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## Test Report No. TRPVP06126/24P/01

Commission Testing  
according to P12.4-AA-14

Applicant: **Polyshine solar Co., Ltd.**  
No.288, Maodian Road, Shanghai, P.R. China, 201716

File No.: PVP06126/24P-01

Designed:  
(Project Engineer)

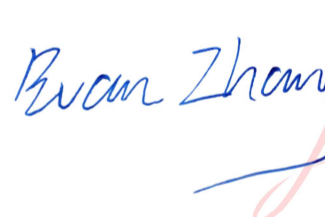
by:



数字签名者: Ivan zhang  
日期: 2024.08.05  
17:42:03 +08'00'

Reviewed:  
(Technical Certifier)

by:



Digitally signed by  
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Date: 2024.08.05  
17:44:30 +08'00'

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Applicant..... :	<b>Polyshine solar Co., Ltd.</b> No.288, Maodian Road, Shanghai, P.R. China, 201716
Manufacturer ..... :	<b>Polyshine solar Co., Ltd.</b> No.288, Maodian Road, Shanghai, P.R. China, 201716
Factory..... :	<b>Polyshine solar Co., Ltd. Anhui Branch</b> No.9, Tagang Industrial Park, Tongzha Town, Hanshan County, Ma'anshan City
Order No. .... :	QT-PVP06126/24P
Date of Application ..... :	2024-06-26
Product ..... :	Crystalline Silicon Terrestrial Photovoltaic (PV) Modules
Module type(s)..... :	<b>PV Modules with 182mm half-cut Mono-crystalline Silicon Solar Cells:</b> 144 cells: JY1-72H505PC
General Information • Maximum System Voltage.... :	DC 1500V
• Application Class ..... :	N/A
• Electrical Protection Class.... :	N/A
Type of examination ..... :	Commission testing only
Testing Period ..... :	2024-07-05/2024-07-17
Testing Laboratory..... :	<b>NOA Testing &amp; Inspection Technology Ltd.</b> 1&3/F., Building 3, No.169, Lianchuan Road, Minhang District, Shanghai, China <b>Engineering Research Center of Style of Study in Central South University (For Wind tunnel test only)</b> No.22, South Shaoshan Road, Tianxin District, Changsha City, Hunan Province, P.R. China

Test results listed in this test report refer exclusively to the mentioned test sample.

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The submitted test samples as described in the reports hereunder are based on the requirements: P12.4-AA-14 Rev.00, "Wind tunnel test for photovoltaic (PV) module"

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**Summary of testing**

According to the enquiry of the applicant, a commission testing was performed according to P12.4-AA-14 Rev.00, "Wind tunnel test for photovoltaic (PV) module" and maximum wind speed: 45m/s.

Remark: Our verdict was performed according to the requirement of client.

Module type JY1-72H505PC (module dimension: 2446mm x 1185mm x 2.5mm) was delivered to testing lab as test samples and conducted with all the related tests.

Relevant module types as listed below:

PV Modules with 182mm half-cut Mono-crystalline Silicon Solar Cells:

144 cells: JY1-72HxxxPC (xxx = 505-535, in increment of 5)

132 cells: JY1-66HxxxPC (xxx = 465-490, in increment of 5)

120 cells: JY1-60HxxxPC (xxx = 420-445, in increment of 5)

110 cells: JY1-55HxxxPC (xxx = 390-410, in increment of 5)

108 cells: JY1-54HxxxPC (xxx = 380-400, in increment of 5)

72 cells: JY1-36HxxxPC (xxx = 255-265, in increment of 5)

56 cells: JY1-28HxxxPC (xxx = 195-205, in increment of 5)

54 cells: JY1-27HxxxPC (xxx = 190-200, in increment of 5)

42 cells: JY1-21HxxxPC (xxx = 145-155, in increment of 5)

30 cells: JY1-15HxxxPC (xxx = 100-110, in increment of 5)

28 cells: JY1-14HxxxPC (xxx = 95-105, in increment of 5)

All tests were successfully completed.

**General remarks**

<b>Test item particulars:</b>	
Accessories and detachable parts included in the evaluation .....	Adhesive
Options included .....	N/A
<b>Abbreviations used in the report:</b>	
Vmpp - Maximum power voltage	Imp - Maximum power current
Voc - Open circuit voltage	Isc - Short circuit current
Pmax - Maximum power	FF - Fill factor
STC - Standard Test Conditions	-
<b>Possible test case verdicts:</b>	
Test case does not apply to the test object .....	Not Applicable (N/A)
Test object does meet the requirement.....	Pass (P)
Test object does not meet the requirement.....	Fail (F)
<b>General Remarks:</b>	
<p>The test verdicts presented in this report relate only to the object tested.                  This report shall not be reproduced except in full, without the written approval of the issuing testing laboratory.</p> <p>Sample #-front: Exposure under 1000W/m2 on the front side with rear side covered by black cover.                  Sample #-rear: Exposure under 1000W/m2 on the rear side with front side covered by black cover.                  Sample #-BNPI: Exposure under BNPI on the front side with rear side covered by black cover.                  Bifaciality coefficient <math>\phi = \min(I_{sc\text{rear}} / I_{sc\text{front}}, P_{\text{maxrear}} / P_{\text{maxfront}}) \times 100\%</math>.                  Equivalent irradiance: <math>GBNPI = 1000W/m^2 + \phi \times 135W/m^2</math>.</p> <p>“(see Annex #)” refers to additional information appended to the report.                  “(see Table #)” refers to a table appended to the report.</p> <p>Power degradation data expressed in negative value indicates a reduction of maximum power output.                  Power degradation data expressed in positive value indicates an increment of maximum power output.</p> <p>Throughout this report a point is used as the decimal separator</p>	

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**Sampling**

**Module type: JY1-72H505PC**

<input type="checkbox"/> Random sampling from production
<input checked="" type="checkbox"/> Prototype submitted by client
Supplementary information: N/A

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**Module group assignment****Module type: JY1-72H505PC**

Sample #	Sample SN	Dimension (l x w x h) [mm]	Remark
1	45X27240554	2446 x 1185 x 2.5	Wind tunnel test

Clause	Requirement + Test	Result - Remark	Verdict
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**Test result overview**

<b>5.1</b>	<b>Marking</b>	-	<b>P</b>
-	Name, monogram or symbol of manufacturer :	Printed on nameplate	P
-	Type or model number..... :	Printed on nameplate	P
-	Serial number..... :	Attached separately beside the string connectors	P
-	Polarity of terminals or leads..... :	Marked with color	P
-	Maximum system voltage..... :	1500VDC	P
-	The date and place of manufacture..... :	Traceable from serial number	P

-	<b>Initial examination</b>	<b>All modules</b>	<b>P</b>
MQT01	Visual inspection..... :	See table 4.1	P
MQT02	Maximum power determination..... :	See table 10.4	P

**Module type: JY1-72H505PC**

<b>Sample 1#</b>			-
5.3	Wind tunnel test..... :	See table 5.3	P

-	<b>final examination</b>	<b>All modules</b>	<b>P</b>
MQT01	Visual inspection..... :	See table 4.1	P
MQT02	Maximum power determination..... :	See table 10.4	P

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Clause	Requirement + Test	Result - Remark	Verdict

**Test results**

**Module type: JY1-72H505PC**

<b>4.1 Visual inspection (initial) - MQT01</b>			-
Test date [MM/DD/YYYY]..... :		2024-07-05	-
Sample #	Nature and position of initial findings - comments or attach photos		P
1	No visual defects		P
Supplementary information: N/A			

P12.4-AA-14			
Clause	Requirement + Test	Result - Remark	Verdict

<b>10.4 Maximum power determination (initial) - MQT02</b>							-
Test date [MM/DD/YYYY].....:				2024-07-05		-	
Module temperature [°C] .....				Corrected to 25		-	
Irradiance [W/m <sup>2</sup> ].....:				Corrected to 1000 or G <sub>BNPI</sub>		-	
Sample #	Voc [V]	Vmpp [V]	Isc [A]	Impp [A]	Pmax [W]	FF [%]	-
1	49.86	41.57	12.86	12.16	505.6	78.87	-
Supplementary information: N/A							

P12.4-AA-14			
Clause	Requirement + Test	Result - Remark	Verdict

<b>5.3 Wind tunnel test</b>			-
Test date [MM/DD/YYYY] / start - end.... :	2024-07-13		-
Sample #..... :	1		-
The direction of the wind .....	Windward		-
Installation angle [°] .....	5		-
Wind velocity [m/s]..... :	45		-
Duration [minute] .....	10		-
Supplementary information: Wind tunnel test was performed at Engineering Research Center of Style of Study in Central South University.			

P12.4-AA-14			
Clause	Requirement + Test	Result - Remark	Verdict

<b>4.1 Visual inspection (after wind tunnel test) - MQT01</b>			-
Test date [MM/DD/YYYY].....:		2024-07-17	-
Sample #	Nature and position of initial findings - comments or attach photos		-
1	No visual defects		P

Supplementary information: N/A

<b>10.4 Maximum power determination (after wind tunnel test) - MQT02</b>			-				
Test date [MM/DD/YYYY].....:		2024-07-17	-				
Ambient temperature [°C].....:		Corrected to 25.0	-				
Irradiance [W/m <sup>2</sup> ].....:		Corrected to 1000	-				
Sample #	Voc [V]	Vmp [V]	Isc [A]	Imp [A]	Pmax [W]	FF [%]	-
1	49.76	40.50	12.87	14.90	501.3	78.26	-
Pmax degradation after test [%]:		Sample 1 #: -0.85					P

Supplementary information: N/A

**Annex 1: List of measurement equipment**

<b>Clause</b>	<b>Measurement / testing</b>	<b>Testing / measuring equipment / material used, (Equipment ID)</b>	<b>Range used</b>	<b>Last Calibration date</b>	<b>Calibration due date</b>
4.1	Visual inspection	Luminometer (NOANE110-1)	0~1500 Lux	2023-11-03	2024-11-01
4.2	Maximum power determination	Pulsed Solar Simulator (NOANE082)	200~1200 W/ m <sup>2</sup>	2023-10-17	2024-10-16

**Annex 2: Statement of the estimated uncertainty of the test results**

The total measuring uncertainty of Pmax is  $\leq 2.56\%$ ,  $k=2$

The total measuring uncertainty of Isc is  $\leq 2.38\%$ ,  $k=2$

The total measuring uncertainty of Voc is  $\leq 1.62\%$ ,  $k=2$

**Annex 3: Photos**

**Module type: JY1-72H505PC**



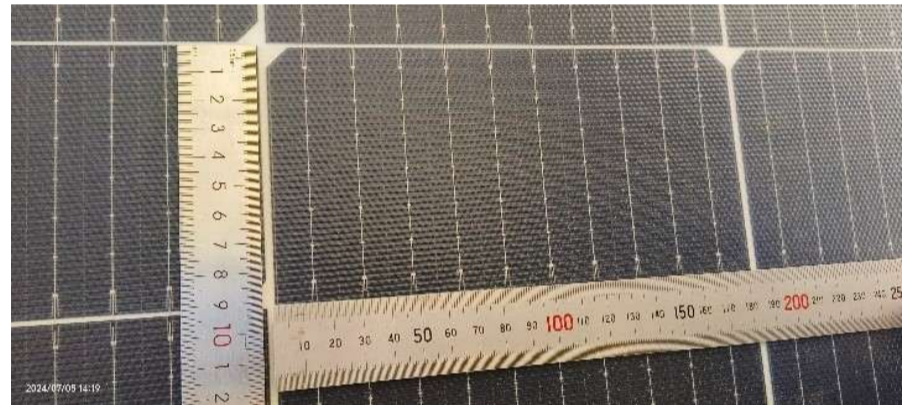
*Front overview*

N/A

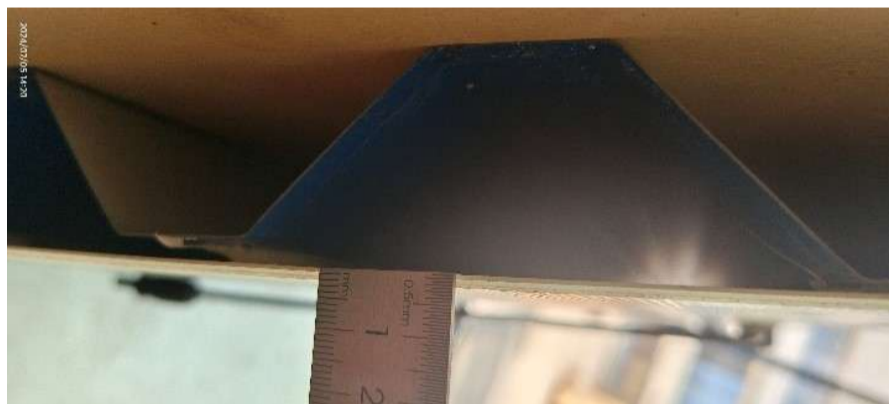
*Back overview*



*Label*



*Solar cell*



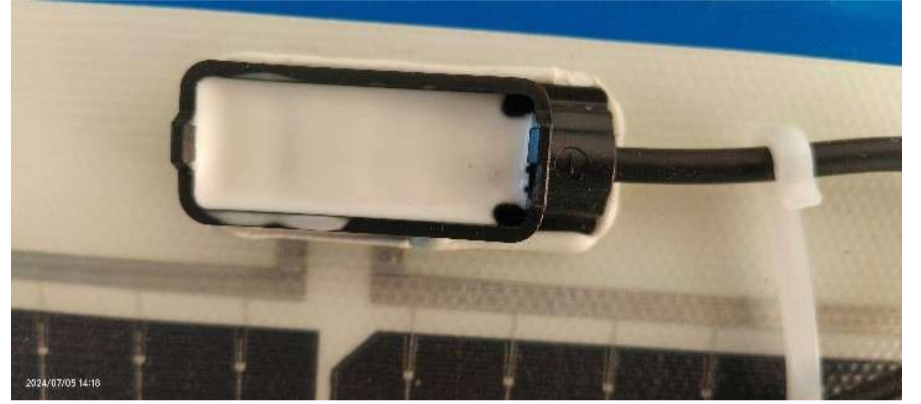
*Edge*

N/A

*Grounding Mark*

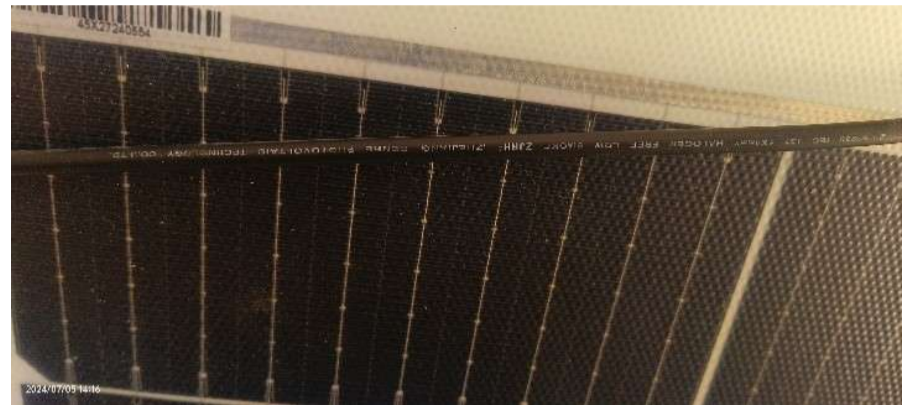


Junction box (TL-BOX216x)



Junction box (Opened)

N/A



Cable (62930 IEC 131 1x4.0mm<sup>2</sup>)

Bypass diode (Junction box is potted)



Mark (Do not disconnect under load)



Connectors (Not specified)



Test at Installation angle 5°



Back overview of wind tunnel test

----- End of test report -----