

n-type TOPCon

HIGH PERFORMANCE DUAL GLASS MODULE

RSM108-9-415-440BNDG



The module picture is for reference only

415-440 _{Wp}

Power Output Range

22.5 %

Maximum Efficiency







0~+3 %

Positive power tolerance

1500 _{VDC}

Maximum System Voltage

KEY FEATURES

-  Perfect for residential scenario application
-  Excellent power generation
-  Excellent anti-LID & anti-PID performance
-  Excellent temperature coefficient (Pmax): -0.29%/°C
-  Excellent weak-light performance
-  Excellent warranty assurance

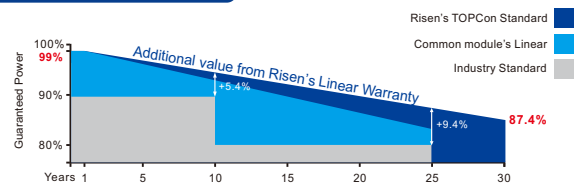


* As there are different certification requirements in different markets, please contact your local Risen Energy sales representative for the specific certificates applicable to the products in the region in which the products are to be used.

LINEAR PERFORMANCE WARRANTY

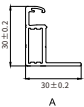
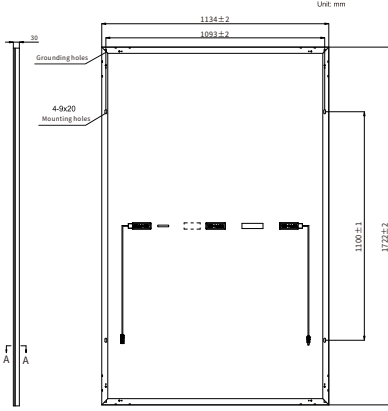
15 years Product Warranty / 30 years Linear Power Warranty

0.4% Annual Degradation over 30 years



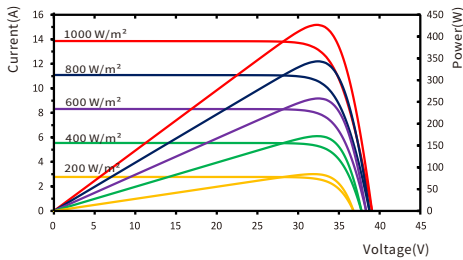
* Please check the valid version of Limited Product Warranty which is officially released by Risen Energy Co., Ltd

Dimensions of PV Module

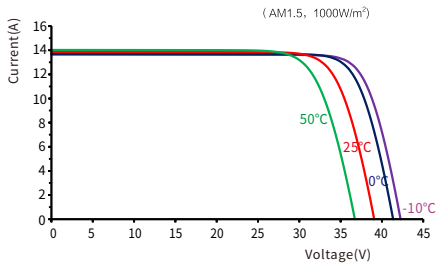


RSM108-9-425BNDG

I-V characteristics at different irradiances



I-V characteristics at different temperatures



PACKAGING CONFIGURATION

	40ft(HQ)	20ft
Number of modules per container	936	216
Number of modules per pallet	36	36
Number of pallets per container	26	6
Packaging box dimensions (LxWxH) in mm	1745×1110×1260	
Box gross weight[kg]	780	

ELECTRICAL DATA (STC)

Model Type	RSM108-9-415-440BNDG					
Rated Power in Watts-Pmax(Wp)	415	420	425	430	435	440
Open Circuit Voltage-Voc(V)	38.67	38.87	39.07	39.26	39.46	39.65
Short Circuit Current-Isc(A)	13.69	13.78	13.86	13.94	14.01	14.09
Maximum Power Voltage-Vmpp(V)	32.39	32.59	32.78	32.98	33.18	33.38
Maximum Power Current-Impp(A)	12.83	12.91	12.99	13.06	13.12	13.19
Module Efficiency (%) *	21.3	21.5	21.8	22.0	22.3	22.5

STC: Irradiance 1000 W/m², Cell Temperature 25°C, Air Mass AM1.5 according to EN 60904-3.

* Module Efficiency (%): Round-off to the nearest number

ELECTRICAL DATA (NMOT)

Model Type	RSM108-9-415-440BNDG					
Maximum Power-Pmax (Wp)	314.8	318.6	322.4	326.0	329.6	333.4
Open Circuit Voltage-Voc (V)	35.96	36.15	36.34	36.51	36.70	36.84
Short Circuit Current-Isc (A)	11.23	11.30	11.36	11.43	11.49	11.55
Maximum Power Voltage-Vmpp (V)	30.06	30.24	30.42	30.61	30.79	30.98
Maximum Power Current-Impp (A)	10.47	10.54	10.60	10.65	10.71	10.76

NMOT: Irradiance at 800 W/m², Ambient Temperature 20°C, Wind Speed 1 m/s.

MECHANICAL DATA

Solar cells	n-type TOPCon
Cell configuration	108 cells (6×9+6×9)
Module dimensions	1722×1134×30mm
Weight	20.5kg
Superstrate	High Transmission, Low Iron, AR Coated Heat Strengthened Glass
Substrate	Heat Strengthened Glass
Frame	Anodized Aluminium Alloy, Black
J-Box	Potted, IP68, 1500VDC, 3 Schottky by pass diodes
Cables	4.0mm ² , Positive(+)1200mm, Negative(-)1200mm (Connector Included), or customized length
Connector	Risen Twinsel PV-SY02, IP68

TEMPERATURE & MAXIMUM RATINGS

Nominal Module Operating Temperature (NMOT)	44°C±2°C
Temperature Coefficient of Voc	-0.25%/°C
Temperature Coefficient of Isc	0.046%/°C
Temperature Coefficient of Pmax	-0.29%/°C
Operational Temperature	-40°C~+85°C
Maximum System Voltage	1500VDC
Max Series Fuse Rating	30A
Limiting Reverse Current	30A



RISEN ENERGY CO., LTD.

Tashan Industry Zone, Meilin, Ninghai 315609, Ningbo | PRC

Tel: +86-574-59953239

Fax: +86-574-59953599

E-mail: marketing@risenenergy.com

Website: www.risenenergy.com

CAUTION: READ SAFETY AND INSTALLATION INSTRUCTIONS BEFORE USING THE PRODUCT.

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No special undertaking or warranty for the suitability of special purpose or being installed in extraordinary surroundings is granted unless as otherwise specifically committed by manufacturer in contract document.

THE POWER OF RISING VALUE

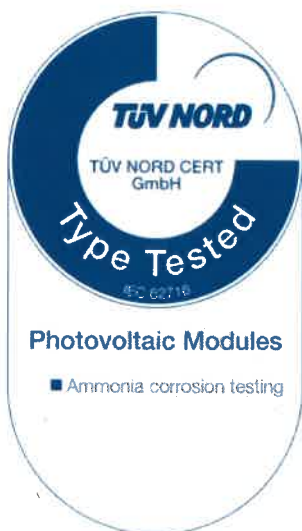
Version: REM108-BNDG-16BB-EN-H2-2-2023-Black Frame

CERTIFICATE

TÜV NORD CERT GmbH
herewith declares that

Risen Energy Co., Ltd.
Meilin, Ninghai, 315609 Ningbo, Zhejiang,
PEOPLE'S REPUBLIC OF CHINA

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



Description of product (details see Annex 2):

Crystalline Silicon Terrestrial Photovoltaic (PV) Modules

Valid until: 2026-07-26

Certification program:	P12-VA-01 Rev. 17 09.20
Certification fundamental(s):	IEC 62716:2013 / EN 62716:2013 + AC:2014.
Registered No.:	44 780 19 406749 - 327R16A7M19
Manufacturer:	see Annex 1
Test Report No.:	492010678.026
File No.:	PVP08133/23P-01



TÜV NORD CERT GmbH
Certification Body
Consumer Products

Essen, 2023-11-29

Please also pay attention to the information stated overleaf.

Manufacturer:

- Manufacturer 1: **Risen Energy (CHANGZHOU) Co., Ltd.**
No.1, Shuinan Road Industrial Concentration Area, Zhixi Town, Jintan District 213251 Changzhou City, Jiangsu Province PEOPLE'S REPUBLIC OF CHINA
Factory inspection report no.: 862010430.005
- Manufacturer 2: **Risen Energy (YIWU) Co., Ltd.**
No.599, Sufu Road Suxi Town 322000 Yiwu City, Zhejiang Province PEOPLE'S REPUBLIC OF CHINA
Factory inspection report no.: 862010464.005
- Manufacturer 3: **Risen Energy (Chuzhou) Co., Ltd.**
No.325, East Tongling Road, 239000 Chuzhou City Anhui, China
Factory inspection report no.: 862010547.003
- Manufacturer 4: **Risen Energy (Ningbo) Co., Ltd.**
No.1, Middle Xingke Road Ninghai County 315609 Ningbo City, Zhejiang Province PEOPLE'S REPUBLIC OF CHINA
Factory inspection report no.: 862010656.003
- Manufacturer 5: **RISEN SOLAR TECHNOLOGY SDN. BHD.**
NO 3, JALAN HI-TECH 14, ZON INDUSTRI FASA 4 KULIM HI-TECH PARK 09090 KULIM, KEDAH DARUL AMAN MALAYSIA
Factory inspection report no.: 862010604.002
- Manufacturer 6: **Risen Energy (Baotou) Co., Ltd.**
Baotou Jinshan Industrial Park, Guyang County, Baotou City 014200 Inner Mongolia Autonomous Region PEOPLE'S REPUBLIC OF CHINA
Factory inspection report no.: 862010717.002



TÜV NORD CERT GmbH
Certification Body
Consumer Products

Manufacturer 7:

Risen Solar (Ningbo) Technology Co., Ltd.

No. 5, Jinhai East Road, Binhai New Area Ninghai 315602 Ningbo City,
Zhejiang Province PEOPLE'S REPUBLIC OF CHINA

Factory inspection report no.:

862010814.001

Remark:

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



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Description of product(s):

Module types: **Double Glass PV Modules with 6" Poly-crystalline Silicon Solar Cells:**

72 cells: RSM72-6-xxxPDG (xxx=315 - 360, increments of 5)

60 cells: RSM60-6-xxxPDG (xxx=265 - 300, increments of 5)

144 cells: RSM144-6-xxxPDG (xxx=330 - 365, increments of 5)

120 cells: RSM120-6-xxxPDG (xxx=275 - 305, increments of 5)

Maximum system voltage: 1500V

Fuse rating: 20A

Application class: Class A

Electrical protection class: Class II

Module types: **Double Glass PV Modules with 6" Mono-crystalline Silicon Solar Cells:**

72 cells: RSM72-6-xxxMDG (xxx=315 - 385, increments of 5)

60 cells: RSM60-6-xxxMDG (xxx=265 - 320, increments of 5)

144 cells: RSM144-6-xxxMDG (xxx=350 - 415, increments of 5)

132 cells: RSM132-6-xxxMDG (xxx=320 - 380, increments of 5)

120 cells: RSM120-6-xxxMDG (xxx=295 - 350, increments of 5)

Maximum system voltage: 1500V

Fuse rating: 20A

Application class: Class A

Electrical protection class: Class II

Module types: **Double Glass PV Modules with 6" Mono p-type Bifacial Solar Cells:**

72 cells: RSM72-6-xxxBMDG (xxx=340 - 385, increments of 5)

60 cells: RSM60-6-xxxBMDG (xxx=280 - 325, increments of 5)

144 cells: RSM144-6-xxxBMDG (xxx=360 - 455, increments of 5)

144 cells: RSM144-7-xxxBMDG (xxx=425 - 455, increments of 5)

144 cells: RSM144-7-xxxBMDGZ (xxx=425 - 455, increments of 5)

132 cells: RSM132-6-xxxBMDG (xxx=330 - 420, increments of 5)

132 cells: RSM132-7-xxxBMDG (xxx=390 - 420, increments of 5)

132 cells: RSM132-7-xxxBMDGZ (xxx=390 - 420, increments of 5)

120 cells: RSM120-6-xxxBMDG (xxx=300 - 380, increments of 5)

120 cells: RSM120-7-xxxBMDG (xxx=355 - 380, increments of 5)

120 cells: RSM120-7-xxxBMDGZ (xxx=355 - 380, increments of 5)

Remark: The power parameter included in the module types only



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indicates maximum power output of front side.

Maximum system voltage: 1500V
Fuse rating: 20A or 25A
Application class: Class A
Electrical protection class: Class II

Module types: **Double Glass PV Modules with 7" Mono p-type Bifacial Solar Cells:**
144 cells: RSM144-9-xxxBMDG (xxx=520 - 560, increments of 5)
132 cells: RSM132-9-xxxBMDG (xxx=480 - 510, increments of 5)
120 cells: RSM120-9-xxxBMDG (xxx=435 - 465, increments of 5)
Remark: The power parameter included in the module types only indicates maximum power output of front side.

Maximum system voltage: 1500V
Fuse rating: 20A or 25A
Application class: Class A
Electrical protection class: Class II

Module types: **Double Glass PV Modules with 8" Mono p-type Bifacial Solar Cells:**
150 cells: RSM150-8-xxxBMDG (xxx=465 - 510, increments of 5)
90 cells: RSM90-8-xxxBMDG (xxx=285 - 300, increments of 5)
132 cells: RSM132-8-xxxBMDG (xxx=635 - 675, increments of 5)
120 cells: RSM120-8-xxxBMDG (xxx=560 - 615, increments of 5)
110 cells: RSM110-8-xxxBMDG (xxx=525 - 565, increments of 5)
80 cells: RSM80-8-xxxBMDG (xxx=380 - 405, increments of 5)
264 cells: RSM264-8-xxxBMDG (xxx=645 to 670, increments of 5)
Remark: The power parameter included in the module types only indicates maximum power output of front side.

Maximum system voltage: 1500V
Fuse rating: 25A or 35A
Application class: Class A
Electrical protection class: Class II

Module types: **Double Glass PV Modules with 6" Mono n-type Bifacial Solar Cells:**
156 cells: RSM156-6-xxxBHDG (xxx=435 - 465, increments of 5)
144 cells: RSM144-6-xxxBHDG (xxx=400 - 430, increments of 5)
144 cells: RSM144-6-xxxHDGB (xxx=400 - 430, increments of 5)



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132 cells: RSM132-6-xxxBHDG (xxx=365 - 390, increments of 5)
132 cells: RSM132-6-xxxHDGB (xxx=365 - 390, increments of 5)
120 cells: RSM120-6-xxxBHDG (xxx=330 - 360, increments of 5)
120 cells: RSM120-6-xxxHDGB (xxx=330 - 360, increments of 5)
Remark: The power parameter included in the module types only indicates maximum power output of front side.

Maximum system voltage: 1500V
Fuse rating: 20A or 25A
Application class: Class A
Electrical protection class: Class II

Module types:

Double Glass PV Modules with 8" Mono n-type Bifacial Solar Cells:

132 cells: RSM132-8-xxxBNDG (xxx=665 - 695, increments of 5)
120 cells: RSM120-8-xxxBNDG (xxx=605 - 635, increments of 5)
110 cells: RSM110-8-xxxBNDG (xxx=550 - 580, increments of 5)
132 cells: RSM132-8-xxxBHDG (xxx=650 - 715, increments of 5)
120 cells: RSM120-8-xxxBHDG (xxx=590 - 655, increments of 5)
110 cells: RSM110-8-xxxBHDG (xxx=540 - 600, increments of 5)
Remark: The power parameter included in the module types only indicates maximum power output of front side.


Maximum system voltage: 1500V
Fuse rating: 35A
Application class: Class A
Electrical protection class: Class II

Module types:

Double Glass PV Modules with 7" Mono n-type Bifacial Solar Cells:

156 cells: RSM156-9-xxxBNDG (xxx=605 - 630, increments of 5)
144 cells: RSM144-9-xxxBNDG (xxx=550 - 590, increments of 5)
120 cells: RSM120-9-xxxBNDG (xxx=455 - 490, increments of 5)
108 cells: RSM108-9-xxxBNDG (xxx=410 - 440, increments of 5)
Remark: The power parameter included in the module types only indicates maximum power output of front side.

Maximum system voltage: 1500V
Fuse rating: 30A
Application class: Class A
Electrical protection class: Class II



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Consumer Products

Module types:	Double Glass PV Modules with 7" Mono n-type Bifacial Solar Cells: 144 cells: RSM144-10-xxxBNDG (xxx=570 - 610, increments of 5) 120 cells: RSM120-10-xxxBNDG (xxx=475 - 500, increments of 5) 108 cells: RSM108-10-xxxBNDG (xxx=425 - 460, increments of 5) Remark: The power parameter included in the module types only indicates maximum power output of front side.
Maximum system voltage:	1500V
Fuse rating:	30A
Application class:	Class A
Electrical protection class:	Class II

Remark:

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



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Certification Body
Consumer Products



Product Service

Attestation of Conformity

No. N8A 082429 0151 Rev. 27

Holder of Attestation: **Risen Energy Co.,Ltd**
Meilin, Ninghai,
315609 Ningbo, Zhejiang
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.: 704061704304-30

Date, 2023-08-07

(Zhulin Zhang)

Page 1 of 3

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 082429 0151 Rev. 27

Model(s):

RSM72-6-xxxMDG, xxx=315 to 385 in step of 5
 RSM60-6-xxxMDG, xxx=265 to 320 in step of 5
 RSM144-6-xxxMDG, xxx=350 to 415 in step of 5
 RSM132-6-xxxMDG, xxx=320 to 380 in step of 5
 RSM120-6-xxxMDG, xxx=295 to 350 in step of 5
 RSM72-6-xxxBMDG, xxx=340 to 385 in step of 5
 RSM60-6-xxxBMDG, xxx=280 to 325 in step of 5
 RSM144-6-xxxBMDG, xxx=360 to 415 in step of 5
 RSM132-6-xxxBMDG, xxx=330 to 380 in step of 5
 RSM120-6-xxxBMDG, xxx=300 to 350 in step of 5
 RSM156-6-xxxBHDG, xxx=435 to 465 in step of 5
 RSM144-6-xxxBHDG, xxx=400 to 430 in step of 5
 RSM132-6-xxxBHDG, xxx=365 to 390 in step of 5
 RSM120-6-xxxBHDG, xxx=330 to 360 in step of 5
 RSM144-7-xxxBMDG, xxx=425 to 455 in step of 5
 RSM132-7-xxxBMDG, xxx=390 to 420 in step of 5
 RSM120-7-xxxBMDG, xxx=355 to 380 in step of 5
 RSM144-6-xxxBMDG, xxx=425 to 455 in step of 5
 RSM132-6-xxxBMDG, xxx=390 to 420 in step of 5
 RSM120-6-xxxBMDG, xxx=355 to 380 in step of 5
 RSM150-8-xxxBMDG, xxx= 465 to 510 in step of 5
 RSM90-8-xxxBMDG, xxx= 285 to 300 in step of 5
 RSM144-9-xxxBMDG, xxx= 520 to 560 in step of 5
 RSM132-9-xxxBMDG, xxx= 480 to 510 in step of 5
 RSM120-9-xxxBMDG, xxx= 435 to 465 in step of 5
 RSM120-8-xxxBMDG, xxx= 560 to 615 in step of 5
 RSM110-8-xxxBMDG, xxx= 525 to 565 in step of 5
 RSM80-8-xxxBMDG, xxx= 380 to 405 in step of 5
 RSM132-8-xxxBMDG, xxx= 635 to 675 in step of 5
 RSM144-7-xxxBMDGZ, xxx=425 to 455 in step of 5
 RSM132-7-xxxBMDGZ, xxx=390 to 420 in step of 5
 RSM120-7-xxxBMDGZ, xxx=355 to 380 in step of 5
 RSM144-6-xxxHDGB, xxx=400 to 430 in step of 5
 RSM132-6-xxxHDGB, xxx=365 to 390 in step of 5
 RSM120-6-xxxHDGB, xxx=330 to 360 in step of 5
 RSM132-8-xxxBNDG, xxx=665 to 695 in step of 5
 RSM120-8-xxxBNDG, xxx=605 to 635 in step of 5
 RSM110-8-xxxBNDG, xxx= 550 to 580 in step of 5
 RSM132-8-xxxBHDG, xxx= 650 to 715 in step of 5
 RSM120-8-xxxBHDG, xxx= 590 to 655 in step of 5
 RSM110-8-xxxBHDG, xxx= 540 to 600 in step of 5
 RSM264-8-xxxBMDG, xxx= 645 to 670 in step of 5
 RSM156-9-xxxBNDG, xxx= 605 to 630 in step of 5
 RSM144-9-xxxBNDG, xxx= 550 to 590 in step of 5
 RSM120-9-xxxBNDG, xxx= 455 to 490 in step of 5
 RSM108-9-xxxBNDG, xxx= 410 to 440 in step of 5
 RSM144-10-xxxBNDG, xxx=570 to 610 in step of 5
 RSM120-10-xxxBNDG, xxx=475 to 500 in step of 5
 RSM108-10-xxxBNDG, xxx=425 to 460 in step of 5
 xxx is standing for rated output power at STC

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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.



TUV®



Product Service

Attestation of Conformity

No. N8A 082429 0151 Rev. 27

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

Tested according to:	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

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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.



TUV®

CE Declaration of Conformity

Directive 2014/35/EU (Low Voltage)



Issuer's name and address:

Risen Energy Co.,Ltd

Meilin, Ninghai, 315609 Ningbo, Zhejiang, PEOPLE'S REPUBLIC OF CHINA.

Tel: 008657459953588

Product: Crystalline silicon photovoltaic modules

Type designation:

RSM72-6-xxxMDG, xxx=315 to 385 in step of 5, RSM60-6-xxxMDG, xxx=265 to 320 in step of 5, RSM144-6-xxxMDG, xxx=350 to 415 in step of 5, RSM132-6-xxxMDG, xxx=320 to 380 in step of 5, RSM120-6-xxxMDG, xxx=295 to 350 in step of 5, RSM72-6-xxxBMDG, xxx=340 to 385 in step of 5, RSM60-6-xxxBMDG, xxx=280 to 325 in step of 5, RSM144-6-xxxBMDG, xxx=360 to 415 in step of 5, RSM132-6-xxxBMDG, xxx=330 to 380 in step of 5, RSM120-6-xxxBMDG, xxx=300 to 350 in step of 5, RSM156-6-xxxBHDG, xxx=435 to 465 in step of 5, RSM144-6-xxxBHDG, xxx=400 to 430 in step of 5, RSM132-6-xxxBHDG, xxx=365 to 390 in step of 5, RSM120-6-xxxBHDG, xxx=330 to 360 in step of 5, RSM144-7-xxxBMDG, xxx=425 to 455 in step of 5, RSM132-7-xxxBMDG, xxx=390 to 420 in step of 5, RSM120-7-xxxBMDG, xxx=355 to 380 in step of 5, RSM144-6-xxxBMDG, xxx=425 to 455 in step of 5, RSM132-6-xxxBMDG, xxx=390 to 420 in step of 5, RSM120-6-xxxBMDG, xxx=355 to 380 in step of 5, RSM150-8-xxxBMDG, xxx=465 to 510 in step of 5, RSM90-8-xxxBMDG, xxx=285 to 300 in step of 5, RSM144-9-xxxBMDG, xxx=520 to 560 in step of 5, RSM132-9-xxxBMDG, xxx=480 to 510 in step of 5, RSM120-9-xxxBMDG, xxx=435 to 465 in step of 5, RSM120-8-xxxBMDG, xxx=560 to 615 in step of 5, RSM110-8-xxxBMDG, xxx=525 to 565 in step of 5, RSM80-8-xxxBMDG, xxx=380 to 405 in step of 5, RSM132-8-xxxBMDG, xxx=635 to 675 in step of 5, RSM144-7-xxxBMDGZ, xxx=425 to 455 in step of 5, RSM132-7-xxxBMDGZ, xxx=390 to 420 in step of 5, RSM120-7-xxxBMDGZ, xxx=355 to 380 in step of 5, RSM144-6-xxxHDGB, xxx=400 to 430 in step of 5, RSM132-6-xxxHDGB, xxx=365 to 390 in step of 5, RSM120-6-xxxHDGB, xxx=330 to 360 in step of 5, RSM132-8-xxxBNDG, xxx=665 to 695 in step of 5, RSM120-8-xxxBNDG, xxx=605 to 635 in step of 5, RSM110-8-xxxBNDG, xxx=550 to 580 in step of 5, RSM132-8-xxxBHDG, xxx=650 to 715 in step of 5, RSM120-8-xxxBHDG, xxx=590 to 655 in step of 5, RSM110-8-xxxBHDG, xxx=540 to 600 in step of 5, RSM264-8-xxxBMDG, xxx=645 to 670 in step of 5,



每当东方日升时你增能量我增值
THE POWER OF RISING VALUE

RSM156-9-xxxBNDG, xxx=605 to 635 in step of 5, RSM144-9-xxxBNDG, xxx=550 to 590 in step of 5,
RSM120-9-xxxBNDG, xxx=455 to 490 in step of 5, RSM108-9-xxxBNDG, xxx=410 to 440 in step of 5,
RSM144-10-xxxBNDG, xxx=570 to 610 in step of 5, RSM120-10-xxxBNDG, xxx=475 to 500 in step of 5,
RSM108-10-xxxBNDG, xxx=425 to 460 in step of 5.

RSM72-6-xxxM, xxx=330 to 405 in step of 5, RSM60-6-xxxM, xxx=275 to 340 in step of 5,
RSM156-6-xxxM, xxx=410 to 455 in step of 5, RSM156-6-xxxMB, xxx=410 to 455 in step of 5,
RSM144-6-xxxM, xxx=350 to 420 in step of 5, RSM144-6-xxxMB, xxx=350 to 420 in step of 5,
RSM144-6-xxxM, xxx=425 to 450 in step of 5, RSM144-7-xxxM, xxx=425 to 465 in step of 5,
RSM144-7-xxxMB, xxx=425 to 465 in step of 5, RSM132-6-xxxM, xxx=320 to 385 in step of 5,
RSM132-6-xxxMB, xxx=320 to 385 in step of 5, RSM120-6-xxxM, xxx=295 to 350 in step of 5,
RSM120-6-xxxMB, xxx=295 to 350 in step of 5, RSM120-6-xxxM, xxx=355 to 375 in step of 5,
RSM120-7-xxxM, xxx=355 to 390 in step of 5, RSM120-7-xxxMB, xxx=355 to 390 in step of 5,
RSM150-8-xxxM, xxx=465 to 515 in step of 5, RSM150-8-xxxMB, xxx=465 to 515 in step of 5,
RSM40-8-xxxM, xxx=385 to 420 in step of 5, RSM40-8-xxxMB, xxx=385 to 420 in step of 5,
RSM144-9-xxxM, xxx=525 to 560 in step of 5, RSM144-9-xxxMB, xxx=525 to 560 in step of 5,
RSM132-9-xxxM, xxx=485 to 510 in step of 5, RSM132-9-xxxMB, xxx=485 to 510 in step of 5,
RSM120-9-xxxM, xxx=440 to 465 in step of 5, RSM120-9-xxxMB, xxx=440 to 465 in step of 5,
RSM120-8-xxxM, xxx=575 to 615 in step of 5, RSM120-8-xxxMB, xxx=575 to 615 in step of 5,
RSM110-8-xxxM, xxx=525 to 565 in step of 5, RSM110-8-xxxMB, xxx=525 to 565 in step of 5,
RSM156-6-xxxBMTG, xxx=410 to 455 in step of 5, RSM144-6-xxxBMTG, xxx=350 to 420 in step of 5,
RSM132-6-xxxBMTG, xxx=320 to 385 in step of 5, RSM120-6-xxxBMTG, xxx=295 to 350 in step of 5,
RSM120-6-xxxBMTG, xxx=355 to 375 in step of 5, RSM150-8-xxxBMTG, xxx=465 to 515 in step of 5,
RSM144-9-xxxBMTG, xxx=525 to 560 in step of 5, RSM132-9-xxxBMTG, xxx=485 to 510 in step of 5,
RSM120-9-xxxBMTG, xxx=440 to 465 in step of 5, RSM120-8-xxxBMTG, xxx=575 to 615 in step of 5,
RSM110-8-xxxBMTG, xxx=525 to 565 in step of 5, RSM144-6-xxxBMTG, xxx=425 to 450 in step of 5,
RSM144-7-xxxBMTG, xxx=425 to 465 in step of 5, RSM120-7-xxxBMTG, xxx=355 to 390 in step of 5,
RSM40-8-xxxBMTG, xxx= 385 to 420 in step of 5, RSM132-8-xxxM, xxx=635 to 675 in step of 5,
RSM132-8-xxxMB, xxx=635 to 675 in step of 5, RSM132-8-xxxBMTG, xxx=635 to 675 in step of 5,
RSM130-8-xxxM, xxx= 430 to 455 in step of 5, RSM130-8-xxxMB, xxx= 430 to 455 in step of 5,
RSM130-8-xxxN, xxx= 440 to 460 in step of 5, RSM130-8-xxxNB, xxx=440 to 460 in step of 5,
RSM130-8-xxxBNTG, xxx=440 to 460 in step of 5, RSM40-8-xxxN, xxx=405 to 425 in step of 5,
RSM40-8-xxxNB, xxx=405 to 425 in step of 5, RSM40-8-xxxBNTG, xxx=405 to 425 in step of 5,
RSM144-9-xxxN, xxx= 555 to 590 in step of 5, RSM120-9-xxxN, xxx= 460 to 490 in step of 5,



每当东方日升时你增能量我增值
THE POWER OF RISING VALUE

RSM108-9-xxxN, xxx= 415 to 440 in step of 5, RSM108-9-xxxNB, xxx= 415 to 435 in step of 5,
RSM144-10-xxxN, xxx= 575 to 615 in step of 5, RSM120-10-xxxN, xxx= 480 to 505 in step of 5,
RSM108-10-xxxN, xxx= 430 to 460 in step of 5, RSM108-10-xxxNB, xxx= 430 to 455 in step of 5.
xxx is standing for rated output power at STC

The designated product is in conformity with the European Directive: 2014/35/EU
Council Directive on the harmonization of the laws of the Member States relating to electrical equipment
designed for use within certain voltage limits.

The technical documentation and full compliance with the standards listed below proved the conformity
of the product with the requirements of the above-mentioned EC Directive:

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

The institute TUV SUD Product Service GmbH, Ridlerstrasse 65, 80339 Munich (Germany) has tested
and certified the product.

Certificate No.:N8A0824290148 Rev.23 & N8A0824290151 Rev.28

Ninghai

Risen Certification and Project Management Department

November 28th, 2023



Product Service

CERTIFICATE

No. Z2 082429 0132 Rev. 30

Holder of Certificate: **Risen Energy Co.,Ltd**
Meilin, Ninghai,
315609 Ningbo, Zhejiang
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 and certification regulations of TÜV SÜD Group have to be complied. For details see: www.tuvsud.com/ps-cert

Test report no.: 704061704304-31

Valid until: 2028-11-15

Date, 2023-11-22

(Zhulin Zhang)

CERTIFICATE

No. Z2 082429 0132 Rev. 30

Model(s):

RSM72-6-xxxMDG, xxx=315 to 385 in step of 5
RSM60-6-xxxMDG, xxx=265 to 320 in step of 5
RSM144-6-xxxMDG, xxx=350 to 415 in step of 5
RSM132-6-xxxMDG, xxx=320 to 380 in step of 5
RSM120-6-xxxMDG, xxx=295 to 350 in step of 5
RSM72-6-xxxBMDG, xxx=340 to 385 in step of 5
RSM60-6-xxxBMDG, xxx=280 to 325 in step of 5
RSM144-6-xxxBMDG, xxx=360 to 415 in step of 5
RSM132-6-xxxBMDG, xxx=330 to 380 in step of 5
RSM120-6-xxxBMDG, xxx=300 to 350 in step of 5
RSM156-6-xxxBHDG, xxx=435 to 465 in step of 5
RSM144-6-xxxBHDG, xxx=400 to 430 in step of 5
RSM132-6-xxxBHDG, xxx=365 to 390 in step of 5
RSM120-6-xxxBHDG, xxx=330 to 360 in step of 5
RSM144-7-xxxBMDG, xxx=425 to 455 in step of 5
RSM132-7-xxxBMDG, xxx=390 to 420 in step of 5
RSM120-7-xxxBMDG, xxx=355 to 380 in step of 5
RSM144-6-xxxBMDG, xxx=425 to 455 in step of 5
RSM132-6-xxxBMDG, xxx=390 to 420 in step of 5
RSM120-6-xxxBMDG, xxx=355 to 380 in step of 5
RSM150-8-xxxBMDG, xxx= 465 to 510 in step of 5
RSM90-8-xxxBMDG, xxx= 285 to 300 in step of 5
RSM144-9-xxxBMDG, xxx= 520 to 560 in step of 5
RSM132-9-xxxBMDG, xxx= 480 to 510 in step of 5
RSM120-9-xxxBMDG, xxx= 435 to 465 in step of 5
RSM120-8-xxxBMDG, xxx= 560 to 615 in step of 5
RSM110-8-xxxBMDG, xxx= 525 to 565 in step of 5
RSM80-8-xxxBMDG, xxx= 380 to 405 in step of 5
RSM132-8-xxxBMDG, xxx= 635 to 675 in step of 5
RSM144-7-xxxBMDGZ, xxx=425 to 455 in step of 5
RSM132-7-xxxBMDGZ, xxx=390 to 420 in step of 5
RSM120-7-xxxBMDGZ, xxx=355 to 380 in step of 5
RSM144-6-xxxHDGB, xxx=400 to 430 in step of 5
RSM132-6-xxxHDGB, xxx=365 to 390 in step of 5
RSM120-6-xxxHDGB, xxx=330 to 360 in step of 5
RSM132-8-xxxBNDG, xxx=665 to 695 in step of 5
RSM120-8-xxxBNDG, xxx=605 to 635 in step of 5
RSM110-8-xxxBNDG, xxx= 550 to 580 in step of 5
RSM132-8-xxxBHDG, xxx= 650 to 715 in step of 5
RSM120-8-xxxBHDG, xxx= 590 to 655 in step of 5
RSM110-8-xxxBHDG, xxx= 540 to 600 in step of 5
RSM264-8-xxxBMDG, xxx= 645 to 670 in step of 5
RSM156-9-xxxBNDG, xxx= 605 to 635 in step of 5
RSM144-9-xxxBNDG, xxx= 550 to 590 in step of 5
RSM120-9-xxxBNDG, xxx= 455 to 490 in step of 5
RSM108-9-xxxBNDG, xxx= 410 to 440 in step of 5
RSM144-10-xxxBNDG, xxx=570 to 610 in step of 5
RSM120-10-xxxBNDG, xxx=475 to 500 in step of 5
RSM108-10-xxxBNDG, xxx=425 to 460 in step of 5
xxx is standing for rated output power at STC



CERTIFICATE

No. Z2 082429 0132 Rev. 30

Parameters:

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

Tested according to:

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



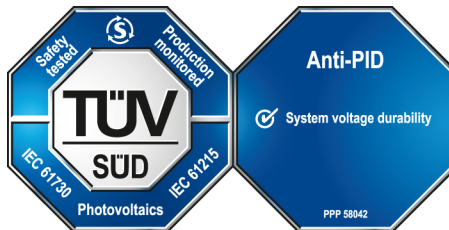
Product Service

CERTIFICATE

No. Z2 082429 0154 Rev. 18

Holder of Certificate: **Risen Energy Co.,Ltd**
Meilin, Ninghai,
315609 Ningbo, Zhejiang
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 and certification regulations of TÜV SÜD Group have to be complied. For details see: www.tuvsud.com/ps-cert

Test report no.: 704061900414-18

Valid until: 2028-11-26

Date, 2023-12-06

(Zhulin Zhang)



CERTIFICATE

No. Z2 082429 0154 Rev. 18

Model(s):

RSM72-6-xxxBMDG, xxx=340 to 385 in step of 5
 RSM60-6-xxxBMDG, xxx=280 to 325 in step of 5
 RSM72-6-xxxMDG, xxx=315 to 385 in step of 5
 RSM60-6-xxxMDG, xxx=265 to 320 in step of 5
 RSM144-6-xxxMDG, xxx=350 to 415 in step of 5
 RSM132-6-xxxMDG, xxx=320 to 380 in step of 5
 RSM120-6-xxxMDG, xxx=295 to 350 in step of 5
 RSM144-6-xxxBMDG, xxx=360 to 415 in step of 5
 RSM132-6-xxxBMDG, xxx=330 to 380 in step of 5
 RSM120-6-xxxBMDG, xxx=300 to 350 in step of 5
 RSM156-6-xxxBHDG, xxx=435 to 465 in step of 5
 RSM144-6-xxxBHDG, xxx=400 to 430 in step of 5
 RSM132-6-xxxBHDG, xxx=365 to 390 in step of 5
 RSM120-6-xxxBHDG, xxx=330 to 360 in step of 5
 RSM144-7-xxxBMDG, xxx=425 to 455 in step of 5
 RSM144-6-xxxBMDG, xxx=425 to 455 in step of 5
 RSM132-7-xxxBMDG, xxx=390 to 420 in step of 5
 RSM132-6-xxxBMDG, xxx=390 to 420 in step of 5
 RSM120-7-xxxBMDG, xxx=355 to 380 in step of 5
 RSM120-6-xxxBMDG, xxx=355 to 380 in step of 5
 RSM150-8-xxxBMDG, xxx= 465 to 510 in step of 5
 RSM90-8-xxxBMDG, xxx=285 to 300 in step of 5
 RSM144-9-xxxBMDG, xxx=520 to 560 in step of 5
 RSM132-9-xxxBMDG, xxx=480 to 510 in step of 5
 RSM120-9-xxxBMDG, xxx=435 to 465 in step of 5
 RSM144-6-xxxHDGB, xxx=400 to 430 in step of 5
 RSM132-6-xxxHDGB, xxx=365 to 390 in step of 5
 RSM120-6-xxxHDGB, xxx=330 to 360 in step of 5
 RSM132-8-xxxBMDG, xxx=635 to 675 in step of 5
 RSM120-8-xxxBMDG, xxx=560 to 615 in step of 5
 RSM110-8-xxxBMDG, xxx=525 to 565 in step of 5
 RSM80-8-xxxBMDG, xxx=380 to 405 in step of 5
 RSM132-8-xxxBNDG, xxx=665 to 695 in step of 5
 RSM120-8-xxxBNDG, xxx=605 to 635 in step of 5
 RSM110-8-xxxBNDG, xxx=550 to 580 in step of 5
 RSM132-8-xxxBHDG, xxx=650 to 715 in step of 5
 RSM120-8-xxxBHDG, xxx=590 to 655 in step of 5
 RSM110-8-xxxBHDG, xxx=540 to 600 in step of 5
 RSM144-10-xxxBNDG, xxx=570 to 610 in step of 5
 RSM120-10-xxxBNDG, xxx=475 to 500 in step of 5
 RSM108-10-xxxBNDG, xxx=425 to 460 in step of 5
 RSM156-9-xxxBNDG, xxx=605 to 635 in step of 5
 RSM144-9-xxxBNDG, xxx=550 to 590 in step of 5
 RSM120-9-xxxBNDG, xxx=455 to 490 in step of 5
 RSM108-9-xxxBNDG, xxx=410 to 440 in step of 5
 xxx is standing for rated output power at STC



CERTIFICATE

No. Z2 082429 0154 Rev. 18

Parameters:

Construction:	Framed double glass with Junction box, Cable and Connectors.
Safety Class :	Class II
Maximum System Voltage:	1500 V DC
Fire Safety Class:	Class A or C according to UL790
PID test condition:	±1500 V DC, 85 °C, 85 % RH, 96h

PID testing method is according to IEC TS 62804-1:2015.

Tested according to:

PPP 58042B:2015
 IEC 61215-1:2016
 IEC 61215-1-1:2016
 IEC 61215-2:2016
 IEC 61730-1:2016
 IEC 61730-2:2016



LIMITED WARRANTY

FOR RISEN ENERGY
N-TYPE DUAL GLASS PV MODULE

Revision: A2[2023]



The warranties described in this limited warranty (such warranties being referred to collectively as this “Warranty”) cover SPV MODULES manufactured by Risen Energy Co., Ltd (“Risen”) as:

1. RSM60-6-xxxBHDG (xxx=Module Power)
2. RSM120-6-xxxBHDG (xxx=Module Power)
3. RSM144-6-xxxBHDG (xxx=Module Power)
4. RSM120-6-xxxHDG (xxx=Module Power)
5. RSM144-6-xxxHDG (xxx=Module Power)
6. RSM110-8-xxxBHDG (xxx=Module Power)
7. RSM120-8-xxxBHDG (xxx=Module Power)
8. RSM132-8-xxxBHDG (xxx=Module Power)
9. RSM110-8-xxxBNDG (xxx=Module Power)
10. RSM120-8-xxxBNDG (xxx=Module Power)
11. RSM132-8-xxxBNDG (xxx=Module Power)
12. RSM108-9-xxxBNDG (xxx=Module Power)
13. RSM144-9-xxxBNDG (xxx=Module Power)
14. RSM156-9-xxxBNDG (xxx=Module Power)
15. RSM108-10-xxxBNDG (xxx=Module Power)
16. RSM144-10-xxxBNDG (xxx=Module Power)

This Limited Warranty is valid from May 15th 2023 and shall remain valid until superseded from time to time by a successive limited warranty.

This Limited Warranty applies to the SPV MODULES which are manufactured after May 15th 2023.

For the avoidance of doubt, all SPV MODULES supplied by Risen during the tenure of this Limited Warranty shall have the terms of this Limited Warranty applied during the SPV MODULE warranty periods as described herein.

Risen warrants to the Purchaser (“Purchaser”) of any above-referenced SPV MODULE that, when shipped in its original container to its destination of installation, the SPV MODULE will be free from defective workmanship and materials under normal application, installation, use and service conditions, and at its option, Risen will either repair the defect or replace the defective SPV MODULE or part thereof with a new or remanufactured equivalent at no charge to Purchaser for parts or labor for the period(s) set forth herein.

This Warranty is in addition to whatever implied warranties may be granted to Purchaser by law; please see clause 5 following for additional details. All implied warranties including the warranties of merchantability and fitness for a particular purpose are limited to the period(s) set forth herein, which commence on the Warranty Start Date. No other offer of warranty, either expressly stated or implied, by any person or entity, will supersede the conditions of this Warranty.

1. General Exclusion

This Warranty shall be sole and exclusive warranties granted by Risen and shall be the sole and exclusive remedy available to Purchaser. This exclusion applies to the extent permissible by law. Correction of defects, in the manner and for the period of time described herein, shall constitute complete fulfillment of all liabilities and responsibilities of Risen to Purchaser or other end user with respect to the SPV MODULE and shall constitute full satisfaction of all claims, whether based on contract, negligence, and strict liability otherwise. In no event shall Risen be liable, or in any way responsible, for any damages or defects in the SPV MODULE that are caused by repairs or attempted repairs performed by anyone other than Risen or its employees or contractors or other service providers authorized by Risen. Risen shall not be liable or in any way responsible for any incidental or consequential loss. Risen’s aggregate liability in damages or otherwise shall not exceed the invoice amount paid by Purchaser for the applicable SPV MODULE(s).

2. Warranty

2.1 Limited Product Warranty

The warranty period for material defects and workmanship shall follow the Warranty Start Date as set forth below, and during such warranty period, the SPV MODULES(s):

- Will be free from material defects in design, materials and workmanship that impair the performance of the Module (“Limited Product Warranty”);
- Will conform to the specifications and the drawings applicable thereto.

Any deterioration in appearance of the SPV MODULE(s), including any normal wear and tear, scratches, stains, mechanical wear, rust, mold, optical deterioration, that occur after delivery to Purchaser shall not qualify as a defect hereunder, if and to the extent such deterioration does not result in a material impairment of the functioning of the SPV MODULE(s). Glass breakage shall constitute a claim under this Warranty only to the extent that there is no external cause of the breakage.



2.1.1 12 Years Limited Product Warranty

Products identified with product identification number(s):

1. RSM60-6-xxxBHDG (xxx=Module Power)
2. RSM120-6-xxxBHDG (xxx=Module Power)
3. RSM144-6-xxxBHDG (xxx=Module Power)
4. RSM120-6-xxxHDG (xxx=Module Power)
5. RSM144-6-xxxHDG (xxx=Module Power)
6. RSM110-8-xxxBNDG (xxx=Module Power)
7. RSM120-8-xxxBNDG (xxx=Module Power)
8. RSM132-8-xxxBNDG (xxx=Module Power)

2.1.2 15 Years Limited Product Warranty

Products identified with product identification number(s):

1. RSM110-8-xxxBHDG (xxx=Module Power)
2. RSM120-8-xxxBHDG (xxx=Module Power)
3. RSM132-8-xxxBHDG (xxx=Module Power)
4. RSM108-9-xxxBNDG (xxx=Module Power)
5. RSM144-9-xxxBNDG (xxx=Module Power)
6. RSM156-9-xxxBNDG (xxx=Module Power)
7. RSM108-10-xxxBNDG (xxx=Module Power)
8. RSM144-10-xxxBNDG (xxx=Module Power)

2.2 30 Years Limited Power Warranty

The warranty period with respect to minimum power output continues for a total of 30 years from the Warranty Start Date.

2.2.1 Annual Power Variation

(a) Products identified with product identification number(s):

1. RSM60-6-xxxBHDG (xxx=Module Power)
2. RSM120-6-xxxBHDG (xxx=Module Power)
3. RSM144-6-xxxBHDG (xxx=Module Power)
4. RSM120-6-xxxHDG (xxx=Module Power)
5. RSM144-6-xxxHDG (xxx=Module Power)

At the end of the first year, minimum power will be not less than 98% for n-type PV Modules of the minimum rated power output as specified in Risen's Product Specification, provided that such loss in power is determined to be due to defects in material or workmanship, and at the end of each year after the first year, the power output will not have reduced by more than 0.45% per year of the original rated power output specified in Risen's Product Specification, provided that such loss in power is determined to be due to defects in material or workmanship.

(b) Products identified with product identification number(s):

1. RSM110-8-xxxBHDG (xxx=Module Power)
2. RSM120-8-xxxBHDG (xxx=Module Power)
3. RSM132-8-xxxBHDG (xxx=Module Power)

At the end of the first year, minimum power will be not less than 99% for n-type PV Modules of the minimum rated power output as specified in Risen's Product Specification, provided that such loss in power is determined to be due to defects in material or workmanship, and at the end of each year after the first year, the power output will not have reduced by more than 0.3% per year of the original rated power output specified in Risen's Product Specification, provided that such loss in power is determined to be due to defects in material or workmanship.

(c) Products identified with product identification number(s):

1. RSM110-8-xxxBNDG (xxx=Module Power)
2. RSM120-8-xxxBNDG (xxx=Module Power)
3. RSM132-8-xxxBNDG (xxx=Module Power)
4. RSM108-9-xxxBNDG (xxx=Module Power)
5. RSM144-9-xxxBNDG (xxx=Module Power)
6. RSM156-9-xxxBNDG (xxx=Module Power)
7. RSM108-10-xxxBNDG (xxx=Module Power)
8. RSM144-10-xxxBNDG (xxx=Module Power)

At the end of the first year, minimum power will be not less than 99% for n-type PV Modules of the minimum rated power output as specified in Risen's Product Specification, provided that such loss in power is determined to be due to defects in material or workmanship, and at the end of each year after the first year, the power output will not have reduced by more than 0.4% per year of the original rated power output specified in Risen's Product Specification, provided that such loss in power is determined to be due to defects in material or workmanship.

3. Additional Item(s) Excluded from Warranty Coverage

This Warranty does not apply in the event that:

- a) Purchaser has failed to pay the due purchase price to Risen or Risen's subsidiary if such subsidiary performed the sale to the Purchaser.

In the event that a customer has purchased the SPV MODULE directly (“Direct Customer”) from Risen or a Risen subsidiary, the Direct Customer shall not be entitled to withhold the due purchase price or part thereof, as such withholding shall render the warranty inoperable until the purchase price is paid. In the event that a Direct Customer chooses to initiate a claim under the terms of the warranty and the due purchase price is not complete Risen shall inform the Purchaser of the details of the uninitiated claim whereafter the Purchaser can choose to resolve the unpaid due purchase price and re-instate the warranty to operational status;

- b) Purchaser’s failure to provide proof of purchase or product information;
- c) If the SPV MODULE is improperly installed, or is abused or misused;
- d) If the type or serial number of the SPV MODULE has been altered, removed or made illegible;
- e) If the SPV MODULE is installed in a mobile (excluding a photovoltaic tracking system) or marine environment (excluding marine modules) or is subjected to improper voltage or power surges or abnormal environmental conditions (such as acid rain or other pollution);
- f) If the components of the construction on which the SPV MODULE is mounted are defective, causing external corrosion, mold discoloration or the like to occur;
- g) If the defects are caused by the SPV MODULE being subjected to any of the following: extreme thermal or environmental conditions or rapid changes in such conditions, corrosion, oxidation, modifications or connections not authorized by Risen, opening or repair not authorized by Risen, accident, force of nature (such as lightning strike), contamination by a chemical product, or other acts beyond Risen’s reasonable control (including but not limited to damage by fire, flood, and the like);
- h) To death of or injury to persons resulting from any cause other than the negligence or willful misconduct of Risen or its employees or contractors or other agents or representatives;
- i) To incidental, consequential or special damages such as loss of use, loss of profits, revenues, business, goodwill, damage to reputation or expenses payable to a third party.

4. Various

Neither the repair or replacement of the SPV MODULES, nor the supply of additional SPV MODULES, shall cause the amendment of the original Warranty Start Date, and the original periods of this Warranty shall not be extended thereby. Any replaced SPV MODULES shall become the property of Risen for their disposal. If Risen discontinues the type of SPV MODULE covered by this Warranty, Risen has the right to deliver another type of SPV MODULE (different in size, color, shape and/or power) of equivalent or greater power, as appropriate.

5. Statutory Rights

This Warranty does not affect Purchaser’s statutory rights available within Purchaser’s jurisdictional territory in respect of the sale of consumer goods, and if such statutory rights exist, including but not limited to pursuant to national laws executing EC directive 99/44 or pursuant to the Magnuson Moss Warranty Act, such statutory rights will prevail over this Warranty. If the laws of Purchaser’s jurisdictional territory do not allow the exclusion or limitation of consequential or incidental damages, the laws of such jurisdictional territory will prevail over this Warranty. Specifically applicable to Purchasers that are defined as “consumers” within the meaning of Australian Consumer Law, (a) Purchaser is entitled to (i) either the repair or the replacement of the goods, if the goods fail to be of acceptable quality, or (ii) either the replacement of the goods or the refund of its payment for the goods, if the goods undergo a major failure, and (b) if the goods undergo a major failure, Purchaser is also entitled to compensation for any reasonably foreseeable loss or damage.

6. Force Majeure

Risen shall not be responsible or liable in any way to Purchaser for any non-performance or delay in performance under this Warranty due to acts God, war, riots, strikes, unavailability of suitable and sufficient labor, material, or capacity or technical or yield failures and any unforeseen event beyond its control, including but not limited to any technological or physical event or condition that is not reasonably known or understood at the time of the sale of the SPV MODULE(s) or the claim.

7. Severability

If any provision of this Warranty or the application thereof to any person or circumstance is held illegal, invalid or otherwise unenforceable, such holding shall not affect any of the other provisions of this Warranty, and to that end, such other provisions of this Warranty shall be treated as severable.

8. Transferability

This Warranty shall be transferable by Purchaser to a new legal owner of the SPV MODULE, provided that:

- a) Such new owner also takes possession of the original proof of purchase;
- b) The modules remain in their original installation location;
- c) None of the provisions this Warranty shall have been breached by Purchaser prior to such transfer of ownership.

For the avoidance of doubt, the transfer of this Warranty does not amend the original Warranty Start Date or the applicable periods specified herein.

9. Applicable Law & Dispute

The validity, construction and interpretation of this Warranty and the enforcement of the rights and duties of Purchaser and Risen hereunder shall be governed by the laws of the country of the original installation location of the SPV MODULES (excluding such country's conflicts of law rules) and to the exclusion of the United Nations Convention on the International Sale of Goods dated 11th April 1980 (CISG) and any other uniform law.

All disputes arising out of, or in connection with, this Warranty shall be finally settled before the ordinary courts of the country of the original installation location of the SPV MODULE(s).

10. Warranty Start Date

The Warranty Start Date is the earlier of (a) the date of delivery (as per Incoterms 2020) of the SPV MODULE(s) to Purchaser and (b) the date that is six months after the date of shipment of the SPV MODULE(s) from Risen's production facility.

11. Claims Procedure

In the event that Purchaser determines that a claim can be made under this Warranty, Purchaser shall immediately deliver written notification thereof to Risen

at the address shown below, specifying each alleged claim (including evidence thereof), the original Purchaser's proof of purchase, and the corresponding serial number(s) of the affected SPV MODULE(s). In the preceding sentence, the term "immediately" means within 2 months of identifying the defect or other problem that purchaser believes underlies each claim being made under this Warranty.

Purchaser's return of any SPV MODULE(s) will not be accepted unless prior written authorization shall have been given by Risen, and upon such authorization to return SPV MODULE(s), Purchaser must arrange secure packaging that is sufficient to ensure that there is no change in the state of the SPV MODULE(s) during return shipment and shall insure such SPV MODULE(s) for the benefit of Risen. Risen will be responsible for any return shipment transportation charges, customs clearance and other costs of returning SPV MODULE(s) and for the costs of reshipment of any repaired or replacement SPV MODULE(s) but will not be responsible for the costs related to removal or installation or reinstallation of SPV MODULE(s).

In the event of a dispute between Purchaser and Risen that arises out of the technical evaluation of the validity of any Warranty claim, a first-class international test-institute (such as TUV Rheinland in Cologne, Germany, or Arizona State University in the state of Arizona, United States of America, or other organization or institution of comparable competence and international standing) shall be engaged to determine the validity of such claim, and such determination by such test-institute shall be final, conclusive and binding on both parties. The party whose position on the validity or non-validity of any claim is counter to the determination of such test-institute shall bear the cost of such technical evaluation and determination by such test-institute.

It is Risen's belief that Purchaser will have trouble-free use and enjoy ongoing viability of operation by deploying Risen's SPV MODULES. This Warranty provides confirmation of the remedial rights and offers additional comfort.

If Purchaser seeks additional information on the applicability of this Warranty, please contact Purchaser's Risen representative.

Risen Energy Co., Ltd,
Add: Tashan Industry Zone, Meilin Street,
Ninghai-315609, People's Republic of China
Tel: +86-574-59953239
Fax: +86-574-59953599
E-mail: afterservice@risenenergy.com
E-mail: info@risenenergy.com



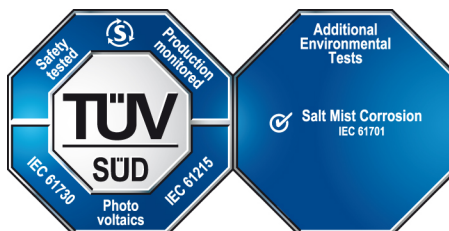
Product Service

CERTIFICATE

No. Z2 082429 0150 Rev. 16

Holder of Certificate: **Risen Energy Co.,Ltd**
Meilin, Ninghai,
315609 Ningbo, Zhejiang
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 and certification regulations of TÜV SÜD Group have to be complied. For details see: www.tuvsud.com/ps-cert

Test report no.: 704061802960-16

Valid until: 2028-11-26

Date, 2023-12-06

(Zhulin Zhang)

CERTIFICATE

No. Z2 082429 0150 Rev. 16

Model(s):

RSM144-6-xxxBMDG, xxx=360 to 415 in step of 5
RSM132-6-xxxBMDG, xxx=330 to 380 in step of 5
RSM120-6-xxxBMDG, xxx=300 to 350 in step of 5
RSM144-7-xxxBMDG, xxx=425 to 455 in step of 5
RSM132-7-xxxBMDG, xxx=390 to 420 in step of 5
RSM120-7-xxxBMDG, xxx=355 to 380 in step of 5
RSM144-6-xxxBMDG, xxx=425 to 455 in step of 5
RSM132-6-xxxBMDG, xxx=390 to 420 in step of 5
RSM120-6-xxxBMDG, xxx=355 to 380 in step of 5
RSM72-6-xxxBMDG, xxx=340 to 385 in step of 5
RSM60-6-xxxBMDG, xxx=280 to 325 in step of 5
RSM156-6-xxxBHDG, xxx=435 to 465 in step of 5
RSM144-6-xxxBHDG, xxx=400 to 430 in step of 5
RSM132-6-xxxBHDG, xxx=365 to 390 in step of 5
RSM120-6-xxxBHDG, xxx=330 to 360 in step of 5
RSM144-6-xxxMDG, xxx=350 to 415 in step of 5
RSM132-6-xxxMDG, xxx=320 to 380 in step of 5
RSM120-6-xxxMDG, xxx=295 to 350 in step of 5
RSM150-8-xxxBMDG, xxx=465 to 510 in step of 5
RSM90-8-xxxBMDG, xxx=285 to 300 in step of 5
RSM144-9-xxxBMDG, xxx=520 to 560 in step of 5
RSM132-9-xxxBMDG, xxx=480 to 510 in step of 5
RSM120-9-xxxBMDG, xxx=435 to 465 in step of 5
RSM144-6-xxxHDGB, xxx=400 to 430 in step of 5
RSM132-6-xxxHDGB, xxx=365 to 390 in step of 5
RSM120-6-xxxHDGB, xxx=330 to 360 in step of 5
RSM132-8-xxxBMDG, xxx=635 to 675 in step of 5
RSM120-8-xxxBMDG, xxx=560 to 615 in step of 5
RSM110-8-xxxBMDG, xxx=525 to 565 in step of 5
RSM80-8-xxxBMDG, xxx=380 to 405 in step of 5
RSM132-8-xxxBNDG, xxx=665 to 695 in step of 5
RSM120-8-xxxBNDG, xxx=605 to 635 in step of 5
RSM110-8-xxxBNDG, xxx=550 to 580 in step of 5
RSM132-8-xxxBHDG, xxx=650 to 715 in step of 5
RSM120-8-xxxBHDG, xxx=590 to 655 in step of 5
RSM110-8-xxxBHDG, xxx=540 to 600 in step of 5
RSM144-10-xxxBNDG, xxx=570 to 610 in step of 5
RSM120-10-xxxBNDG, xxx=475 to 500 in step of 5
RSM108-10-xxxBNDG, xxx=425 to 460 in step of 5
RSM156-9-xxxBNDG, xxx=605 to 635 in step of 5
RSM144-9-xxxBNDG, xxx=550 to 590 in step of 5
RSM120-9-xxxBNDG, xxx=455 to 490 in step of 5
RSM108-9-xxxBNDG, xxx=410 to 440 in step of 5
xxx is standing for rated output power at STC

Parameters:

Construction:	Framed, double glass with Junction box, Cable and Connectors.
Safety Class:	Class II
Maximum System Voltage:	1500 V DC
Fire Safety Class:	Class A or C according to UL790
Test method of salt mist test:	Test method 6

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 61701:2020

VERIFICATION OF COMPLIANCE

No.: SHES2305008241PV

Applicant: Risen Energy Co., Ltd.
Meilin, Ninghai, 315609, Ningbo, Zhejiang,
PEOPLE'S REPUBLIC OF CHINA

Manufacturer: Risen Energy (Changzhou) Co., Ltd.
No.1, Shuinan Road Industrial Concentration Area, Zhixi Town,
Jintan District 213251 Changzhou City, Jiangsu Province
PEOPLE'S REPUBLIC OF CHINA
Risen Energy (Yiwu) Co., Ltd.
No.599, Sufu Road Suxi Town 322000 Yiwu City, Zhejiang
Province PEOPLE'S REPUBLIC OF CHINA
Risen Energy (Chuzhou) Co., Ltd.
No.325, East Tongling Road, 239000 Chuzhou City Anhui,
China
Risen Energy (Ningbo) Co.,Ltd.
No.1, Middle Xingke Road Ninghai County 315609 Ningbo City,
Zhejiang Province PEOPLE'S REPUBLIC OF CHINA
RISEN SOLAR TECHNOLOGY SDN. BHD.
NO 3, JALAN HI-TECH 14, ZONE INDUSTRI FASA 4, KULIM
HI-TECH PARK, 09090 KULIM, KEDAH DARUL AMAN,
MALAYSIA
Risen Energy (Baotou) Co., Ltd.
Baotou Jinshan Industrial Park, Guyang County, Baotou City
014200 Inner Mongolia Autonomous Region PEOPLE'S
REPUBLIC OF CHINA
Risen Solar (Ningbo) Technology Co., Ltd.
No. 5, Jinhai East Road, Binhai New Area Ninghai 315602
Ningbo City, Zhejiang Province PEOPLE'S REPUBLIC OF
CHINA

Product Name: Photovoltaic Modules

Model No.: Refer to page 2

Trade Mark:



Van Hua
Van Hua

Laboratory Technical Manager
SGS-CSTC

2023-12-05



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Member of SGS Group (Société Générale de Surveillance)

No.: SHES2305008241PV

Rating: Refer to page 2

Protection against Electric Shock: Class II

Additional Information (if any): RSM156-9-610BNDG is selected as test sample and tested by blowing sand test refer to IEC 60068-2-68:1994 Lc1, including initial and final visual inspection (10.1), maximum power determination (10.2) of IEC 61215:2005; dielectric withstand test (MST16), wet leakage current test (MST 17) of IEC 61730-2:2012 and electroluminescence test.

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

Test Standard: IEC 60068-2-68:1994
IEC 61215-2:2016
IEC 61730-2:2016

as shown in the

Test Report Number(s): SHES230500824171

This Verification of Compliance has been granted to the applicant based on the results of tests, performed by Laboratory of SGS-CSTC Standards Technical Services Co., Ltd. on sample of the above-mentioned product in accordance with the provisions of the relevant specific standards.

Other information added:

Model No:

PV Modules with 6" Poly-crystalline Silicon Solar Cells:

72 cells: RSM72-6-xxxPDG (xxx=315 - 360, increments of 5)

60 cells: RSM60-6-xxxPDG (xxx=265 - 300, increments of 5)

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

72 cells: RSM72-6-xxxMDG (xxx=315 - 385, increments of 5)

60 cells: RSM60-6-xxxMDG (xxx=265 - 320, increments of 5)

72 cells: RSM72-6-xxxBMDG (xxx=340 - 385, increments of 5)

60 cells: RSM60-6-xxxBMDG (xxx=280 - 325, increments of 5)

144 cells: RSM144-6-xxxMDG (xxx=350 - 415, increments of 5)

144 cells: RSM144-6-xxxBMDG (xxx=360 - 415, increments of 5)

132 cells: RSM132-6-xxxMDG (xxx=320 - 380, increments of 5)

132 cells: RSM132-6-xxxBMDG (xxx=330 - 380, increments of 5)

120 cells: RSM120-6-xxxMDG (xxx=295 - 350, increments of 5)

120 cells: RSM120-6-xxxBMDG (xxx=300 - 350, increments of 5)

156 cells: RSM156-6-xxxBHDG (xxx=435 - 465, increments of 5)

144 cells: RSM144-6-xxxBHDG (xxx=400 - 430, increments of 5)

132 cells: RSM132-6-xxxBHDG (xxx=365 - 390, increments of 5)

Althas
Van Hua

Laboratory Technical Manager
SGS-CSTC



2023-12-05

No.:

SHES2305008241PV

120 cells: RSM120-6-xxxBHDG (xxx=330 - 360, increments of 5)
 144 cells: RSM144-6-xxxHDGB (xxx=400 - 430, increments of 5)
 132 cells: RSM132-6-xxxHDGB (xxx=365 - 390, increments of 5)
 120 cells: RSM120-6-xxxHDGB (xxx=330 - 360, increments of 5)
PV Modules with 166mm Mono-crystalline Silicon Solar Cells:
 144 cells: RSM144-6-xxxBMDG (xxx=425 - 455, increments of 5)
 RSM144-7-xxxBMDG (xxx=425 - 455, increments of 5)
 132 cells: RSM132-6-xxxBMDG (xxx=390 - 420, increments of 5)
 RSM132-7-xxxBMDG (xxx=390 - 420, increments of 5)
 120 cells: RSM120-6-xxxBMDG (xxx=355 - 380, increments of 5)
 RSM120-7-xxxBMDG (xxx=355 - 380, increments of 5)
PV Modules with 210mm 1/3 cut Mono-crystalline Silicon Solar Cells:
 150 cells: RSM150-8-xxxBMDG (xxx=465 - 510, increments of 5)
 90 cells: RSM90-8-xxxBMDG (xxx=285 - 300, increments of 5)
PV Modules with 182mm Mono-crystalline Silicon Solar Cells:
 144 cells: RSM144-9-xxxBMDG (xxx=520 - 560, increments of 5)
 132 cells: RSM132-9-xxxBMDG (xxx=480 - 510, increments of 5)
 120 cells: RSM120-9-xxxBMDG (xxx=435 - 465, increments of 5)
PV Modules with 210mm 1/2 cut Mono-crystalline Silicon Solar Cells:
 132 cells: RSM132-8-xxxBMDG (xxx=635 - 675, increments of 5)
 120 cells: RSM120-8-xxxBMDG (xxx=560 - 615, increments of 5)
 110 cells: RSM110-8-xxxBMDG (xxx=525 - 565, increments of 5)
 80 cells: RSM80-8-xxxBMDG (xxx=380 - 405, increments of 5)
PV Modules with 210mm 1/4 cut Mono-crystalline Silicon Solar Cells:
 264 cells: RSM264-8-xxxBMDG (xxx=645 - 670, increments of 5)
PV Modules with 210mm 1/2 cut N-Type-crystalline Silicon Solar Cells:
 120 cells: RSM120-8-xxxBNDG (xxx=605-635, increments of 5)
 132 cells: RSM132-8-xxxBNDG (xxx=665-695, increments of 5)
 110 cells: RSM110-8-xxxBNDG (xxx=550-580, increments of 5)
PV Modules with 210mm 1/2 cut N-Type-HJT-crystalline Silicon Solar Cells:
 132 cells: RSM132-8-xxxBHDG (xxx=650-715, increments of 5)
 120 cells: RSM120-8-xxxBHDG (xxx=590-655, increments of 5)
 110 cells: RSM110-8-xxxBHDG (xxx=540-600, increments of 5)
PV Modules with 182.2mm 1/2 cut N-Type-crystalline Silicon Solar Cells:
 156 cells: RSM156-9-xxxBNDG (xxx=605-635, increments of 5)
 144 cells: RSM144-9-xxxBNDG (xxx=550-590, increments of 5)
 120 cells: RSM120-9-xxxBNDG (xxx=455-490, increments of 5)
 108 cells: RSM108-9-xxxBNDG (xxx=410-440, increments of 5)
PV Modules with 182.2mm 1/2 cut N-Type-crystalline Silicon Solar Cells:
 144 cells: RSM144-10-xxxBNDG (xxx=570-610, increments of 5)
 120 cells: RSM120-10-xxxBNDG (xxx=475-500, increments of 5)
 108 cells: RSM108-10-xxxBNDG (xxx=425-460, increments of 5)

Van Hua

Van Hua

Laboratory Technical Manager
 SGS-CSTC



2023-12-05