

# IP66 TEST REPORT

**Issued By: Dongguan New Testing Centre Co., Ltd**

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4. The test report is invalid if altered.
5. Objections to the test report must be submitted to NTC within 15 days.
6. The test report is valid for the tested samples only.
7. As for test verdict, “—”means is “no need for judgment” “N/A” means is “not applicable”, “P” mean “pass”, “F” means “fail”.

<b>TEST REPORT</b> <b>IEC 60529</b> <b>Degrees of protection provided by enclosures(IP code)</b>	
Report Reference No.....	NTCSR1907012
Date of issue.....	Jul. 24, 2019
Total number of pages.....	10 pages
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Tested by (name + signature).....	<i>Jack Zhang</i>
Approved by (+ signature).....	Neil Zhong 
Applicant's name .....	ENERGYLED ELECTRONICS CORPORATION
Address .....	(Zone 22) Guiyuan Rd. North, Jixi Rd. West, Duanzhou District, Zhaoqing City, Guangdong Province China
Manufacturer's name.....	ENERGYLED ELECTRONICS CORPORATION
Address .....	(Zone 22) Guiyuan Rd. North, Jixi Rd. West, Duanzhou District, Zhaoqing City, Guangdong Province China
Standard.....	IEC 60529:1989+A1:1999+A2:2013
<b>Test specification:</b>	
Procedure deviation.....	N/A
Non-standard test method.....	N/A
<b>Test item description.....</b>	
Trade mark.....	 <b>Energyled</b>
Model/Type reference.....	BA0DXGSWC0017, BA0BXGSWC0017, BA0CXGSWC0017, BA0GXGSWC0017, "X" may be 00-99 to represent LED color temperature; (Please refer to page 3 of this report)
Ratings.....	See model list
IP degrees.....	IP66

**Testing:**

Date of receipt of test item ..... : Jul.08, 2019

Date (s) of performance of tests ..... : Jul. 08, 2019 to Jul. 24, 2019

**Possible test case verdicts:**

- test case does not apply to the test object..... : N (N/A)

- test object does meet the requirement..... : P (Pass)

- test object does not meet the requirement..... : F (Fail)

**General remarks:**

Throughout this report a point is used as the decimal separator.

The test results presented in this report relate only to the object tested.

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**Comments:**

--The first characteristic numeral 6 indicated protection against solid foreign objects.

The conditions:

--dust: talcum powder

--dust amount: 2kg/m<sup>3</sup>

--maximum depression: 2KPa

--test duration: 8 hours

--The second characteristic numeral 6 indicated protected against water jets, it means water projected in jets against the enclosure from any direction shall have no harmful effects.

The conditions to be observed are as follows:

– internal diameter of the nozzle: 12,5 mm;

– delivery rate: 100 l/min  $\pm$  5 %;

– water pressure: to be adjusted to achieve the specified delivery rate;

– core of the substantial stream: circle of approximately 120 mm diameter at 2,5 m distance from nozzle;

– test duration per square metre of enclosure surface area likely to be sprayed: 1 min;

– minimum test duration: 3 min;

– Distance from nozzle to enclosure surface: between 2.5 m and 3 m.

**General product information and summary of test:**

1. All models are supplied by approved non isolated LED drivers.
2. All models are the identical electrical, mechanical construction, except LED driver type and LED quantities are different.
3. Model list:

Model	Input Ratings	LED Driver Model No.	LED Driver Ratings
BA0DXGSWC0017	100-240V~, 50/60Hz, 100W	HLG-100H-3 6AB	Input: 100~240V, 50/60Hz,1.2A Output: 36Vdc, 2.65A
BA0BXGSWC0017	100-240V~, 50/60Hz, 150W	HLG-185H-3 6AB	Input: 100~240V, 50/60Hz,2.1A Output: 36Vdc, 5.2A
BA0CXGSWC0017	100-240V~, 50/60Hz, 200W	HLG-185H-3 6AB	Input: 100~240V, 50/60Hz,2.1A Output: 36Vdc, 5.2A
BA0GXGSWC0017	100-240V~, 50/60Hz, 300W	HLG-320H-3 6AB	Input: 100~240V, 50/60Hz,3.5A Output: 36Vdc, 8.9A

4. All tests were tested on model BA0GXGSWC0017.

IEC 60529			
Clause	Requirement – Test	Result - Remark	Verdict
11	General requirements for tests		P
11.1	Atmospheric conditions for water or dust tests	IP6X: 24.1°C,50%R.H,90 kPa IPX6: 24.8°C,52%R.H,90 kPa	P
11.2	Test samples	The tests specified in this standard are type tests.	P
11.3	Application of test requirements and interpretation of test results		P
11.4	Combination of test conditions for the first characteristic numeral		N/A
11.5	Empty enclosures	Test with equipment inside	N/A
12	Test for protection against access to hazardous parts indicated by the first characteristic numeral		N/A
12.1	Access probes	Not considered.	N/A
12.2	Test conditions	(See page 2 comments for details)	N/A
12.3	Acceptance conditions		P
12.3.1	For low-voltage equipment. (Rated voltage not exceeding 1000V a.c. and 1500V d.c.)		P
12.3.2	For high-voltage equipment (Rated voltage exceeding 1000V a.c. and 1500V d.c.)		N/A
12.3.3	For equipment with hazardous mechanical parts		N/A
13	Test for protection against solid foreign objects indicated by the first characteristic numeral		P
13.1	Test means		P
	Test means and the main test conditions are given in table 7	IP6X	P
13.2	Test conditions for first characteristic numerals 1, 2, 3, 4		N/A
13.3	Acceptance conditions for first characteristic numerals 1, 2, 3, 4		N/A
13.4	Dust test for first characteristic numerals 5 and 6	IP6X	P
13.5	Special conditions for first characteristic numeral 5		N/A
13.5.1	Test conditions for first characteristic numeral 5		N/A
13.5.2	Acceptance conditions for first characteristic numeral 5		N/A
13.6	Special conditions for first characteristic numeral 6		P

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Clause	Requirement – Test	Result - Remark	Verdict
13.6.1	Test conditions for first characteristic numeral 6		P

13.6.2	Acceptance conditions for first characteristic numeral 6		P
14	Test for protection against water indicated by the second characteristic numeral		P
14.1	The test means and the main test conditions are given in table 8	IPX6	P
14.2	Test conditions		P
	Test means and main test conditions are given in table 8		P
	During the tests for IPX1 TO IPX6 the water temperature should not differ by more than 5K from the temperature of the specimen under test	IPX6	P
	For IPX7 details of the water temperature are given in 14.2.7		N/A
	Test for second characteristic numeral 8, the test conditions are subject to agreement between manufacturer and user, but they shall be more severe than those prescribed in 14.2.7 and they shall take account of the condition that the enclosure will be continuously immersed in actual use		N/A
14.2.1	Test for second characteristic numeral 1 with the drip box		N/A
14.2.2	Test for second characteristic numeral 2 with the drip box		N/A
14.2.3	Test for second characteristic numeral 3 with oscillating tube or spray nozzle		N/A
14.2.4	Test for second characteristic numeral 4 with oscillating tube or spray nozzle		N/A
14.2.5	Test for second characteristic numeral 5 with the 6.3mm nozzle		N/A
14.2.6	Test for second characteristic numeral 6 with the 12.5mm nozzle	Test time: 3min (See page 3 comments for details)	P
14.2.7	Test for second characteristic numeral 7: temporary immersion between 0.15m and 1m		N/A
	The test is made by completely immersing the enclosure in water in its service position as specified by the manufacturer so that the following conditions are satisfied		N/A
	a) the lowest point of enclosures with a height less than 850mm is located 1000mm below the surface of the water		N/A

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Clause	Requirement – Test	Result - Remark	Verdict
	b) the highest point of enclosures with a height equal to or greater than 850mm is located 150mm below the surface of the water		N/A
	c) the duration of the test is 30min		N/A
	d)the water temperature does not differ from that of the equipment by more 5K		N/A
14.2.8	Test for second characteristic numeral 8: continuous immersion subject to agreement		N/A
14.2.9	Test for second characteristic numeral 9 by high pressure and temperature water jetting		N/A
	The test is made by spraying the enclosure with a stream of water from a standard test nozzle as shown in Figures 7, 8 and 9.		N/A
	The set-up for measuring the impact force of the water jet is given in Figure 10.		N/A
	The distribution force shall be verified at upper and lower limits of distance tolerance range (see Figure 11).		N/A
	a) For small enclosures (largest dimension less than 250 mm), the enclosure shall be mounted on the test device shown in Figure 12.		N/A
	b) For large enclosures (largest dimension greater than or equal to 250 mm), the enclosure shall be mounted as per intended use. The entire exposed surface area of the enclosure shall be subjected to the spray at some point during the test procedure.		N/A
14.3	After testing in accordance with the appropriate requirements of 14.2.1 to 14.2.9 the enclosure shall be inspected for ingress of water	No ingress of water	P
	It is the responsibility of the relevant technical committee to specify the amount of water which may be allowed to enter the enclosure and the details of a dielectric strength test		N/A
	In general, if any water has entered, it shall not:		N/A
	–be sufficient to interfere with the correct operation of the equipment or impair safety		N/A
	–deposit on insulation parts where it could lead to tracking along the creepage distances		N/A
	–reach live parts or windings not designed to operated when wet		N/A
	–accumulate near the cable end or enter the cable if any		N/A
	If the enclosure is provided with drain-holes, it should be proved by inspection that any water which enters does not accumulate and that it drains away without doing any harm to the equipment	No Drain-holes	N/A

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Clause	Requirement – Test	Result - Remark	Verdict
	For enclosure without drain-holes, the relevant product standard shall specify the acceptance conditions if water can accumulate to reach live parts	Water can't accumulate to reach live parts.	N/A
15	Test for protection against access to hazardous parts indicated by the additional letter		N/A
15.1	Access probes	No additional letter	N/A
	The access probe are given in table 6		N/A
15.2	Test conditions		N/A
	The access probe is pushed against any openings of the enclosure with the force specified in table 6		N/A
15.3	Acceptance conditions		N/A
	Test for the additional letter B		N/A
	Test for the additional letter C and D		N/A

**Test Equipment:**

Instrument Type	Range Used	Model	Calibration date	Calibration date
Dust proof tester	--	KXT309	2019-05-02	2020-05-02
Digital Power Meter	AC: 12-600V; 50Hz; 0.5A-20A; 7.5W-9KW; 0.2-1.0φ	PF9800	2019-05-02	2020-05-02
Temperature & Humidity Meter	15-30°C, 40%RH-80%RH	TH101A	2019-05-02	2020-05-02
Stop Watch	5s-24h	TA228	2019-05-02	2020-05-02
Water Supply Device & Nozzle Test System	IPX6	GS-IPX6	2019-05-02	2020-05-02
Rule	--	DGJC002	2019-05-02	2020-05-02





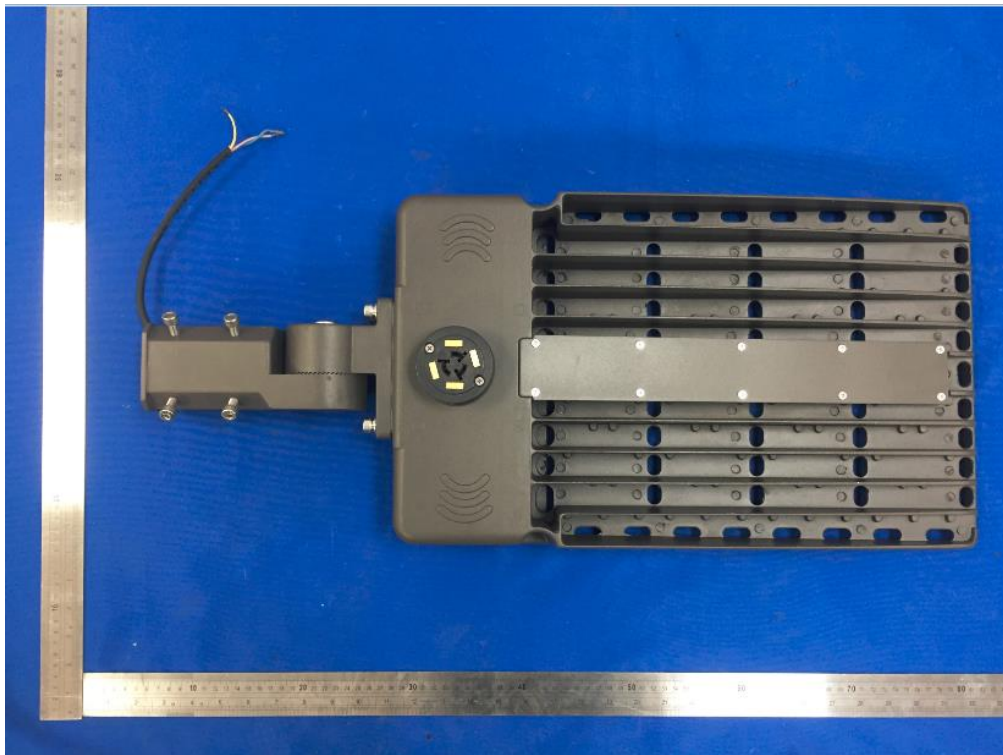
Fig.1: IP6X Before Testing



Fig.2: IPX6 testing



Picture 3: front view (Model: BA0GXGSWC0017)



Picture 4: Back view (Model: BA0GXGSWC0017)



Picture 5: explode view (Model: BA0GXGSWC0017)



Picture 6: lamp board photo (Model: BA0GXGSWC0017)

--End of report--