

Test Report

Client Name : EcoFlow Inc.

Factory Building A202, Founder Technology Industrial

Address Park, North side of Songbai Highway, Longteng

Community, Shiyan Sub-district, Baoan District,

Shenzhen City, Guangdong, China

Product Name : 220W Bifacial Solar Panel

Date : 2022.4.8





Marking

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- 6. The test report is valid for the tested samples only.
- 7. As for test verdict, "—"means "no need for judgment" "N/A" means "not applicable".
- 8. The data results in this report are only used for scientific research, teaching or internal quality control purposes.



TEST REPORT

Client Name EcoFlow Inc.

Factory Building A202, Founder Technology Industrial Park, North side of

Songbai Highway, Longteng Community, Shiyan Sub-district, Baoan Address

District, Shenzhen City, Guangdong, China

Report on the submitted sample(s) said to be:

Product Name 220W Bifacial Solar Panel

2pcs

Model

ECOFLOW Trademark

Description

Sample(s)

received quantity

Sample(s)

2pcs **Testing quantity**

Manufacturer EcoFlow Inc.

Factory

Sample(s)

2021.10.8 received Date

Testing period 2021.10.9 - 2021.10.12

2022.4.8 Report Date

Test Conclusion:

Test item IP68

Test standard IEC 60529:1989+A1:1999+A2:2013

Evaluation Pass

Prepared by:

Checked by:

Approved by:

name: Carlos Ye Title: Test Engineer

Carbs. Te.

name: Jimmy Zhou

Title: Lab Deputy Manager

name: Jeff Zhu

Title: Authorized Signatory

Shenzhen Anbotek Compliance Laboratory Limited

Code:AB-AR-02-c





1. Test standards

IEC 60529:1989+A1:1999+A2:2013 Degrees of protection provided by enclosures(IP Code)

2. Conformity verification-Summary of inspection

ek noo	tek Aupot Au Potek Aupotek Aupote	P. (4)	Test resu	lt ^{Ans}
Clause	Summary of inspection	N/A.	Pass	Fail
anboiek	TESTS FOR PROTECTION AGAINST ACCESS TO HAZARDOUS	upoto	Vur	ek .
12	PARTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL	Ambrek		potek P
r Vuposes	TESTS FOR PROTECTION AGAINST SOLID FOREIGN	Pupo	· ok	polek
13 Anbo	OBJECTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL.	sek by	V	Anbotek
Anbotek	TESTS FOR PROTECTION AGAINST WATER INDICATED BY THE SECOND CHARACTERISTIC NUMERAL.	nbotek Anbotek	Ø	ek Augo

Test case verdicts:

N/A.: Test case does not apply to the test object

P: Test item does meet the requirement

F: Test item does not meet the requirement

2.1 Environmental Conditions :

Environmental Temperature: 15°C~35°C

Relative Humidity: 25%~75% Pressure: 86kpa~106kpa

2.2 Test equipment:

Equipment Name	Equipment No.	Model	Validity Period
Water proof test system	SE-1154	GR-IPX8A	2022.7.11
Dust proof chamber	SE-1152	GR-IPPCA01	2022.7.11
IP tester D	SE-1398	IP4X	2022.8.12

Hotline 400-003-0500 www.anbotek.com



Report No.:18290KC10124402 3. Test information and results

Anbotek	Anto abotek	IEC 60529:1989+A1:1999+A	2:2013	Anbors	Anbotek	PU
Clause	. Anboick	Requirement-Test	Anbore	Aus	Verdict	

olek V.	Combination of test conditions for the first characteristic numeral
11.4	Designation with a first characteristic numeral implies that all test conditions are met for this
anbotek	numeral.

Anbo	First characteristic	Anbotek Anbotek Test f	or protection against	Anbotek
lek bi	number	Access to hazardous parts	Solid foreign objects	Verdict
Notek	Anbotek O Anb	No test required	No test required	N/A
Aupotek	Anbore 1	701 VIII	not fully penetrate and adequate shall be kept	N/A
yek Anbo	otek 2 Anbotek	The jointed test finger may penetrate up to its 80 mm length, but adequate clearance shall be kept	The sphere of 12.5mm φ shall not fully penetrate	N/A
Aupotek	Wupo, 3	100	nall not penetrate and adequate shall be kept	N/A
Table 5	Anbotek Anbotek	700, br.	nall not penetrate and adequate shall be kept	N/A
botek Anbotek	Anbotek Anbotek Anbotek Anbotek	The test wire of 1.0 mm φ shall not penetrate and adequate clearance shall be kept	Ingress of dust is not totally prevented, but dust shall not penetrate in a quantity to interfere with satisfactory operation of the apparatus or to impair safety	N/A
ek Anboten	otek 6 Anbotek	The test wire of 1.0 mm φ shall not penetrate and adequate clearance shall be kept	No ingress of dust	Anbotek Anbetek
poter.	In the case o	f the first characteristic numerals 1	and 2, "not fully penetrate" means the	nat the full

In the case of the first characteristic numerals 1 and 2, "not fully penetrate" means that the full diameter of the sphere shall not pass through an opening of the enclosure.



hpotel.	Anbotek	Aupotek	IEC 60529:1989+A1:1999+A	2:2013	Anborek	Anbotek	Aupo
Clause	Anbotek	Anbore	Requirement-Test	Vupos	Anbotek	Verd	dict

13	TOLE. TUR	ON AGAINST SOLID FOREIGN OF FIRST CHARACTERISTIC NUMI	tek appoint	O BY
otek	Anbotes Anbo	Test means	Anbotek Anbors	sk aup
13.1	Test means	and the main test conditions are g	iven in Tab.7.	ootek
Aupoten	Tab.VII-7 Test means	s for the tests for protection agains	t solid Foreign objects	Anboiek
Aupo	First characteristic numeral	Test means	Test force	Verdict
· ok	botek AniOtek Anbote	No test required	No test required	N/A
inbotek.	Anbotek Inbotek Anbo	Rigid sphere without handle or guard 50mm diameter	50 N ± 10 %	N/A
Anbotek	ek Anbotek 2 Anbotek	Rigid sphere without handle or guard 12.5mm diameter	30 N ± 10 %	N/A
Table 7	potek Anbotek Anbotek	Rigid steel rod 2.5mm diameter with edges free from burrs	3 N ± 10 %	N/A
tek Siek	Anbotek Anbotek Anbot	Rigid steel rod 1mm diameter with edges free from burrs	1 N ± 10 %	N/A
Anbotek	Anbotek 5 Anbotek	Dust chamber Fig.2,with or without underpressure	N/A	N/A
Anbot	potek Anboték	Dust chamber Fig.2,with underpressure	N/A	Aup Piek
te _k	Test condi	tions for first characteristic numera	als 1, 2, 3, 4	Anbo.
13.2	The object probe is pushed aga	ainst any openings of the enclosure 7.	e with the force specif	ied in table
Anbore	Acceptance conditio	ns for first characteristic numerals	1, 2, 3, 4	Verdict
13.3	100	the full diameter of the probe spectages through any opening.	cified in table 7 does	N/A
,ek	Dust test for	first characteristic numerals 5 and	6nbotek Anbote	Verdict
13.4	figure 2 whereby the power circ to maintain the talcum powde powder used shall be able to p diameter of which is 50 and the amount of talcum powder to	chamber incorporating the basic population pump may be replace by corning in a closed test chooses through a square-meshed sience nominal width of a gap between be used is 2Kg per cubic metre of that the been used for more than 20 the contract of the corning incorporation.	ther means suitable amber. The talcum ve the nominal wire wires 75µm . The the test chamber	nbotek Anbotek

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upotek	anbotek	Aupotek	IEC 60529:1989+A1:1999+A	2:2013	Anbotek	Anborek	Anbo
Clause	Anborek	Anboro	Requirement-Test	Aupolek	Anbotek	Ver	dict

b.	Dust test for first characteristic numerals 5 and 6	Verdic
ok Bi	Enclosures are of necessity in one of two categories:	Anb
	Category1: Enclosures where the normal working cycle of the equipment causes	
potek	reductions in air pressure within the enclosure below that of the surrounding air, for	otek D
borek	example, due to thermal cycling effects.	100. L
An-	Category 2:Enclosures where no pressure difference relative to surrounding air is	
Anbo	present.	Anbote!
PU	Category 1 enclosures:	
3K	The enclosure under test is supported inside the test chamber and the pressure	
13.4	inside the enclosure is maintained below the surrounding atmospheric pressure by a	
Porc	vacuum pump.The suction connection shall be made to a hole specially provided for	ootek D
Aupolek	this test.	-oiek
loda.	A volume of air 80 times the volume of the sample enclosure tested without	
b.	exceeding the extraction rate of 60 volumes per hour. In no event shall the	
Pu	depression exceed 2 kPa(20 mbar) on the manometer shown in figure 2.	anb
K	Category 2 enclosures:	N.
otek	The enclosure under test is supported in its normal operating position inside the test	N/A
.ek	chamber, but is not connected to a vacuum pump. Any drain-hole normally open shall	Of CALINA
Vupo,	be left open for the duration of the test.The test shall be continued for a period of 8h.	mbotek
13.5	Special conditions for first characteristic numeral 5	Anbotek
Pu	Test conditions for first characteristic numeral 5	Verdic
3.5.1	The enclosure shall be deemed category 1 unless the relevant product standard for	N/A
otek	the equipment specifies that the enclosure is category 2.	IN/A
Anbotek	Acceptance conditions for first characteristic numeral 5	Verdic
rodna -	The protection is satisfactory if, on inspection, talcum powder has not accumulated in	
3.5.2	a quantity or location such that, as with any other kind of dust, it could interfere with	N/A
. Vu.	the correct operation of the equipment or impair safety. Except for special cases to	Aupo
	be clearly specified in the relevant product standard, no dust shall deposit where	¢
13.6	Special conditions for first characteristic numeral is 6	otek
nbotek	Test conditions for first characteristic numeral is 6	Verdic
3.6.1	The enclosure shall be deemed category 1, whether reductions in pressure below the	Tok.
	atmospheric pressure are present or not	AnbP
. b.,	Acceptance conditions for first characteristic Numeral 6	Verdic
3.6.2	The protection is satisfactory if no deposit of dust is observable inside the enclosure at the end of the test.	An P

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Albore Otek	Anbotek	Anbotek	IEC 60529:1989+A1:1999+A	2:2013	Vupo,	Anboiek	Anbo
Clause	Anbotek	Anbore	Requirement-Test	Aupor	Anbotek	Vei	rdict

TEST	S FOR PROTECTION CH/	I AGAINST WAT ARACTERISTIC		D BY THE SECO	ND Anbo
Anbotek Ant	o. Ar.	Test mear	is atex	Anbotek Anbote	. ak
Aupolek	The test means and th	ne main test con	ditions are give	en in the table 8	potek.
Test means	and main test condit	ions for the tests	for Protection	against water	abotek
Second Characteristic numeral	Test means	Water flow rate	Duration of test	Test conditions	Verd
Anbore O. And	No test required	N/A	N/A	N/A	N//
Anbotek Anbotek	Drip box Fig.3 Enclosure on turntable	1 mm/min	10 min	14.2.1	nootek N//
Anborek 2 Anb	Drip box Fig.3 Enclosure in 4 fixed positions of 15°tilt	3 mm/min	2.5 min for each position of tilt	14.2.2	N/A
Anbotek Anbotek Anbotek	Oscillating tube Fig.a Spray ±60°from vertical, distance max.200mm	0.07L/min ±5% per hole, multiplied by	10min	14.2.3a)	Anbotek Anbotek
Aupotek Aup	Spray nozzle Fig.5 Spray ±60°from vertical	Number of holes 10L/min ±5%	1 min/m² at least 5 min	14.2.3b)	N//
Anborek	As for numeral 3 Spray ±180° from vertical	As for numeral 3	As for numeral 3	14.2.4	N/A
Anbotek Anbotek	Water jet hose Nozzle Fig.6 Nozzle 6.3mm diameter,distance 2.5m to 3m	12.5L/min ±5%	1 min/m² at least 3 min	14.2.5	N//
Potek Pupotek	Water jet hose Nozzle Fig.6 Nozzle 12.5mm diameter,distance 2.5m to 3m	100L/min ±5%	1 min/m² at least 3 min	14.2.6	Anbotek N/A

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Anborek	Vupolek	Anbotek	IEC 60529:1989+A1:1999+A	2:2013	Anadotek	Anbotek	Anbo
Clause	Anborek	Anboro	Requirement-Test	Anbo	Anbotek	Ver	dict

Anbe	Second	Aupoien Ar	Water flow	Duration of	Test	Anborek
lok b	Characteristic numeral	Test means	rate	test	conditions	Verdict
potek	Vupotek b	Immersion tank	Anbotek Anbotek	Anbores Ar	potek Aupo	lek Wup
Anboiek	Anbo	Water-level on	And	potek		19:
	An Zotek	Enclosure:0.15m	N/A	30min	14.2.7	N/A
	No.	above top 1m	otek Anbotel	Anboiek	W. Jok	anbotek
Anbo		above bottom	DOLO WILL	tek abotek	Anbo.	k.
10	Jen Man	Immersion tank	abotek Anbe	by	ek vupoter	Anbe
	8 Anbo	Water-level:by	N/A	agreement	14.2.8	Pabote
	Villa	agreement	Aupo.	rek no	poten And	
10 k	Anborek	Fan jet nozzle	Anborek	Anbo	Anbotek Anbot	S. Vul
Anbotek	Anbotek	Figure 7	k Aupotek		And	potek
poten	Aupo.	Test of small	Aup		Anbotek An	.ek
Table 8	lek Aupotek	enclosure on	otek Anbotek	- V	bolek	Aupo,
Anbo				ous per	14.2.9(a)	N/A
	botek Anbotek	Figure12	Anbotek Anbo	position	Die VUD	Anbote
40.	Anborek Anbo	Turntable speed	Anbotek A	100, VIII	otek Anbotek	Anbo
	Anti	(5±1)r/min	Vu.	Anbotek An		dna Ne
	Anbotek	Spray at 0°,	(15±1)L/min	VI.	Anbotek Anbot	-V-
	Anbotek	30°, 60°, 90°	k Anbotek	Anbo	La Ya	ote.
	101	Test of large	You.	Aupotek	Anbore An	Anbotek
Anbo	ek Vupo.	enclosures as per		V O'O'K	Anbotek	And
	botek Anbotek	intended use	Anbotek Anbot	Wung.	k boick	Anboiek
		6	And	Sewilliniting 700	14.2.9(b)	N/A
	Anbotek Anbo	practical	Anbotek Ar	at least 3 min	otek Anbo.	
	hotek M	directions	Anbotek	Anbor An	Anbotek Anbot	k Anbo
	Ant	Distance	Vu	Anbotek	Yupo. W.	otek .
	Pupole.	(175±25)mm	- bupo,	, ot	Anbotek Ani	- N
Pupole	ek "potek	Test for secon	d characteristic r	numeral 8		Verdict
14.2.8	N VICK	Aupoles Aug	Depth:1m	ek Anboies	Aug	Anb Piek
	otek Anbote	Tes	t time:24 hours	v .ote		Vu. b

4.Test result:

			- 0.0	
Sample No.	Test Item	Test requirements	Test result	Evaluation
18290KC101 244-1-2-1	IP6X	There is no dust enter the sample inside and the test wire of 1.0 mm	There is no dust enter the sample inside and the test wire of 1.0 mm ϕ doesn't penetrate the sample inside.	Pass
18290KC101 244-1-2-2	IPX8	There is no water enter the sample inside or the water inside does not affect the electrical properties of the sample.	There is no water enter the sample inside.	Pass

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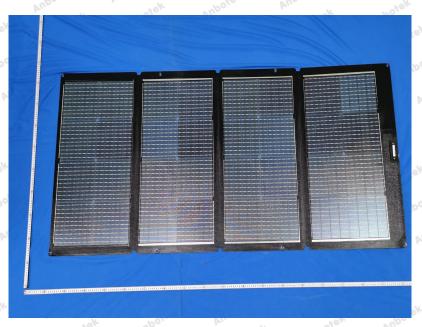
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5. Photos

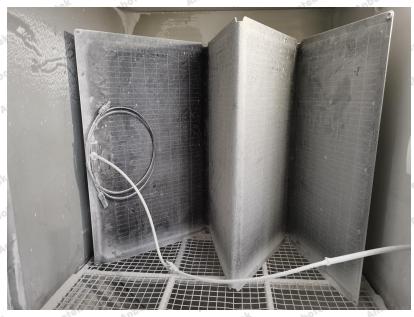


IP6X-Before test



IP6X-Test set-up





IP6X-After test



IP6X-After test



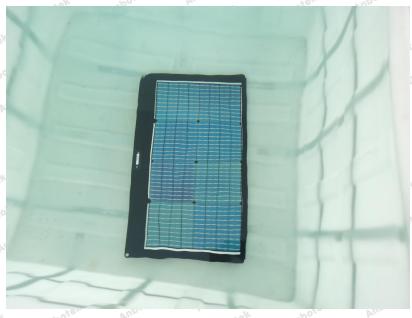


IP6X-After test



IPX8-Before test





IPX8-Test set-up



IPX8-After test





IPX8-After test

End of Report