



No. Z2 099333 0045 Rev. 08

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. See also notes overleaf.

Test report no.:

704061700516-08

Valid until:

2025-04-13

Date,

2020-04-14

(Zhulin Zhang)



No. Z2 099333 0045 Rev. 08

Model(s):

LR6-72HV-xxxM, (xxx=335-360 in step of 5) LR6-60HV-xxxM, (xxx=280-300 in step of 5) LR6-72PH-xxxM, (xxx=340-380 in step of 5) LR6-60PH-xxxM, (xxx=285-315 in step of 5) LR6-72HPH-xxxM, (xxx=365-395 in step of 5) LR6-72HIH-xxxM, (xxx=365-395 in step of 5) LR6-60HPH-xxxM, (xxx=300-325, in step of 5) LR6-60HIH-xxxM, (xxx=300-325 in step of 5) LR6-72OPH-xxxM, (xxx=385-415 in step of 5) LR6-60OPH-xxxM, (xxx=335-365 in step of 5) LR6-72HPH-xxxMC, (xxx=375-390 in step of 5) LR6-60HPH-xxxMC, (xxx=305-325 in step of 5) LR6-60ZPH-xxxM, (xxx=330-355 in step of 5) LR4-72HPH-xxxM, (xxx=420-455 in step of 5) LR4-72HIH-xxxM, (xxx=420-440 in step of 5) LR4-60HPH-xxxM, (xxx=350-375 in step of 5) LR4-60HIH-xxxM, (xxx=350-370 in step of 5) LR4-72ZPH-xxxM, (xxx=420-435 in step of 5) LR4-60ZPH-xxxM, (xxx=350-365 in step of 5) LR4-78ZPH-xxxM, (xxx=470-475 in step of 5) xxx is standing for rated output power at STC

Parameters:

Fire Safety Class:

Class C according to UL790. Class II

Safety Class: Max. System Voltage:

1500V DC

Test Laboratory:

Yangzhou Opto-Electrical Products Testing Institute.

No.10 West Kaifa Road, Yangzhou,

225009 Jiangsu, P.R.China. Framed, with Junction box,

Construction:

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 61215-1:2016 EN 61215-1-1:2016 EN 61215-2:2017 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

Production Facility(ies): 099605, 099626, 099606, 090968, 001192, 002875,

096558, 102892, 097323, 103410, 103841



Attestation of Conformity

No. N8A 099333 0066 Rev. 02

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

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 testing and certification. See also notes overleaf.

Test report no.:

704061700516-07

Date.

2020-03-11

(Zhulin Zhang)

Page 1 of 2

After preparation of the necessary technical documentation as well as the EU declaration of conformity the required CE marking can be affixed on the product. The declaration of conformity is issued under the sole responsibility of the manufacturer. Other relevant EU-directives have to be observed.





Attestation of Conformity

No. N8A 099333 0066 Rev. 02

Model(s):

LR6-72HV-xxxM, (xxx=335-360 in step of 5) LR6-60HV-xxxM, (xxx=280-300 in step of 5) LR6-72PH-xxxM, (xxx=340-380 in step of 5) LR6-60PH-xxxM, (xxx=285-315 in step of 5) LR6-72HPH-xxxM, (xxx=365-395 in step of 5) LR6-72HIH-xxxM, (xxx=365-395 in step of 5) LR6-60HPH-xxxM, (xxx=300-325, in step of 5) LR6-60HIH-xxxM, (xxx=300-325 in step of 5) LR6-72OPH-xxxM, (xxx=385-415 in step of 5) LR6-60OPH-xxxM, (xxx=335-365 in step of 5) LR6-72HPH-xxxMC, (xxx=375-390 in step of 5) LR6-60HPH-xxxMC, (xxx=305-325 in step of 5) LR6-60ZPH-xxxM, (xxx=330-355 in step of 5) LR4-72HPH-xxxM, (xxx=420-455 in step of 5) LR4-72HIH-xxxM, (xxx=420-440 in step of 5) LR4-60HPH-xxxM, (xxx=350-375 in step of 5) LR4-60HIH-xxxM, (xxx=350-370 in step of 5) LR4-72ZPH-xxxM. (xxx=420-435 in step of 5) LR4-60ZPH-xxxM, (xxx=350-365 in step of 5) xxx is standing for rated output power at STC

Parameters:

Fire Safety Class:

Safety Class: Maximum System Voltage:

Test Laboratory:

Class C according to UL790

Class II

1500V DC

Yangzhou Opto-Electrical

Products Testing Institute.

No.10 West Kaifa Road, Yangzhou,

225009 Jiangsu, P.R.China.

Construction:

Framed, with Junction box.

cable and connector.

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

After preparation of the necessary technical documentation as well as the EU declaration of conformity the required CE marking can be affixed on the product. The declaration of conformity is issued under the sole responsibility of the manufacturer. Other relevant EU-directives have to be observed.





No. Z2 099333 0053 Rev. 03

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. See also notes overleaf.

Test report no.:

704061700519-03

Valid until:

2024-12-08

Date.

2019-12-10

(David Bo)

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No. Z2 099333 0053 Rev. 03

Model(s):

LR6-72HV-xxxM, (xxx=320 to 350 in step of 5) LR6-60HV-xxxM, (xxx=270 to 300 in step of 5) LR6-72PH-xxxM, (xxx=340 to 385 in step of 5) LR6-60PH-xxxM, (xxx=280 to 320 in step of 5) LR6-72HPH-xxxM, (xxx=350 to 405 in step of 5) LR6-72HIH-xxxM, (xxx=350 to 405 in step of 5) LR6-60HPH-xxxM, (xxx=295 to 335 in step of 5) LR6-60HIH-xxxM, (xxx=295 to 335 in step of 5) LR6-72OPH-xxxM, (xxx=385 to 400 in step of 5) LR6-60OPH-xxxM, (xxx=335 to 350 in step of 5) LR6-72HPH-xxxMC, (xxx=375 to 390 in step of 5) LR6-60HPH-xxxMC, (xxx=305 to 325 in step of 5) LR4-72HPH-xxxM, (xxx=400 to 460 in step of 5) LR4-72HIH-xxxM, (xxx=400 to 460 in step of 5) LR4-60HPH-xxxM, (xxx=330 to 380 in step of 5) LR4-60HIH-xxxM, (xxx=330 to 380 in step of 5) LR4-72ZPH-xxxM, (xxx=420 to 435 in step of 5) LR4-60ZPH-xxxM, (xxx=350 to 365 in step of 5) LR6-60ZPH-xxxM, (xxx=330 to 355 in step of 5) xxx is standing for rated output power at STC

Parameters:

Fire Safety Class:

Class C Class A

Application Class: Max. System Voltage:

1500V DC

Test method a of IEC TS 62804-1:2015

PID Test Condition:

±1500V DC, 96 hrs, 85 % RH, 85 °C.

Construction:

Framed, with Junction box,

cable and connector.

Tested according to: PPP 58042B:2015

IEC 61215:2005

IEC 61730-1:2004

IEC 61730-1:2004/AMD1:2011

IEC 61730-1:2004/AMD2:2013

IEC 61730-2:2004

IEC 61730-2:2004/AMD1:2011

Production Facility(ies): 099626, 099606, 090968, 001192, 096558, 099605,

002875, 097323, 102892, 103410, 103841



No. Z2 099333 0054 Rev. 03

Holder of Certificate:

LONGi Green Energy Technology Co., Ltd.

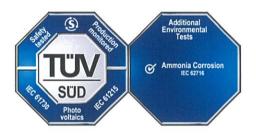
No. 388, Middle Hangtian Road

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. See also notes overleaf.

Test report no.:

704061700518-03

Valid until:

2024-12-04

Date,

2019-12-06

(David Bo)

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No. Z2 099333 0054 Rev. 03

Model(s):

LR6-72HV-xxxM, (xxx=320 to 350 in step of 5) LR6-60HV-xxxM, (xxx=270 to 300 in step of 5) LR6-72PH-xxxM, (xxx=340 to 385 in step of 5) LR6-60PH-xxxM, (xxx=280 to 320 in step of 5) LR6-72HPH-xxxM, (xxx=350 to 405 in step of 5) LR6-72HIH-xxxM, (xxx=350 to 405 in step of 5) LR6-60HPH-xxxM, (xxx=295 to 335 in step of 5) LR6-60HIH-xxxM, (xxx=295 to 335 in step of 5) LR6-72OPH-xxxM, (xxx=385 to 400 in step of 5) LR6-60OPH-xxxM, (xxx=335 to 350 in step of 5) LR6-72HPH-xxxMC, (xxx=375 to 390 in step of 5) LR6-60HPH-xxxMC, (xxx=305 to 325 in step of 5) LR4-72HPH-xxxM, (xxx=400 to 460 in step of 5) LR4-72HIH-xxxM, (xxx=400 to 460 in step of 5) LR4-60HPH-xxxM, (xxx=330 to 380 in step of 5) LR4-60HIH-xxxM, (xxx=330 to 380 in step of 5) LR4-72ZPH-xxxM, (xxx=420 to 435 in step of 5) LR4-60ZPH-xxxM, (xxx=350 to 365 in step of 5) LR6-60ZPH-xxxM, (xxx=330 to 355 in step of 5) xxx is standing for rated output power at STC

Parameters:

Application Class:

Maximum System Voltage:

Fire Safety Class: Construction:

Class A 1500 V DC Class C

Framed, with Junction box, cable and connector.

Tested according to:

IEC 61215:2005 IEC 61730-1:2004

IEC 61730-1:2004/AMD1:2011 IEC 61730-1:2004/AMD2:2013

IEC 61730-2:2004

IEC 61730-2:2004/AMD1:2011

IEC 62716:2013

Production Facility(ies):

099605, 099606, 099626, 090968, 001192, 002875, 096558, 097323, 102892, 103410, 103841



No. Z2 099333 0055 Rev. 03

Holder of Certificate:

LONGi Green Energy Technology Co., Ltd.

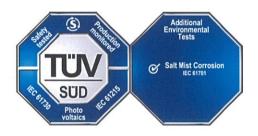
No. 388, Middle Hangtian Road

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. See also notes overleaf.

Test report no .:

704061700517-03

Valid until:

2024-12-04

Date,

2019-12-06

(David Bo)

M.

No. Z2 099333 0055 Rev. 03

Model(s):

LR6-72HV-xxxM, (xxx=320 to 350 in step of 5) LR6-60HV-xxxM, (xxx=270 to 300 in step of 5) LR6-72PH-xxxM, (xxx=340 to 385 in step of 5) LR6-60PH-xxxM, (xxx=280 to 320 in step of 5) LR6-72HPH-xxxM, (xxx=350 to 405 in step of 5) LR6-72HIH-xxxM, (xxx=350 to 405 in step of 5) LR6-60HPH-xxxM, (xxx=295 to 335 in step of 5) LR6-60HIH-xxxM, (xxx=295 to 335 in step of 5) LR6-72OPH-xxxM, (xxx=385 to 400 in step of 5) LR6-60OPH-xxxM, (xxx=335 to 350 in step of 5) LR6-72HPH-xxxMC, (xxx=375 to 390 in step of 5) LR6-60HPH-xxxMC, (xxx=305 to 325 in step of 5) LR4-72HPH-xxxM, (xxx=400 to 460 in step of 5) LR4-72HIH-xxxM, (xxx=400 to 460 in step of 5) LR4-60HPH-xxxM, (xxx=330 to 380 in step of 5) LR4-60HIH-xxxM, (xxx=330 to 380 in step of 5) LR4-72ZPH-xxxM, (xxx=420 to 435 in step of 5) LR4-60ZPH-xxxM, (xxx=350 to 365 in step of 5) LR6-60ZPH-xxxM, (xxx=330 to 355 in step of 5) xxx is standing for rated output power at STC

Parameters:

Severity of

Salt Mist Test:

Application Class: Maximum System Voltage: Fire Safety Class:

Construction:

Severity 6 and severity 1

Class A 1500 V DC

Class C

Framed, with Junction box, cable and connector.

Tested according to:

IEC 61215:2005 IEC 61730-1:2004

IEC 61730-1:2004/AMD1:2011 IEC 61730-1:2004/AMD2:2013

IEC 61730-2:2004

IEC 61730-2:2004/AMD1:2011

IEC 61701:2011

Production Facility(ies): 096558, 002875, 001192, 090968, 099626, 099605, 099606.

097323, 102892, 103410, 103841



No. Z2 099333 0027 Rev. 03

Holder of Certificate:

LONGi Green Energy Technology Co., Ltd.

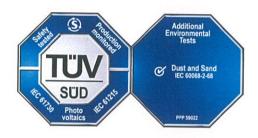
No. 388, Middle Hangtian Road

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. See also notes overleaf.

Test report no.:

704061718717-03

Valid until:

2024-12-08

Date,

2019-12-10

(David Bo)

No. Z2 099333 0027 Rev. 03

Model(s):

LR6-72HV-xxxM, (xxx=320 to 350 in step of 5) LR6-60HV-xxxM, (xxx=270 to 300 in step of 5) LR6-72PH-xxxM, (xxx=340 to 385 in step of 5) LR6-60PH-xxxM, (xxx=280 to 320 in step of 5) LR6-72HPH-xxxM, (xxx=350 to 405 in step of 5) LR6-72HIH-xxxM, (xxx=350 to 405 in step of 5) LR6-60HPH-xxxM, (xxx=295 to 335 in step of 5) LR6-60HIH-xxxM, (xxx=295 to 335 in step of 5) LR6-72OPH-xxxM, (xxx=385 to 400 in step of 5) LR6-60OPH-xxxM, (xxx=335 to 350 in step of 5) LR6-72HPH-xxxMC, (xxx=375 to 390 in step of 5) LR6-60HPH-xxxMC, (xxx=305 to 325 in step of 5) LR4-72HPH-xxxM, (xxx=400 to 460 in step of 5) LR4-72HIH-xxxM, (xxx=400 to 460 in step of 5) LR4-60HPH-xxxM, (xxx=330 to 380 in step of 5) LR4-60HIH-xxxM, (xxx=330 to 380 in step of 5) LR4-72ZPH-xxxM, (xxx=420 to 435 in step of 5) LR4-60ZPH-xxxM, (xxx=350 to 365 in step of 5) LR6-60ZPH-xxxM, (xxx=330 to 355 in step of 5) xxx is standing for rated output power at STC

Parameters:

Application Class:

Max. System Voltage: Fire Safety Class:

Construction:

Class A 1500V DC

Class C

Framed, with Junction box,

cable and connector.

Dust and Sand Test Method:

Dust/sand Type: **Dust /sand Concentration:**

Testing Air Velocity:

Test Duration:

IEC 60068-2-68, LC1

95% SiO₂ 5g/m³ 20m/s

4h/each side.

Tested according to: PPP 59022A:2013 IEC 61215:2005 IEC 61730-1:2004

IEC 61730-1:2004/AMD1:2011 IEC 61730-1:2004/AMD2:2013

IEC 61730-2:2004

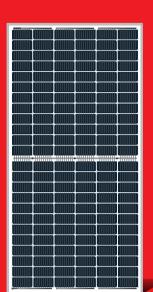
IEC 61730-2:2004/AMD1:2011

Production Facility(ies):

002875, 001192, 090968, 099626, 099605, 099606,

096558, 097323, 102892, 103410, 103841

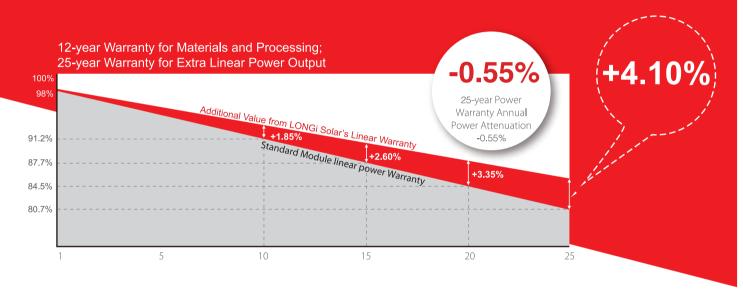
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1R4-72HPH 425~455M



High Efficiency Low LID Mono PERC with Half-cut Technology



Complete System and Product Certifications

IEC 61215, IEC 61730, UL 61730

ISO 9001:2008: ISO Quality Management System

ISO 14001: 2004: ISO Environment Management System

TS62941: Guideline for module design qualification and type approval OHSAS 18001: 2007 Occupational Health and Safety







* Specifications subject to technical changes and tests. LONGi Solar reserves the right of interpretation. Positive power tolerance (0 ~ +5W) guaranteed

High module conversion efficiency (up to 20.9%)

Slower power degradation enabled by Low LID Mono PERC technology: first year <2%, 0.55% year 2-25

Solid PID resistance ensured by solar cell process optimization and careful module BOM selection

Reduced resistive loss with lower operating current

Higher energy yield with lower operating temperature

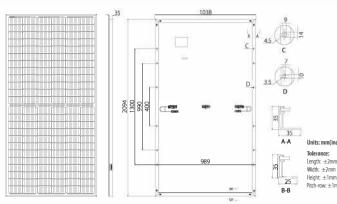
Reduced hot spot risk with optimized electrical design and lower operating current



Note: Due to continuous technical innovation, R&D and improvement, technical data above mentioned may be of modification accordingly. LONGi have the sole right to make such modification at anytime without further notice; Demanding party shall request for the latest datasheet for such as contract need, and make it a consisting and binding part of lawful documentation duly signed by both parties.

LR4-72HPH **425~455M**

Design (mm) Mechanical Parameters Operating Parameters



Cell Orientation: 144 (6x24)

Junction Box: IP68, three diodes Output

Cable: 4mm², 300mm

Glass: Single glass 3.2mm coated tempered

Glass: Single glass 3.2mm coated tempered glass Frame: Anodized aluminum alloy frame Weight: 23.5kg

Packaging: 30pcs per pallet 150pcs per 20'GP 660pcs per 40'HC

Dimension: 2094×1038×35mm

Operational Temperature: -40 °C ~ +85 °C

Power Output Tolerance: 0 ~ +5 W

Voc and lsc Tolerance: ±3%

Maximum System Voltage: DC1500V (IEC/UL)

Maximum Series Fuse Rating: 20A

Nominal Operating Cell Temperature: 45±2 °C

Safety Class: Class II

Fire Rating: UL type 1 or 2

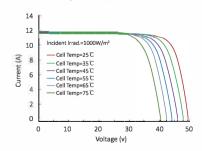
Electrical Characteristics											lest t	incertain	ty for Pma	IX: ±3%
Model Number	LR4-72H	PH-425M	LR4-72HI	PH-430M	LR4-72HF	PH-435M	LR4-72HI	PH-440M	LR4-72H	PH-445M	LR4-72HI	PH-450M	LR4-72HF	PH-455N
Testing Condition	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT	STC	NOCT
Maximum Power (Pmax/W)	425	317.4	430	321.1	435	324.9	440	328.6	445	332.3	450	336.1	455	339.8
Open Circuit Voltage (Voc/V)	48.3	45.3	48.5	45.5	48.7	45.7	48.9	45.8	49.1	46.0	49.3	46.2	49.5	46.4
Short Circuit Current (Isc/A)	11.23	9.08	11.31	9.15	11.39	9.21	11.46	9.27	11.53	9.33	11.60	9.38	11.66	9.43
Voltage at Maximum Power (Vmp/V)	40.5	37.7	40.7	37.9	40.9	38.1	41.1	38.3	41.3	38.5	41.5	38.6	41.7	38.8
Current at Maximum Power (Imp/A)	10.50	8.42	10.57	8.47	10.64	8.53	10.71	8.59	10.78	8.64	10.85	8.70	10.92	8.75
Module Efficiency(%)	19	.6	19	.8	20	.0	20).2	20	0.5	20).7	20	.9

NOCT (Nominal Operating Cell Temperature): Irradiance 800W/m², Ambient Temperature 20 °C, Spectra at AM1.5, Wind at 1m/S

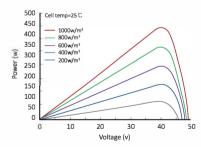
Temperature Ratings (STC)		Mechanical Loading							
Temperature Coefficient of Isc	+0.048%/°C	Front Side Maximum Static Loading	5400Pa						
Temperature Coefficient of Voc	-0.270%/℃	Rear Side Maximum Static Loading	2400Pa						
Temperature Coefficient of Pmax	-0.350%/℃	Hailstone Test	25mm Hailstone at the speed of 23m/s						

I-V Curve

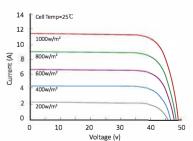
Current-Voltage Curve (LR4-72HPH-440M)



Power-Voltage Curve (LR4-72HPH-440M)



Current-Voltage Curve (LR4-72HPH-440M)





Room 801, Tower 3, Lujiazui Financial Plaza, No.826 Century Avenue, Pudong Shanghai, 200120, China Tel: +86-21-80162606 E-mail: module@longi-silicon.com Facebook: www.facebook.com/LONGi Solar

Note: Due to continuous technical innovation, R&D and improvement, technical data above mentioned may be of modification accordingly. LONGi have the sole right to make such modification at anytime without further notice; Demanding party shall request for the latest datasheet for such as contract need, and make it a consisting and binding part of lawful documentation duly signed by both parties.