ kW (direkt gekoppelte Synchron- und Asynchrongeneratoren mit $P_n > 50$ kW)		
Protective function (Schutzfunktion)	Set value (Einstellwert)	Tripping value (Auslösewert)	Tripping time NS protection * (Auslösezeit NA-Schutz*)	Set value (Einstellwert)	Tripping value (Auslösewert)	Tripping time NS protection * (Auslösezeit NA-Schutz*)
Rise-in-voltage protection (Spannungssteigerungsschutz) $U >>$	1,15* U_n	--- U_n	---ms	1,15* U_n	$1,257 \cdot U_n$	87,8 ms
Rise-in-voltage protection (Spannungssteigerungsschutz) $U >$	1,10* U_n	--- U_n	---ms	1,10* U_n	$1,10 \cdot U_n$	500,6 s
Voltage drop protection (Spannungsrückgangsschutz) $U <$	0,8* U_n	--- U_n	---ms	0,8* U_n	$0,807 \cdot U_n$	3060 ms
Voltage drop protection (Spannungsrückgangsschutz) $U <<$	Not applicable (entfällt)			0,45* U_n	$0,451 \cdot U_n$	348 ms
Frequency decrease protection (Frequenzrückgangsschutz) $f <$	47,5 Hz	---Hz	---ms	47,5 Hz	47,5 Hz	87,4 ms
Frequency increase protection (Frequenzsteigerungsschutz) $f >$	51,5 Hz	---Hz	---ms	51,5 Hz	51,51 Hz	86,8 ms

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APPENDIX (ANHANG)

Annex to Certificate No. (Anhang zur Zertifikatsnummer): CN-PV-230178

- * The tripping time includes the period from the limit value violation U/f until the tripping signal to the interface switch.
- * Die Auslösezeit umfasst den Zeitraum von der Grenzwertverletzung U/f bis zum Auslösesignal an den Kuppelschalter.

When planning the power generation system, the response time of the interface switch shall be added to the maximum time value obtained as indicated above.

The disconnection time (sum of tripping time of the NS protection plus response time of the interface switch) shall not exceed 200 ms.

Bei der Planung der Erzeugungsanlage ist die Eigenzeit des Kuppelschalters zum höchsten oben ermittelten Zeitwert zu addieren.

Die Abschaltzeit (Summe der Auslösezeit NA-Schutz zzgl. Eigenzeit des Kuppelschalters) darf 200 ms nicht überschreiten.

☐ **For integrated NS protection (Bei integriertem NA-Schutz)**

Assigned to power generation unit of type zugeordnet zu Erzeugungseinheit Typ	SOFAR 25KTLX-G3
Type integrated interface switch Typ integrierter Kuppelschalter	(Hongfa) HF167F/12-HF ⁴⁾ (ZETTLER) AZSR190-1AE-12D ⁴⁾ (CHUROD) AZSR190-1AE-12D ⁴⁾
Response time of interface switch for integrated NS protection Eigenzeit des Kuppelschalters bei integriertem NA-Schutz	Max.20ms
Verification of the entire functional chain "integrated NS protection – interface switch" has resulted in successful disconnection. Die Überprüfung der Gesamtwirkungskette „integrierter NA-Schutz – Kuppelschalter“ führte zu einer erfolgreichen Abschaltung.	

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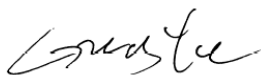
Certificate of Conformity

Certificate Number: CN-PV-210246

On the basis of the tests undertaken, the samples of the below product have been found to comply with the requirements of the referenced specifications /standards at the time the tests were carried out. It does not imply that Intertek has performed any surveillance or control of the manufacture. The manufacturer shall ensure that the manufacturing process assures compliance of the production units with the examined products mentioned in this certificate.

Applicant Name & Address:	Shenzhen SOFARSOLAR Co., Ltd. 401, Building 4, AnTongDa Industrial Park, District 68, XingDong Community, XinAn Street, BaoAn District, Shenzhen, China
Product Description: Ratings & Principle Characteristics:	Solar Grid-tied Inverter See Annex to Certificate of Conformity
Models/Type References:	SOFAR 25KTLX-G3, SOFAR 30KTLX-G3, SOFAR 30KTLX-G3-A SOFAR 33KTLX-G3, SOFAR 36KTLX-G3, SOFAR 40KTLX-G3, SOFAR 45KTLX-G3, SOFAR 50KTLX-G3, SOFAR 40KTLX-G3-HV SOFAR 50KTLX-G3-HV
Brand Name:	
Specification/Standard:	France_UTE_C_15_712-1: July 2013 DIN V VDE V 0126-1-1:2013.08 Automatic disconnecting device Compliant with VFR 2019
Certificate Issuing Office Name & Address:	Intertek Testing Services Ltd. Shanghai West Area, 2nd Floor, No. 707, Zhangyang Road China (Shanghai) Pilot Free Trade Zone, Shanghai, P. R. China Accredited by China National Accreditation Service for Conformity Assessment (CNAS C058-P) in accordance with ISO/IEC 17065:2012
Test Report Number:	210819145GZU-001, 210819145GZU-002

Certification procedure: SMS-PV-OP-19
Product certification scheme type: Type test
Additional information in Appendix.



Signature

Certification Manager: Grady Ye
Date: 25 October 2021



中国认可
国际互认
产品
PRODUCT
CNAS C058-P

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APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-210246

Model	SOFAR 25KTLX-G3	SOFAR 30KTLX-G3	SOFAR 30KTLX-G3-A
Max. DC input Voltage	1100Vdc		
Operating MPPT voltage range	180Vdc – 1000Vdc		
Max. Input current	40A*3		
PV Isc	50A*3		
Nominal AC output voltage	3/N/PE 230Vac/400Vac		
Nominal AC output Frequency	50Hz		
Max. AC output current	42.4A	51.5A	45.3A
Nominal Output power	25000W	30000W	29900W
Max.Output Power	28000VA	34000VA	29900VA
Power factor	1(adjustable +/-0.8)		
Safety level	Class I		
Ingress Protection	IP 65		
Operation Ambient Temperature	-30°C - 60°C		
Software version	V000001		

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APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-210246

Model	SOFAR 33KTLX-G3	SOFAR 36KTLX-G3	SOFAR 40KTLX-G3
Max. DC input Voltage	1100Vdc		
Operating MPPT voltage range	180Vdc – 1000Vdc		
Max. Input current	40A*3		40A*4
PV Isc	50A*3		50A*4
Nominal AC output voltage	3/N/PE 230Vac/400Vac		
Nominal AC output Frequency	50Hz		
Max. AC output current	56A	60.6A	66.7A
Nominal Output power	33000W	36000W	40000W
Max.Output Power	37000VA	40000VA	44000VA
Power factor	1(adjustable +/-0.8)		
Safety level	Class I		
Ingress Protection	IP 65		
Operation Ambient Temperature	-30°C - 60°C		
Software version	V000001		

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APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-210246

Model	SOFAR 45KTLX-G3	SOFAR 50KTLX-G3	SOFAR 40KTLX-G3-HV	SOFAR 50KTLX-G3-HV
Max. DC input Voltage	1100Vdc			
Operating MPPT voltage range	180Vdc – 1000Vdc			
Max. Input current	40A*4		40A*3	40A*4
PV Isc	50A*4		50A*3	50A*4
Nominal AC output voltage	3/N/PE 230Vac/400Vac		3/N/PE 277Vac/480Vac	
Nominal AC output Frequency	50Hz			
Max. AC output current	75.8A	83.3A	53.0A	66.2A
Nominal Output power	45000W	50000W	40000W	50000W
Max.Output Power	50000VA	55000VA	44000VA	55000VA
Power factor	1(adjustable +/-0.8)			
Safety level	Class I			
Ingress Protection	IP 65			
Operation Ambient Temperature	-30℃ - 60℃			
Software version	V000001			

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