

Test Report issued under the responsibility of:

Guangzhou ITL Co., Ltd.

TEST REPORT IEC 60598-1 Luminaires Part 1: General requirements and tests (Clause 9 only)	
Report Number	220708013
Date of issue	2022-08-18
Total number of pages	11 pages
Name of Testing Laboratory preparing the Report	Guangzhou ITL Co., Ltd
Applicant's name	Foshan YiFeng Electric Industrial Co., Ltd.
Address	No. 898, Gao Ming Avenue East, He Cheng Blvd. GaoMing District, Foshan City, Guangdong Province, China.
Test specification:	
Standard	IEC 60598-1:2014 (Eighth Edition) Clause 9
Test procedure.....	LVD (IP66)
Test Report Form No.....	IEC60598_1
Test item description	Stage Luminaire
Trade Mark	ACME
Manufacturer	Same as applicant
Model/Type reference.....	LYRA(XA 1000 BSWF IP)
Ratings	Input: 100-240V~, 50/60Hz, 1200W
Responsible Testing Laboratory (as applicable), testing procedure and testing location(s):	
<input checked="" type="checkbox"/> Testing Laboratory:	Guangzhou ITL Co., Ltd
Testing location/ address	1-2/E. South Block, Building A2, No.3, Keyan Road, Science City, High-Tech Industrial Development Zone, Guangzhou, Guangdong, China
Tested by (name, function, signature)..... :	Kris Li (Project engineer) <i>Kris Li</i>
Approved by (name, function, signature) .. :	Bob Dai * (Reviewer) <i>Bob Dai</i>

List of Attachments (including a total number of pages in each attachment): Attachment 1: Product Photos, 3pages	
Summary of testing:	
Tests performed (name of test and test clause): - Tests for ingress of dust, solid objects and moisture (Clause 9.2 of IEC 60598-1:2014)	Testing location: Clause 9.2- IP66 test was subcontracted to Dongguan ITL Co., Ltd which was an ISO/IEC 17025 Accredited lab.of Registration No CNAS L9342 Address: NO.8, Jinqianling Street 5, Huangjiang Town, Dongguan, Guangdong, China
Summary of compliance with National Differences: <input checked="" type="checkbox"/> The product fulfils the requirements of Clause 9.2 of IEC 60598-1:2014	

Copy of marking plate:

The artwork below may be only a draft. The use of certification marks on a product must be authorized by the respective NCBs that own these marks.

See main report 220708010 marking plate.

Test item particulars: Stage Luminaire	
Classification of installation and use: Class I Luminaires	
Supply Connection: Detachable power supply cord connection:	
Possible test case verdicts:	
- test case does not apply to the test object.....: N/A	
- test object does meet the requirement.....: P (Pass)	
- test object does not meet the requirement.....: F (Fail)	
Testing:	
Date of receipt of test item: 2022-08-14	
Date (s) of performance of tests: 2022-08-14 to 2022-08-15	
General remarks:	
"(See Enclosure #)" refers to additional information appended to the report. "(See appended table)" refers to a table appended to the report.	
Throughout this report a <input type="checkbox"/> comma / <input checked="" type="checkbox"/> point is used as the decimal separator.	
Clause numbers between brackets refer to clauses in IEC 60598-1	
Manufacturer's Declaration per sub-clause 4.2.5 of IEC 60598-1:	
The application for obtaining a CB Test Certificate includes more than one factory location and a declaration from the Manufacturer stating that the sample(s) submitted for evaluation is (are) representative of the products from each factory has been provided	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable
When differences exist; they shall be identified in the General product information section.	
Name and address of factory (ies) : Foshan YiFeng Electric Industrial Co., Ltd. No. 898, Gaoming Avenue East, Hecheng Blvd. Gaoming District, Foshan City, Guangdong Province, China Acme Technology Co., Ltd. NO.91, HEYE 5TH RD., DALIAO DIST. KAOHSIUNG CITY 831130, TAIWAN	
General product information:	
1: The Stage Luminaires are Class I stage light with detachable flexible cord. 2: The approx. mass of this product is 40.6kg.	

IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
9	RESISTANCE TO DUST AND MOISTURE		P
9.2	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP..... :	IP66	—
	- mounting position during test..... :	Mounted as manufacturer recommend in user manual	—
	- fixing screws tightened; torque (Nm)..... :		—
	- tests according to clauses..... :		—
	- electric strength test afterwards		P
	The enclosure of a luminaire shall provide the degree of protection against ingress of dust, solid objects and moisture in accordance with the classification of the luminaire and the IP number marked on the luminaire.	IP66	P
	Compliance is checked by the appropriate tests specified in 9.2.0 to 9.2.9, and for other IP ratings by the appropriate tests specified in IEC 60529.		P
	Before the tests for the second characteristic numeral, with the exception of IPX8, the luminaire complete with lamp(s) shall be switched on and brought to a stable operating temperature at rated voltage.		P
	The water for the tests shall be at a temperature of 15 °C ± 10 °C.	18.5°C	P
	Luminaires shall be mounted and wired as in normal use and placed in the most unfavourable position, complete with their protective translucent covers, if any, for the tests of 9.2.0 to 9.2.9.		P
	For tests of 9.2.3 to 9.2.9, a fixed luminaire intended for mounting with its body in contact with a surface shall be tested with an expanded metal spacer interposed between the luminaire and the mounting surface.		P
	If the installation instructions indicate that a luminaire is for ceiling or under-canopy mounting, the luminaire shall be attached to the underside of a flat board or plate which extends 10 mm beyond that part of the luminaire perimeter in contact with the mounting surface.		N/A
	For recessed luminaires, the parts in the recess and the parts protruding from the recess shall each be tested according to their IP classification as indicated in the manufacturer's mounting instructions. A box encapsulating the part in the recess may be necessary for the test of 9.2.4 to 9.2.9.		N/A
	For IP2X luminaires, the enclosure denotes that part of the luminaire containing the main part other than the lamp and optical controls.	IP6X	N/A

IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Portable luminaires, wired as in normal use, shall be placed in the most unfavourable position of normal use.		N/A
	Fixing screws of covers, other than hand-operated fixing screws of glass covers, shall be tightened with a torque equal to two-thirds of that specified in Table 4.1.		P
	After completion of the tests, the luminaire shall withstand the electric strength test specified in Section 10, and inspection shall show:		P
	a) no deposit of talcum powder in dust-proof luminaires, such that, if the powder were conductive, the insulation would fail to meet the requirements of this standard;		P
	b) no deposit of talcum powder inside enclosures for dust-tight luminaires;		P
	c) no trace of water on electrical connections, current carrying parts or on insulation where it could become a hazard for the user or surroundings,		P
	1)For luminaires without drain holes, there shall be no water entry.		P
	2)For luminaires with drain holes, water entry including condensation is allowed during the tests		N/A
	d) no trace of water having entered in any part of a watertight or pressure water tight luminaire;		P
	e) no contact permitted with live parts by the relevant test probe for first characteristic IP numeral 2;	IP6X	N/A
	no entry into the luminaire enclosure by the relevant test probe for first characteristic IP numerals 3 and 4;	IP6X	N/A
	for luminaires with drain holes in accordance with 4.17 and luminaires with ventilation slots for forced cooling, no contact with live parts is permitted through the drain holes and ventilation slots with the relevant test probe for the first characteristic IP numerals 3 and 4;	Without drain holes	N/A
	f) no trace of water on any part of a lamp requiring protection from splashing water as indicated in the "informations for luminaire design" section of the applicable lamp standard;		P
	g) no damage, for example, cracking or breakage of a protective shield or glass envelope, such that safety or protection against the ingress of moisture is impaired.		P
9.2.0	Tests		---

IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
	Solid-object-proof luminaires (first characteristic IP numeral 2) shall be tested with the standard test finger specified in IEC 60529 according to the requirements of Sections 8 and 11 of this standard.	IP6X	N/A
	Solid-object-proof luminaires (first characteristic IP numerals 3 and 4) shall be tested at every possible point (excluding gaskets) with a probe in accordance with test probe C or D of IEC 61032, applied with a force as shown in Table 9.1:	IP6X	N/A
	The end of the probe wire shall be cut at right angles to its length and be free from burrs.		N/A
9.2.1	Dust-proof luminaires (first characteristic IP numeral 5) shall be tested in a dust chamber similar to that shown in Figure 6, The test shall proceed as follows:	IP6X	N/A
	<p>a) The luminaire is suspended outside the dust chamber and operated at rated supply voltage until operating temperature is achieved.</p> <p>b) The luminaire, whilst still operating, is placed with the minimum disturbance in the dust chamber.</p> <p>c) The door of the dust chamber is closed.</p> <p>d) The fan/blower causing the talcum powder to be in suspension is switched on.</p> <p>e) After 1 min, the luminaire is switched off and allowed to cool for 3 h whilst the talcum powder remains in suspension.</p>		N/A
9.2.2	Dust-tight luminaires (first characteristic IP numeral 6) are tested in accordance with 9.2.1.	IP6X	P
9.2.3	Drip-proof luminaires (second characteristic IP numeral 1) are subjected for 10 min to an artificial rainfall of 1mm/min, falling vertically from a height of 200 mm above the top of the luminaire.		N/A
9.2.4	Rain-proof luminaires (second characteristic IP numeral 3) are sprayed with water for 10 min by means of a spray apparatus as shown in Figure 7.		N/A
9.2.5	Splash-proof luminaires (second characteristic IP numeral 4) are sprayed from every direction with water for 10 min by means of the spray apparatus shown in Figure 7 and described in 9.2.4.	IPX6	N/A
9.2.6	Jet-proof luminaires (second characteristic IP numeral 5) are switched off and immediately subjected to a water jet for 15 min from all directions by means of a hose having a nozzle with the shape and dimensions shown in Figure 8. The nozzle shall be held 3 m away the sample.	IPX6	N/A

IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict
9.2.7	Powerful water jet-proof luminaires (second characteristic IP numeral 6) are switched off and immediately subjected to a water jet for 3 min from all directions by means of a hose having a nozzle with the shape and dimensions shown in Figure 8.	IPX6	P
9.2.8	Watertight luminaires (second characteristic IP numeral 7) are switched off and immediately immersed for 30 min in water, so that there is at least 150 mm of water above the top of the luminaire and the lowest portion is subjected to at least 1 m head of water. Luminaires shall be held in position by their normal fixing means.		N/A
9.2.9	Pressure watertight luminaires (second characteristic IP numeral 8) are heated either by switching on the lamp or by other suitable means, so that the temperature of the luminaire enclosure exceeds that of the water in the test tank by between 5 °C and 10 °C.		N/A
	The luminaire shall then be switched off and subjected to a water pressure of 1,3 times that pressure which corresponds to the rated maximum immersion depth for a period of 30 min.		N/A

Annex: Explanation of IP numbers for degrees of protection

Annex J	Explanation of IP numbers for degrees of protection		P
	The designation to indicate the degrees of protection consists of the characteristic letters IP followed by two numerals (the "characteristic numerals") indicating conformity with the conditions stated in Tables J.1 and J.2 respectively.	IP66	P

IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict

Table J.1 – Degrees of protection indicated by the first characteristic numeral

First characteristic numeral	Degree of protection	
	Short description	Brief details of objects which will be "excluded" from the enclosure
0	Non-protected	No special protection.
1	Protected against solid objects greater than 50 mm	A large surface of the body, such as a hand (but no protection against deliberate access). Solid objects exceeding 50 mm in diameter.
2	Protected against solid objects greater than 12 mm	Fingers or similar objects not exceeding 80 mm in length. Solid objects exceeding 12 mm in diameter.
3	Protected against solid objects greater than 2,5 mm	Tools, wires, etc., of diameter or thickness greater than 2,5 mm. Solid objects exceeding 2,5 mm in diameter.
4	Protected against solid objects greater than 1,0 mm	Wires or strips of thickness greater than 1,0 mm. Solid objects exceeding 1,0 mm in diameter.
5	Dust-protected	Ingress of dust is not totally prevented but dust does not enter in sufficient quantity to interfere with satisfactory operation of the equipment.
6	Dust-tight	No ingress of dust.

IEC 60598-1			
Clause	Requirement + Test	Result - Remark	Verdict

Table J.2 – Degrees of protection indicated by the second characteristic numeral

Second characteristic numeral	Degree of protection	
	Short description	Details of the type of protection provided by the enclosure
0	Non-protected	No special protection
1	Protected against dripping water	Dripping water (vertically falling drops) shall have no harmful effect
2	Protected against dripping water when tilted up to 15°	Vertically dripping water shall have no harmful effect when the enclosure is tilted at any angle up to 15° from its normal position
3	Protected against spraying water	Water falling as a spray at an angle up to 60° from the vertical shall have no harmful effect
4	Protected against splashing water	Water splashed against the enclosure from any direction shall have no harmful effect
5	Protected against water jets	Water projected by a nozzle against the enclosure from any direction shall have no harmful effect
6	Protected against heavy seas	Water from heavy seas or water projected in powerful jets shall not enter the enclosure in harmful quantities
7	Protected against the effects of immersion	Ingress of water in a harmful quantity shall not be possible when the enclosure is immersed in water under defined conditions of pressure and time
8	Protected against submersion	The equipment is suitable for continuous submersion in water under conditions which shall be specified by the manufacturer. NOTE Normally, this will mean that the equipment is hermetically sealed. However, with certain types of equipment, it can mean that water can enter but only in such a manner that it produces no harmful effects.
Specialist cleaning techniques are not covered by IP ratings. Manufacturers are recommended to give appropriate information regarding cleaning techniques, where necessary. This is in line with the recommendations contained within IEC 60529 for specialist cleaning techniques.		

--End--

Attachment 1: Photos

Type of equipment, model: LYRA(XA 1000 BSWF IP)

Details of: IP6X testing



Details of: After IPX6

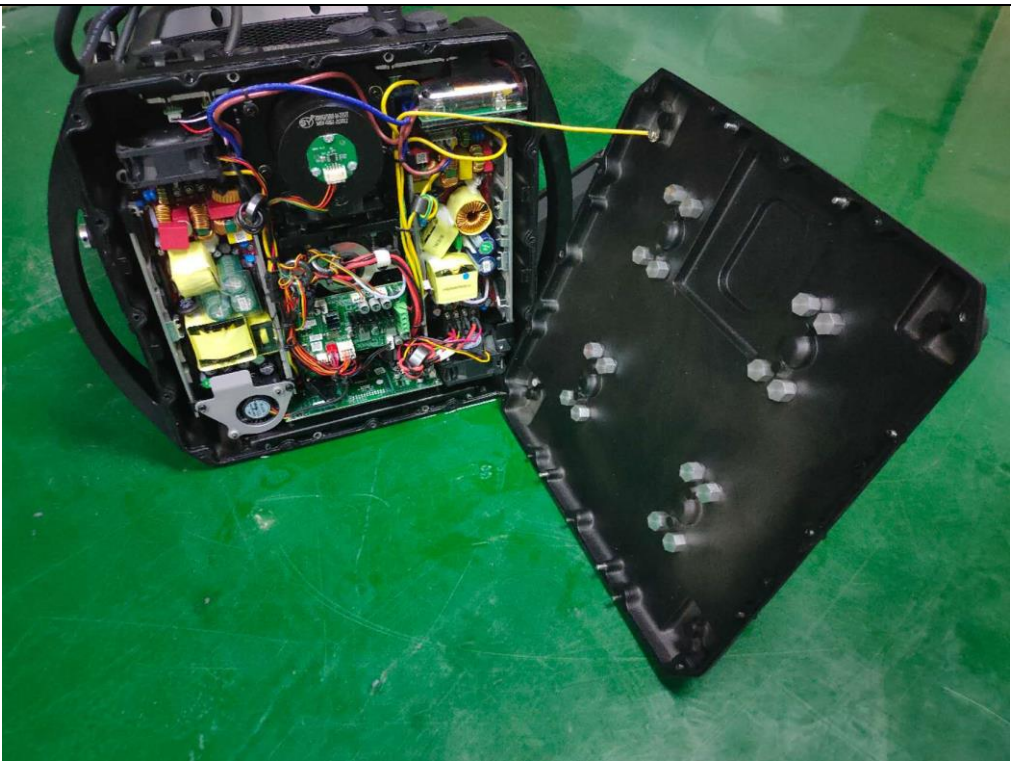


Attachment 1: Photos

Details of: After IP66 test

View:

- general
- front
- rear
- right
- left
- top
- bottom
- Internal

A photograph showing the internal components of a black, ruggedized device. The device is open, revealing a green printed circuit board (PCB) populated with various electronic components, including capacitors, resistors, and integrated circuits. A yellow fan is visible on the right side of the board. The device is resting on a green surface.

Details of: After IP66 test

View:

- general
- front
- rear
- right
- left
- top
- bottom
- Internal

A photograph showing the internal components of a black, ruggedized device. The device is open, revealing a green printed circuit board (PCB) populated with various electronic components, including capacitors, resistors, and integrated circuits. A yellow fan is visible on the right side of the board. The device is resting on a green surface.

Attachment 1: Photos

Details of: After IP66 test



Details of: After IP66 test

