

# CERTIFICATE

**TÜV NORD CERT GmbH**  
herewith declares that

**Jolywood (Taizhou) Solar Technology Co., Ltd.**  
Kaiyang Rd. Jiangyan Economic Development Zone  
Taizhou City, Jiangsu Province, 225500  
P.R. 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 from: 2023-04-03

Valid until: 2028-12-26

Certification program:	P12-VA-01 Rev. 17 09.20
Certification fundamental(s):	IEC / EN 61215-1:2016; IEC / EN 61215-1-1:2016; IEC 61215-2:2016 / EN 61215-2:2017 + AC:2017 + AC:2018; IEC 61730-1:2016 / EN IEC 61730-1:2018 + AC:2018; IEC 61730-2:2016 / EN IEC 61730-2:2018 + AC:2018.
Registered No.:	44 780 20 406749 - 033R4A3M6
Manufacturer:	see Annex 1
Test Report No.:	492011210.010
File No.:	PVP11099/22P-02

**TÜV NORD CERT GmbH**  
**Certification Body**  
**Consumer Products**



Essen, 2023-04-03

Please also pay attention to the information stated overleaf.

**Manufacturer:**

Manufacturer 1: **Jolywood (Taizhou) Solar Technology Co., Ltd.**  
Kaiyang Rd. Jiangyan Economic Development Zone  
Taizhou City, Jiangsu Province, 225500, P.R. China

Factory inspection report no.: **862010439.004**

Manufacturer 2: **FENGYANG JOY ENERGY TECHNOLOGY CO., LTD**  
88 East Yongqing Road, Economic Development Zone,  
Fengyang County, 233100 Chuzhou City, Anhui Province,  
P.R. China

Factory inspection report no.: **862010737.001**

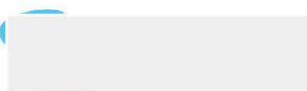
**Remark:**

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

## Description of product(s):

Module types:	<b>Double Glass PV Modules with 157.35mm to 158.75mm Mono n-type Bifacial Solar Cells:</b> 72 cells: JW-D72N-xxx (xxx=365-410, in steps of 5) 60 cells: JW-D60N-xxx (xxx=305-340, in steps of 5) Remark: xxx indicates output power from the front side only
Maximum system voltage:	1500V
Fuse rating:	20A
Electrical protection class:	Class II
Pollution degree:	1
Material group:	I
Design load (positive / negative):	1600Pa / 1600Pa or 3600Pa / 1600Pa, refer CDF for details
Safety factors:	1.5
Fire safety class:	Class C or Class A according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018), refer CDF for details

Module types:	<b>Double Glass PV Modules with 158.75mm Half-cut Mono n-type Bifacial Solar Cells:</b> 156 cells: JW-HD156N-xxx (xxx=425-455, in steps of 5) 144 cells: JW-HD144N-xxx (xxx=390-420, in steps of 5) 120 cells: JW-HD120N-xxx (xxx=325-350, in steps of 5) Remark: xxx indicates output power from the front side only
Maximum system voltage:	1500V
Fuse rating:	20A
Electrical protection class:	Class II
Pollution degree:	1
Material group:	I
Design load (positive / negative):	1600Pa / 1600Pa or 3600Pa / 1600Pa, refer CDF for details
Safety factors:	1.5
Fire safety class:	Class C or Class A according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018), refer CDF for details



**TÜV NORD CERT GmbH**  
Certification Body  
Consumer Products

Module types:	<b>Double Glass PV Modules with 158.75mm Half-cut Mono p-type Bifacial Solar Cells:</b> 156 cells: JW-HD156P-xxx (xxx=425-450, in steps of 5) 144 cells: JW-HD144P-xxx (xxx=390-415, in steps of 5) 120 cells: JW-HD120P-xxx (xxx=325-345, in steps of 5) Remark: xxx indicates output power from the front side only
Maximum system voltage:	1500V
Fuse rating:	20A
Electrical protection class:	Class II
Pollution degree:	1
Material group:	I
Design load (positive / negative):	1600Pa / 1600Pa or 3600Pa / 1600Pa, refer CDF for details
Safety factors:	1.5
Fire safety class:	Class C or Class A according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018), refer CDF for details
Module types:	<b>Double Glass PV Modules with 166mm Half-cut Mono n-type Bifacial Solar Cells:</b> 144 cells: JW-HD144N-xxx (xxx=430-470, in steps of 5) 120 cells: JW-HD120N-xxx (xxx=360-390, in steps of 5) Remark: xxx indicates output power from the front side only
Maximum system voltage:	1500V
Fuse rating:	30A
Electrical protection class:	Class II
Pollution degree:	1
Material group:	I
Design load (positive / negative):	1600Pa / 1600Pa or 3600Pa / 1600Pa, refer CDF for details
Safety factors:	1.5
Fire safety class:	Class C or Class A according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018), refer CDF for details

Module types:	<b>Double Glass PV Modules with 166mm Half-cut Mono p-type Bifacial Solar Cells:</b> 144 cells: JW-HD144P-xxx (xxx=430-450, in steps of 5) 120 cells: JW-HD120P-xxx (xxx=360-375, in steps of 5) Remark: xxx indicates output power from the front side only
Maximum system voltage:	1500V
Fuse rating:	30A
Electrical protection class:	Class II
Pollution degree:	1
Material group:	I
Design load (positive / negative):	1600Pa / 1600Pa or 3600Pa / 1600Pa, refer CDF for details
Safety factors:	1.5
Fire safety class:	Class C or Class A according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018), refer CDF for details

Module types:	<b>Double Glass PV Modules with 182mm Half-cut Mono n-type Bifacial Solar Cells:</b> 156 cells: JW-HD156N-xxx (xxx=580-630, in steps of 5) 144 cells: JW-HD144N-xxx (xxx=525-585, in steps of 5) 120 cells: JW-HD120N-xxx (xxx=435-485, in steps of 5) 132 cells: JW-HD132N-xxx (xxx=485-535, in steps of 5) 108 cells: JW-HD108N-xxx (xxx=395-435, in steps of 5) Remark: xxx indicates output power from the front side only
Maximum system voltage:	1500V
Fuse rating:	30A
Electrical protection class:	Class II
Pollution degree:	1
Material group:	I
Design load (positive / negative):	1600Pa / 1600Pa, 3600Pa / 1600Pa or 2400Pa/1600Pa, refer CDF for details
Safety factors:	1.5
Fire safety class:	Class C or Class A according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018), refer CDF for details

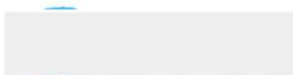


Module types:	<b>Double Glass PV Modules with 182mm Half-cut Mono p-type Bifacial Solar Cells:</b> 144 cells: JW-HD144P-xxx (xxx=525-555, in steps of 5) 120 cells: JW-HD120P-xxx (xxx=435-460, in steps of 5) 132 cells: JW-HD132P-xxx (xxx=485-505, in steps of 5) 108 cells: JW-HD108P-xxx (xxx=395-415, in steps of 5) Remark: xxx indicates output power from the front side only
Maximum system voltage:	1500V
Fuse rating:	30A
Electrical protection class:	Class II
Pollution degree:	1
Material group:	I
Design load (positive / negative):	1600Pa / 1600Pa, 3600Pa / 1600Pa or 2400Pa/1600Pa, refer CDF for details
Safety factors:	1.5
Fire safety class:	Class C or Class A according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018), refer CDF for details
Module types:	<b>Double Glass PV Modules with 210mm Half-cut Mono n-type Bifacial Solar Cells:</b> 120 cells: JW-HD120N-xxx (xxx=580-620, in steps of 5) 132 cells: JW-HD132N-xxx (xxx=655-680, in steps of 5) Remark: xxx indicates output power from the front side only
Maximum system voltage:	1500V
Fuse rating:	30A
Electrical protection class:	Class II
Pollution degree:	1
Material group:	I
Design load (positive / negative):	3600Pa / 1600Pa or 3600Pa/2400Pa, refer CDF for details
Safety factors:	1.5
Fire safety class:	Class C or Class A according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018), refer CDF for details

Module types:	<b>Double Glass PV Modules with 210mm Half-cut Mono p-type Bifacial Solar Cells:</b> 120 cells: JW-HD120P-xxx (xxx=580-610, in steps of 5) Remark: xxx indicates output power from the front side only
Maximum system voltage:	1500V
Fuse rating:	30A
Electrical protection class:	Class II
Pollution degree:	1
Material group:	I
Design load (positive / negative):	3600Pa / 1600Pa or 3600Pa/2400Pa, refer CDF for details
Safety factors:	1.5
Fire safety class:	Class C or Class A according to ANSI/UL 1703-2018 (as per ANSI/UL 790-2018), refer CDF for details

Remark:

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



**TÜV NORD CERT GmbH**  
Certification Body  
Consumer Products