Product Service

C E R T I F I C A T E

No. Z2 110727 0006 Rev. 00

Holder of Certificate:

SSWISS GROUP AG
Baarerstrasse 25
6300 ZUG
SWITZERLAND

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.: 701262607501-00

Valid until: 2031-01-07

Date, 2026-04-28

(Zhulin Zhang)

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

Product Service

C E R T I F I C A T E

No. Z2 110727 0006 Rev. 00

Model(s):

PH156TCA-PHANTOM-xxx (xxx=590-650, in steps of 5);
PH144TCA-PHANTOM-xxx (xxx=545-600, in steps of 5);
PH132TCA-PHANTOM-xxx (xxx=500-550, in steps of 5);
PH120TCA-PHANTOM-xxx (xxx=455-500, in steps of 5);
PH108TCA-PHANTOM-xxx (xxx=410-450, in steps of 5);
PH66TCA-PHANTOMX-xxx (xxx=580-650, in steps of 5);
PH54TCA-PHANTOM-xxx (xxx=470-530, in steps of 5);
PH48TCA-PHANTOM-xxx (xxx=425-470, in steps of 5);
PH66TCA-PHANTOM-xxx (xxx=670-730, in steps of 5);
PH60TCA-PHANTOMX-xxx (xxx=605-660, in steps of 5).
xxx is standing for rated output power at STC.

Parameters:

Safety Class:	Class II
Max. System Voltage:	1500V DC
Test Laboratory:	Changzhou HuaYang Inspection and Testing Technology Co., Ltd. B Area on 1/F., Building 12, C Area on 4/F., and A Area on 1/F., Building 10, No. 8, Lanxiang Road, West Taihu Science and Technology Industrial Park, Changzhou Jiangsu, China
Construction:	Framed, with Junction box, cable and connector.
Fire Safety Class:	Class A according to UL790

Tested according to:

IEC 61215-1:2021
EN IEC 61215-1:2021/AC:2021
IEC 61215-1-1:2021
EN IEC 61215-1-1:2021
IEC 61215-2:2021
EN IEC 61215-2:2021
IEC 61730-1:2023
IEC 61730-2:2023

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

TÜV®

PHANTOM

swiss solar

156-TCA
BIFACIAL DOUBLEGLASS

650W | UP TO 26.37%

TOPCon ADVANCE TECHNOLOGY

Next-generation cell architecture with enhanced passivation for higher output, reduced LID & PID, and stable performance under high temperatures and low light.

DuraGlassX™

Ultra-strong tempered glass with advanced anti-reflective coating ensures maximum transparency, impact resistance, and long-term durability in extreme climates.

Phantom Design

Deep black cells with an elegant black frame deliver a modern, premium look that blends seamlessly into architectural projects.

AluForce™ Black Frames

Equivalent to up to +32% higher frame strength under front and side load tests.

30 YEARS
PRODUCT AND PERFORMANCE WARRANTY
swiss solar

SWISS PRODUCT

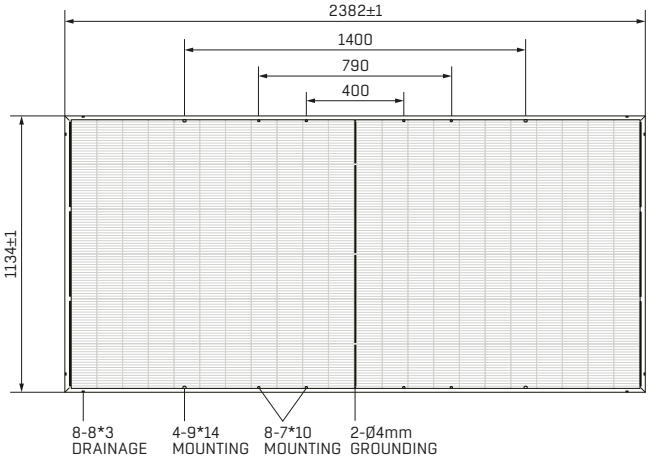
COMPLETE SYSTEM AND PRODUCT CERTIFICATIONS

PHANTOM 156-TCA BIFACIAL DOUBLEGLASS 630-650

up to 26.37% maximum efficiency	0~3 power tolerance	<1% first year power degradation	0.35% year 2-30 power degradation	N-TYPE CELL lower operating teperature

MECHANICAL CHARACTERISTICS

Solar Cells	N-type Mono
No. of Cells	132 (12x11)
Dimensions	2382x 1134 x 30mm
Weight	33.5kg
Front / Back Glass	2.0mm coated semi-tempered glass
Frame	Anodized aluminium alloy
Junction Box	Ip68 rated (3 by pass diodes)
Output Cables	4.0mm², 250mm (+) / 350mm (-) Length can be customized
Connectors	Mc4 compatible
Mechanical load test	Front 6200Pa / Rear 4200Pa



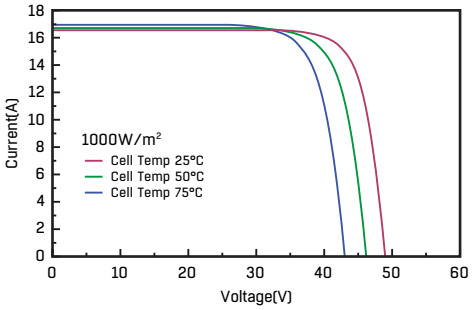
ELECTRICAL PARAMETERS

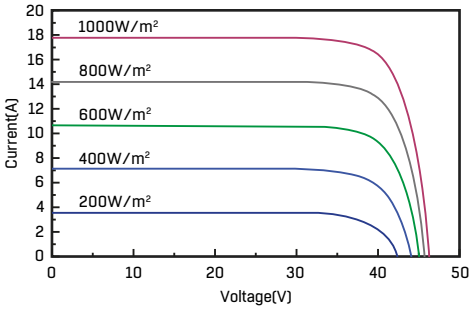
POWER CLASS	PH156-TCA-630		PH156-TCA-635		PH156-TCA-640		PH156-TCA-645		PH132-TCA-650	
	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI	STC	BNPI
Maximum Power (Pmax)	630W	690W	635W	695W	640W	701W	645W	706W	650W	712W
Open Circuit Voltage (Voc)	49.68±3%		49.86±3%		50.04±3%		50.22±3%		50.40±3%	
Short Circuit Current (Isc)	16.04±3%	17.70±3%	16.10±3%	17.77±3%	16.16±3%	17.84±3%	16.22±3%	17.90±3%	16.28±3%	17.97±3%
Voltage at Maximum Power (Vmpp)	41.64V		41.78V		41.91V		42.05V		42.19V	
Current Maximum Power (Impp)	15.13A	16.57A	15.20A	16.63A	15.27A	16.73A	15.34A	16.79A	15.41A	16.88A
MODULE EFFICIENCY (%)	23.32%	25.54%	23.51%	25.73%	23.69%	25.95%	23.88%	26.14%	24.07%	26.37%

STC: Irradiance 1000W/m², cell temperature 25°C, AM1.5G | **NOCT:** Irradiance 800W/m², ambient temperature 20°C, wind speed 1m/s, AM1.5G m²

PACKING CONFIGURATION

Container	40'HQ
Pieces per pallet	37
Pallets per container	20
Pieces per container	740





OPERATING CHARACTERISTICS

Operating Module Temperature	-40°C to +85°C
Maximum System Voltage	1500 DC (IEC)
Maximum Series Fuse Rating	28A
Power Tolerance	0/+5W

TEMPERATURE CHARACTERISTICS

Nominal Operating Cell Temperature	45±2°C
Temperature Coefficient of Pmax	-0.29%°C
Temperature Coefficient of Voc	-0.25%°C
Temperature Coefficient of Isc	+0.045%°C

Certificate of Conformity

Certificate Number: CN-PV-210192

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:	Shenzhen Growatt New Energy CO., Ltd 4-13/F, Building A, Sino-German(Europe) Industrial Park, Hangcheng Ave, Bao'an District, Shenzhen, China.
Product:	PV Grid inverter & Hybrid Inverter
Ratings & Principle Characteristics:	See Appendix to Certificate of Conformity
Models:	MOD 3000TL3-X, MOD 4000TL3-X, MOD 5000TL3-X, MOD 6000TL3-X, MOD 7000TL3-X, MOD 8000TL3-X, MOD 9000TL3-X, MOD 10KTL3-X, MOD 11KTL3-X, MOD 12KTL3-X, MOD 13KTL3-X, MOD 15KTL3-X, MOD 3000TL3-XH, MOD 4000TL3-XH, MOD 5000TL3-XH, MOD 6000TL3-XH, MOD 7000TL3-XH, MOD 8000TL3-XH, MOD 9000TL3-XH, MOD 10KTL3-XH
Brand Name:	Growatt
Tested according to:	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 Type approval for type B and with deviations according to the national network and interface protection for Portugal, Netherlands, Poland, Turkey and Finland
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 Reports No:	200427169GZU-001, Revision 1 31 Aug 2021

According to Annex H of the standard EN 50549-1:2019, generating plants compliant with the clauses of this European Standard are considered to be compliant with the relevant Article of COMMISSION REGULATION (EU) 2016/631, provided, that all settings as provided by the DSO and the responsible party are complied with. Additional information in Appendix.

Signature

Certification Manager: Grady Ye
Date: 06 Sep 2021

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-210192

Model	MOD 3000TL3-X	MOD 4000TL3-X	MOD 5000TL3-X	MOD 6000TL3-X
Max. PV voltage	1100Vdc			
PV voltage range	140 – 1000Vdc			
PV Isc	2*16A			
Max. input current	2*13A			
Max. output power	3000W	4000W	5000W	6000W
Max. apparent power	3300VA	4400VA	5500VA	6600VA
Nominal output voltage	3W/N/PE 230/400Vac			
Max. output current	5.0A	6.7A	8.3A	10.0A
Nominal output frequency	50/60 Hz			
Power factor range	0.8Leading to 0.8Lagging			
Safety level	Class I			
Ingress protection	IP66			
Operation ambient temperature	-25℃ - +60℃			
Software version	DL 1.0			

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-210192

Model	MOD 7000TL3-X	MOD 8000TL3-X	MOD 9000TL3-X	MOD 10KTL3-X
Max. PV voltage	1100Vdc			
PV voltage range	140 – 1000Vdc			
PV Isc	2*16A			
Max. input current	2*13A			
Max. output power	7000W	8000W	9000W	10000W
Max. apparent power	7700VA	8800VA	9900VA	11000VA
Nominal output voltage	3W/N/PE 230/400Vac			
Max. output current	11.7A	13.3A	15.0A	16.7A
Nominal output frequency	50/60 Hz			
Power factor range	0.8Leading to 0.8Lagging			
Safety level	Class I			
Ingress protection	IP66			
Operation ambient temperature	-25℃ - +60℃			
Software version	DL 1.0			

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-210192

Model	MOD 11KTL3-X	MOD 12KTL3-X	MOD 13KTL3-X	MOD 15KTL3-X
Max. PV voltage	1100Vdc			
PV voltage range	140 – 1000Vdc			
PV Isc	2*16A	16/32A		
Max. input current	2*13A	13/26A		
Max. output power	11000W	12000W	13000W	15000W
Max. apparent power	12100VA	13200VA	14300VA	16500VA
Nominal output voltage	3W/N/PE 230/400Vac			
Max. output current	18.3A	20.0A	21.7A	25.0A
Nominal output frequency	50/60 Hz			
Power factor range	0.8Leading to 0.8Lagging			
Safety level	Class I			
Ingress protection	IP66			
Operation ambient temperature	-25℃ - +60℃			
Software version	DL 1.0			

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-210192

Model	MOD 3000TL3-XH	MOD 4000TL3-XH	MOD 5000TL3-XH	MOD 6000TL3-XH
Max. PV voltage	1100Vdc			
PV voltage range	140 – 1000Vdc			
PV Isc	20A*2			
Max. input current	16A*2			
Max. output power	3000W	4000W	5000W	6000W
Max. apparent power	3300VA	4400VA	5500VA	6600VA
Nominal output voltage	3W/N/PE 230/400Vac			
Max. output current	5.0A	6.7A	8.3A	10.0A
Nominal output frequency	50/60 Hz			
Power factor range	0.8Leading to 0.8Lagging			
Safety level	Class I			
Ingress protection	IP66			
Operation ambient temperature	-25℃ - +60℃			
Software version	DN 1.0			

APPENDIX: Certificate of Conformity

This is an Appendix to Certificate of Conformity Number: CN-PV-210192

Model	MOD 7000TL3-XH	MOD 8000TL3-XH	MOD 9000TL3-XH	MOD 10KTL3-XH
Max. PV voltage	1100Vdc			
PV voltage range	140 – 1000Vdc			
PV Isc	20A*2			
Max. input current	16A*2			
Max. output power	7000W	8000W	9000W	10000W
Max. apparent power	7700VA	8800VA	9900VA	11000VA
Nominal output voltage	3W/N/PE 230/400Vac			
Max. output current	11.7A	13.3A	15.0A	16.7A
Nominal output frequency	50/60 Hz			
Power factor range	0.8Leading to 0.8Lagging			
Safety level	Class I			
Ingress protection	IP66			
Operation ambient temperature	-25℃ - +60℃			
Software version	DN 1.0			

MOD 3~10KTL3-XH

- Battery ready, future proof
- Dual MPP Trackers
- Type II SPD on DC and AC side
- AFCI function optional
- 24h self-consumption monitoring

POWER-ING TOMO-RROW

GROWATT

www.ginverter.com

Primary

Datasheet	MOD 3000TL3-XH	MOD 4000TL3-XH	MOD 5000TL3-XH	MOD 6000TL3-XH	MOD 7000TL3-XH	MOD 8000TL3-XH	MOD 9000TL3-XH	MOD 10KTL3-XH
Input data (DC)								
Max. recommended PV power (for module STC)	6000W	8000W	10000W	12000W	14000W	16000W	18000W	20000W
Max. DC voltage	1100V							
Start voltage	160V							
Nominal voltage	600V							
MPPT voltage range	140V-1000V							
No. of MPP trackers	2							
No. of PV strings per MPP tracker	1							
Max. input current per MPP tracker	16A							
Max. short-circuit current per MPP tracker	20A							
Input data (DC battery)								
Compatible battery	ARK XH Battery System(7.68kWh-25.6kWh)							
Operating voltage range	600 V-950 V							
Max.operating current	11A				18.5A			
Max.charge power	6000W				10000W			
Max.discharge power	3300W	4400W	5500W	6600W	7700W	8800W	9900W	11000W*
Output data (AC)								
AC nominal power	3000W	4000W	5000W	6000W	7000W	8000W	9000W	10000W
Max. AC apparent power	3300VA	4400VA	5500VA	6600VA	7700VA	8800VA	9900VA	11000VA*
Nominal AC voltage (range*)	220V/380V, 230V/400V (340-440V)							
AC grid frequency (range*)	50/60 Hz (45-55Hz/55-65 Hz)							
Max. output current	5.0A	6.7A	8.3A	10.0A	11.7A	13.3A	15.0A	16.7A
Adjustable power factor	0.8leading…0.8lagging							
THDi	<3%							
AC grid connection type	3W+N+PE							
Efficiency								
MAX. efficiency	98.3%	98.3%	98.3%	98.3%	98.6%	98.6%	98.6%	98.6%
European efficiency	97.5%	97.5%	97.5%	97.5%	98.1%	98.1%	98.1%	98.1%
MPPT efficiency	99.9%							
Protection devices								
DC reverse polarity protection	Yes							
DC Switch	Yes							
AC/DC surge protection	Type II / Type II							
Insulation resistance monitoring	Yes							
AC short-circuit protection	Yes							
Ground fault monitoring	Yes							
Grid monitoring	Yes							
Anti-islanding protection	Yes							
Residual-current monitoring unit	Yes							
String fault monitoring	Yes							
AFCI protection	Optional							
General data								
Dimensions (W / H / D)	425/387/147mm	425/387/147mm	425/387/147mm	425/387/147mm	425/387/178mm	425/387/178mm	425/387/178mm	425/387/178mm
Weight	12.5kg	12.5kg	12.5kg	12.5kg	14kg	14kg	14kg	14kg
Operating temperature range	- 25℃ ... +60℃							
Nighttime power consumption	< 5.5W							
Topology	Transformerless							
Cooling	Natural convection							
Protection degree	IP66							
Relative humidity	0~100%							
Altitude	4000m							
DC connection	H4/MC4(Optional)							
AC connection	Connector							
Display	OLED+LED/WIFI+APP							
Interfaces: USB/RS485/WiFi /GPRS/LAN/RF	Yes/Yes/Optional/Optional/Optional/Optional							
Warranty: 5 years /10 years	Yes/Optional							
CE, VDE0126, Greece, EN50549, C10/C11, VFR 2019, IEC62116, IEC61727, IEC 60068, IEC 61683, CEI0-21, N4105, TOR Erzeuger G98/G99, G100, AS4777, UNE217001, UNE206007, PO12.2								

* For Belgium C10/C11, MOD 10KTL3-XH max. battery discharge power is limit to10000W and max. output power is limit to 10000VA.
* The AC voltage range and frequency range may vary depending on specific country grid standard.
All specifications are subject to change without notice.

SHENZHEN GROWATT NEW ENERGY CO.,LTD. A: 4-13/F,Building A,Sino-German(Europe)Industrial Park,Hangcheng Ave,Bao'an District,Shenzhen,China
T: + 86 755 2747 1900 F: + 86 755 2749 1460 E: info@ginverter.com

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Product Service

C E R T I F I C A T E

No. Z2 118443 0037 Rev. 24

Holder of Certificate: **Jinko Solar Co., Ltd.**
No.1, Yingbin Avenue
Shangrao Economic and Technological Development Zone
334100 Shangrao City, Jiangxi Province
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.: 704062307437-24

Valid until: 2031-04-15

Date, 2026-04-21

(Zhulin Zhang)

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Product Service

C E R T I F I C A T E

No. Z2 118443 0037 Rev. 24

Model(s):

**JKMxxxN-78HL4-BDV, JKMxxxN-78HL4-BDV-J,
JKMxxxN-78HL4-BDV-IN, JKMxxxN-78HL4-BDV-IN1,
JKMxxxN-78HL4-BDV-S, JKMxxxN-78HL4-BDV-S1,
JKMxxxN-78HL4-BDV-S2,(xxx=600-665, in steps of 5)
JKMxxxN-72HL4-BDV, JKMxxxN-72HL4-BDV-J,
JKMxxxN-72HL4-BDV-U, JKMxxxN-72HL4-BDX,
JKMxxxN-72HL4-BDV-IN, JKMxxxN-72HL4-BDV-IN1
(xxx=560-610, in steps of 5)
JKBSxxxN-48HL4-BDV (xxx=375-390, in steps of 5)
JKMxxxM-72HL4-BDVP, JKMxxxM-72HL4-BDVP-J
(xxx=540-560, in steps of 5)
JKMxxxN-66HL4M-BDV, JKMxxxN-66HL4M-BDX,
JKMxxxN-66HL4M-BDV-IN, JKMxxxN-66HL4M-BDV-S,
JKMxxxN-66HL4M-BDV-S1, JKMxxxN-66HL4M-BDV-S2
(xxx=590-655, in steps of 5)
JKMxxxN-54HL4M-BDV (xxx=495-535, in steps of 5)
JKMxxxN-48HL4M-BDV (xxx=440-475, in steps of 5)
JKMxxxN-54HL4R-BDV, JKMxxxN-54HL4R-BDB
(xxx=420-460, in steps of 5)
JKxxxN-66H5-BGV, JKMxxxN-66HL5-BDV,
JKMxxxN-66HL5-BDV-IN,JKMxxxN-66HL5-BDV-S,
JKMxxxN-66HL5-BDV-S1 (xxx=685-745, in steps of 5)
JKBSxxxN-48HL4-BDVW (xxx=370-390, in steps of 5)
JKMxxxN-54HL4R-DB (xxx=435-455, in steps of 5)
JKMxxxN-48HL4M-DB, DMM48HL4M-xxxAG
(xxx=440-480, in steps of 5)
JKMxxxN-48HL4M-DV (xxx=440-480, in steps of 5)
JKMxxxN-66QL6-BDV (xxx=630-670, in steps of 5)
JKMxxxN-51QL6-BDV (xxx=475-510, in steps of 5)
JKMxxxN-51QL6-DV (xxx=480-515, in steps of 5)
JKMxxxN-51QL6-DB (xxx=475-510, in steps of 5)
JKMxxxN-48QL6-BDV (xxx=460-485, in steps of 5)
JKMxxxN-48QL6-DV (xxx=450-480, in steps of 5)
JKMxxxN-48QL6-DB (xxx=450-475, in steps of 5)
JKMxxxT-66HL4M-BDV (xxx=640-665, in steps of 5)
JKBTxxxN-15HL4-BDV-B0B (xxx=100-115, in steps of 5)
xxx is standing for rated output power at STC**

Parameters:

Fire Safety Class:	Class C according to UL790
Safety Class:	Class II
Max. System Voltage:	1500V DC
Construction:	Framed or frameless double glass with Junction box, cable and connector.

Production Facility(ies): 115876, 113943, 116025, 119488, 075612, 120017, 121280, 115860, 122742, 118612, 119487, 125355, 134193, 130968, 136160,105673

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

TÜV®

ZERTIFIKAT ◆ CERTIFICATE ◆ 認證證書 ◆ СЕРТИФИКАТ ◆ CERTIFICADO ◆ CERTIFICAT

Product Service

C E R T I F I C A T E

No. Z2 118443 0037 Rev. 24

Tested according to:

IEC 61215-1:2021
IEC 61215-1-1:2021
IEC 61215-2:2021
IEC 61730-1:2023
IEC 61730-2:2023
EN IEC 61215-1:2021
EN IEC 61215-1:2021/AC:2021
EN IEC 61215-1-1:2021
EN IEC 61215-2:2021
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

TÜV SÜD Product Service GmbH • Certification Body • Ridlerstraße 65 • 80339 Munich • Germany

TÜV®

www.jinkosolar.com

Jinko Solar
Building Your Trust in Solar

Tiger Neo N-type 66HL4M-BDV 600- 625 Watt

BIFACIAL MODULE WITH DUAL GLASS

N-Type

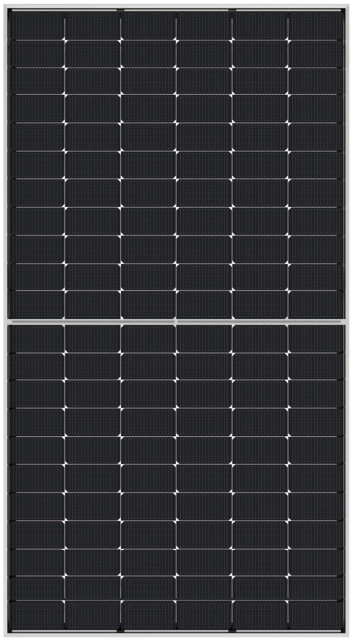
Positive power tolerance of 0~+3%

IEC61215(2016), IEC61730(2016)

ISO9001:2015: Quality Management System

ISO14001:2015: Environment Management System

ISO45001:2018
Occupational health and safety management systems



Key Features

SMBB Technology

Better light trapping and current collection to improve module power output and reliability.

Hot 2.0 Technology

The N-type module with Hot 2.0 technology has better reliability and lower LID/LETID.

PID Resistance

Excellent Anti-PID performance guarantee via optimized mass-production process and materials control.

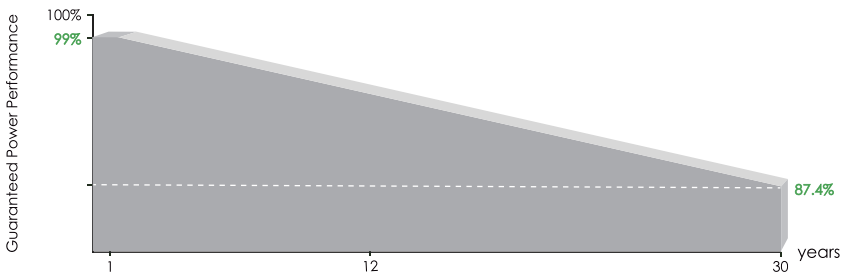
Enhanced Mechanical Load

Certified to withstand: wind load (2400 Pascal) and snow load (5400 Pascal).

Higher Power Output

Module power increases 5-25% generally, bringing significantly lower LCOE and higher IRR.

LINEAR PERFORMANCE WARRANTY

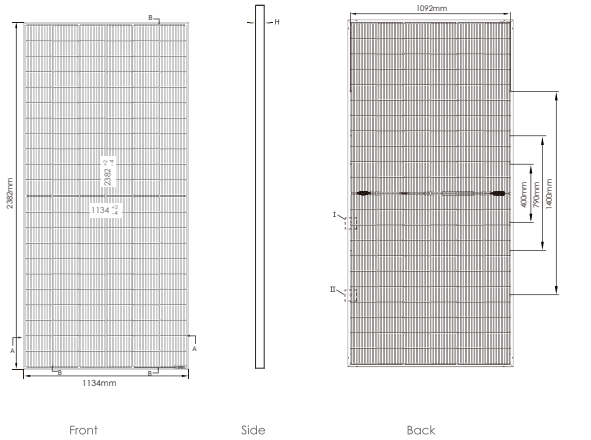


12 Year Product Warranty

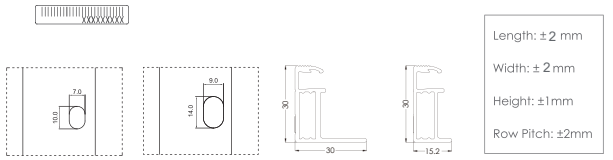
30 Year Linear Power Warranty

0.40% Annual Degradation Over 30 years

Engineering Drawings



Front Side Back



I II A-A B-B Distances measured from corner to corner

For detailed sizes and tolerance specification, please consult detailed module drawing

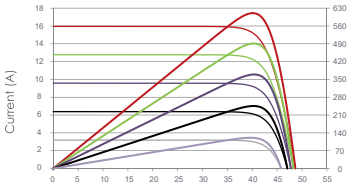
Packaging Configuration

(Two pallets = One stack)

36pcs/pallets, 72pcs/stack, 720pcs/ 40'HQ Container

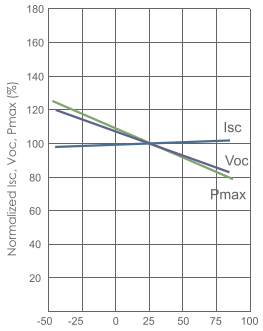
Electrical Performance & Temperature Dependence

Current-Voltage & Power-Voltage Curves (610W)



Voltage (V)

Temperature Dependence of Isc,Voc,Pmax



Cell Temperature (℃)

Mechanical Characteristics

Cell Type	N type Mono-crystalline
No. of cells	132 (2×66)
Dimensions	2382×1134×30mm (93.78×44.65×1.18 inch)
Weight	32.4 kg (71.43 lbs)
Front Glass	2.0mm, Anti-Reflection Coating
Back Glass	2.0mm, Heat Strengthened Glass
Frame	Anodized Aluminium Alloy
Junction Box	IP68 Rated
Output Cables	TUV 1×4.0mm² (+): 400mm , (-): 200mm or Customized Length

SPECIFICATIONS

Module Type	JKM600N-66HL4M-BDV		JKM605N-66HL4M-BDV		JKM610N-66HL4M-BDV		JKM615N-66HL4M-BDV		JKM620N-66HL4M-BDV		JKM625N-66HL4M-BDV	
	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax)	600Wp	453Wp	605Wp	457Wp	610Wp	461Wp	615Wp	464Wp	620Wp	468Wp	625Wp	472Wp
Maximum Power Voltage (Vmp)	40.16V	37.60V	40.31V	37.76V	40.46V	37.92V	40.60V	38.10V	40.74V	38.25V	40.88V	38.44V
Maximum Power Current (Imp)	14.94A	12.05A	15.01A	12.10A	15.08A	12.15A	15.15A	12.19A	15.22A	12.24A	15.29A	12.28A
Open-circuit Voltage (Voc)	48.28V	45.86V	48.48V	46.05V	48.68V	46.24V	48.88V	46.43V	49.08V	46.62V	49.28V	46.81V
Short-circuit Current (Isc)	15.84A	12.79A	15.90A	12.83A	15.96A	12.88A	16.02A	12.93A	16.08A	12.98A	16.14A	13.03V
Module Efficiency STC (%)	22.21%		22.40%		22.58%		22.77%		22.95%		23.14%	
Operating Temperature(℃)	-40℃~+85℃											
Maximum system voltage	1500VDC (IEC)											
Maximum series fuse rating	35A											
Power tolerance	0~+3%											
Temperature coefficients of Pmax	-0.29%/ ℃											
Temperature coefficients of Voc	-0.25%/℃											
Temperature coefficients of Isc	0.045%/℃											
Nominal operating cell temperature (NOCT)	45±2℃											
Refer. Bifacial Factor	80±5%											

*STC: Irradiance 1000W/m² Cell Temperature 25℃ AM=1.5

NOCT: Irradiance 800W/m² Ambient Temperature 20℃ AM=1.5 Wind Speed 1m/s