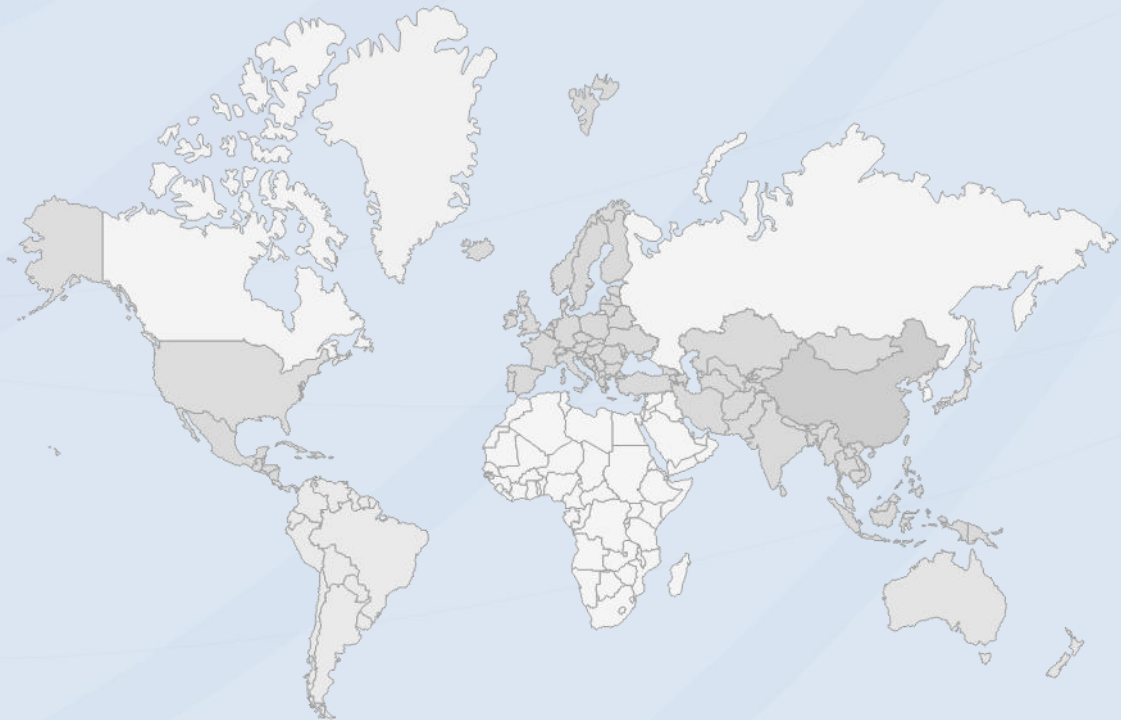


IP69K TEST REPORT

Report No.....: NTC-SR2603010
Applicant's name.....: ASD LIGHTING COR
Address.....: 178 Hughes Landing Blvd,Suite 350 The Woodlands TX
77380 United States



DONGGUAN NEW TESTING CENTRE CO., LTD

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TEST REPORT IEC 60529 Degrees of protection provided by enclosures(IP code)	
Report Reference No..... :	NTC-SR2603010
Date of issue..... :	Mar. 12, 2026
Total number of pages..... :	15 Pages
Testing Laboratory..... :	Dongguan New Testing Centre Co., Ltd
Address..... :	1F & 3F, No. 1 the 1st North Industry Road Songshan Lake Science & Technology Park Dongguan, People's Republic of China 523808
Tested by (name + signature)..... :	Jacky Zhang 
Approved by (+ signature)..... :	Neil Zhong 
	
Applicant's name..... :	ASD LIGHTING COR
Address..... :	178 Hughes Landing Blvd,Suite 350 The Woodlands TX 77380 United States
Manufacturer's name..... :	ASD LIGHTING COR
Address..... :	178 Hughes Landing Blvd,Suite 350 The Woodlands TX 77380 United States
Standard..... :	IEC 60529:1989+A1:1999+A2:2013 Clause 9.2 of IEC 60598-1:2020, Clause 9.2 of EN IEC 60598-1:2021, and client's special requirements
Test specification:	
Procedure deviation..... :	N/A
Non-standard test method..... :	N/A
Test item description..... : Fixture Luminaires	
Trade mark..... :	ASD
Model/Type reference..... :	ASD-UHG-ST-200[BK,WH]-[BLANK,EM], ASD-UHG-ST-240[BK,WH]-[BLANK,EM]; other details see model list.
Ratings..... :	120-277Vac
IP degrees..... :	IP69K

Testing:

Date of receipt of test item.....: Mar. 02, 2026

Date (s) of performance of tests.....: Mar. 02, 2026 to Mar. 12, 2026

Possible test case verdicts:

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

This report shall not be reproduced except in full without the written approval of the testing laboratory.

Determination of the test conclusion is based on IEC Guide 115 in consideration of measurement uncertainty.

Model list:

Model	Voltage	wattage
ASD-UHG-ST-200[BK,WH]-[BLANK,EM]	120-277V	100/150/200W
ASD-UHG-ST-240[BK,WH]-[BLANK,EM]	120-277V	150/200/240W

Remark:

All models have same construction. with the only difference being their power ratings.

All tests were conducted on Model ASD-UHG-ST-240[BK,WH]-[BLANK,EM].

Comments:

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

Test Method:

The tests should be carried out under the standard atmospheric condition.

The atmospheric conditions during tests are as follows:

Temperature range: 15°C to 35°C. Relative humidity: 25% to 75%.

The test is made using a dust chamber incorporating the basic principles shown in figure 2 where by the powder circulation pump may be replaced by other means suitable to maintain the talcum powder in suspension in a closed test chamber. The talcum powder used shall be able to pass through a square-meshed sieve the nominal wire diameter of which is 50µm and the nominal width of gap between wires 75 µm. The amount of talcum powder to be used is 2 kg per cubic meter of the test chamber volume. It shall not have been used for more than 20 tests.

Enclosures are of necessity in one of two categories:

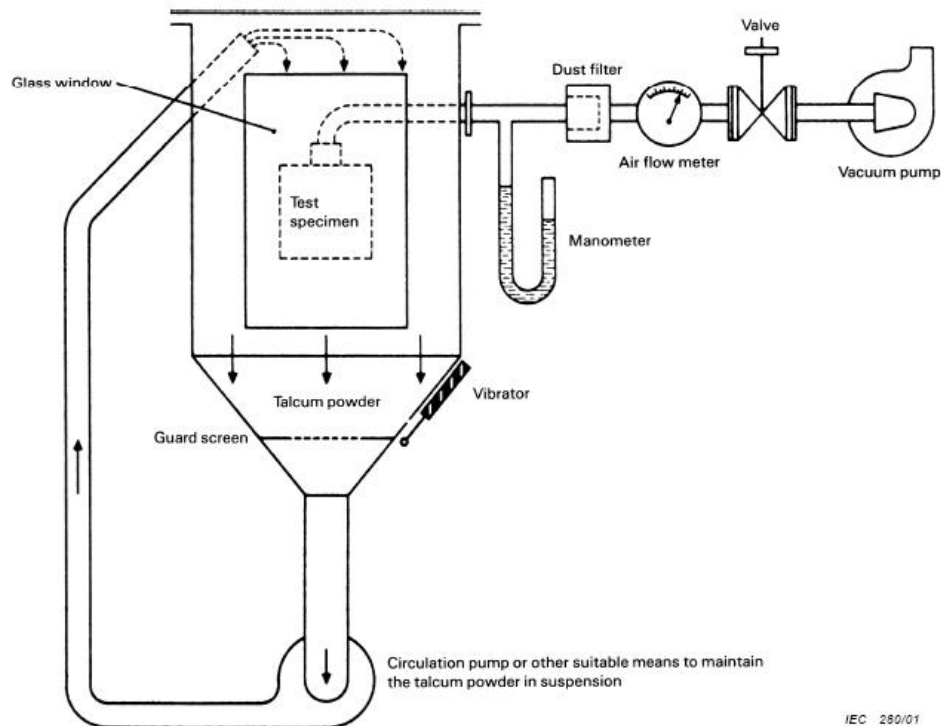
Category 1: Enclosures where the normal working cycle of the equipment causes reductions in air pressure within the enclosure below that of the surrounding air, for example, due to thermal cycling effects.

The enclosure under test is supported inside the test chamber and the pressure inside the enclosure is maintained below the surrounding atmospheric pressure by a vacuum pump. In no event shall the depression exceed 2KPa(20mbar) on the manometer shown in figure 2. If an extraction rate of 40 to 60 volumes per hour is obtained the duration of the test is 2h. The extraction rate is less than 40 volumes per hour, the test is continued until 80 volumes have been drawn through, or a period of 8h has elapsed.

Category 2: Enclosures where no pressure difference relative to the surrounding air is present.

The enclosure under test is supported in its normal operating position inside the test chamber, but is not connected to a vacuum pump. Any drain-hole normally open shall be left open for the duration of the test. The test shall be continued for a period of 8h.

The enclosure shall be deemed category 1, whether reductions in pressure below the atmospheric pressure are present or not.

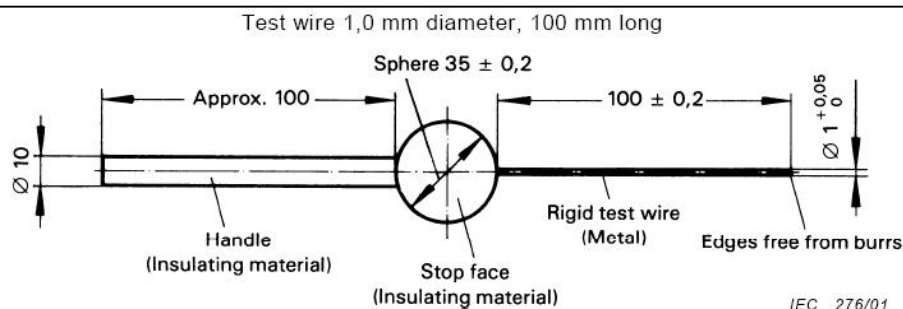


IEC 280/01

NOTE See IEC 60068-2-68, figure 2 valid for La2 only.

Figure 2 – Test device to verify protection against dust (dust chamber)

The test wire of 1.0 mmφ insert into any openings of the enclosure with a force of 1N±10%.



Acceptance Conditions:

The protection is satisfactory if no deposit of dust is observable inside the enclosure at the end of the test. The protection is satisfactory if adequate clearance is kept between the access probe and hazardous parts. The protection is satisfactory if the access probe 1.0 mm diameter shall not pass through the any opening.

According to client's application, this report and test result is for IP69K test according to clause 9.2 of standard IEC 60598-1:2020 and EN IEC 60598-1:2021

Dust-proof luminaires (first characteristic IP numeral 6) shall be tested in a dust chamber similar to that shown in Figure 6, in which talcum powder is maintained in sus-pension by an air current. The chamber shall contain 2 kg of powder for every cubic metre of its volume. The talcum powder used shall be able to pass through a square-meshed sieve whose nominal wire diameter is 50 μm and whose nominal free distance between wires is 75 μm . It shall not have been used for more than 20 tests.

The test shall proceed as follows.

- The luminaire is suspended outside the dust chamber and operated at rated supply voltage until the operating temperature is achieved.
- The luminaire, whilst still operating, is placed with the minimum disturbance in the dust chamber.
- The door of the dust chamber is closed.
- The fan/blower causing the talcum powder to be in suspension is switched on.
- After 1 min, the luminaire is switched off and allowed to cool for 3 h whilst the talcum powder remains in suspension.

NOTE The 1 min interval between switching on the fan/blower and switching off the luminaire is to ensure that the talcum powder is properly in suspension around the luminaire during initial cooling, which is most important with smaller luminaires. The luminaire is operated initially as in item a) to ensure the test chamber is not overheated.

Dust-tight luminaires (first characteristic IP numeral 6) are tested in accordance with 9.2.1.

Test Result: ☒ Pass ☐ Fail

Comments:

-- Test for second characteristic numeral 9 by high pressure and temperature water jetting.

9.2.10 High pressure and temperature water jet-proof luminaires (second characteristic IP numeral 9 (80 °C)) are switched off and immediately subjected to the high pressure and high temperature water jet. The test is made by spraying the luminaire with a stream of hot water from a standard test nozzle as described in IEC 60529. The water for the tests shall be at a temperature of $(80 \pm 5) ^\circ\text{C}$. For small enclosures (largest dimension less than 250 mm), the test duration is in total 2 min. For large enclosures (largest dimension greater than or equal to 250 mm), the test duration is 1 min/m² of the calculated surface area of the enclosure (excluding any mounting surface), with a minimum duration of 3 min.

9.2.11 High pressure and cold water jet-proof luminaires (second characteristic IP numeral 9 (15 °C)) are switched off and immediately subjected to the high pressure and cold temperature water jet. The test is made by spraying the luminaire with a stream of water from a standard test nozzle as described in IEC 60529. The water for the tests shall be at a temperature of $(15 \pm 10) ^\circ\text{C}$. For small enclosures (largest dimension less than 250 mm), the test duration is in total 2 min. For large enclosures (largest dimension greater than or equal to 250 mm), the test duration is 1 min/m² of the calculated surface area of the enclosure (excluding any mounting surface), with a minimum duration of 3 min.

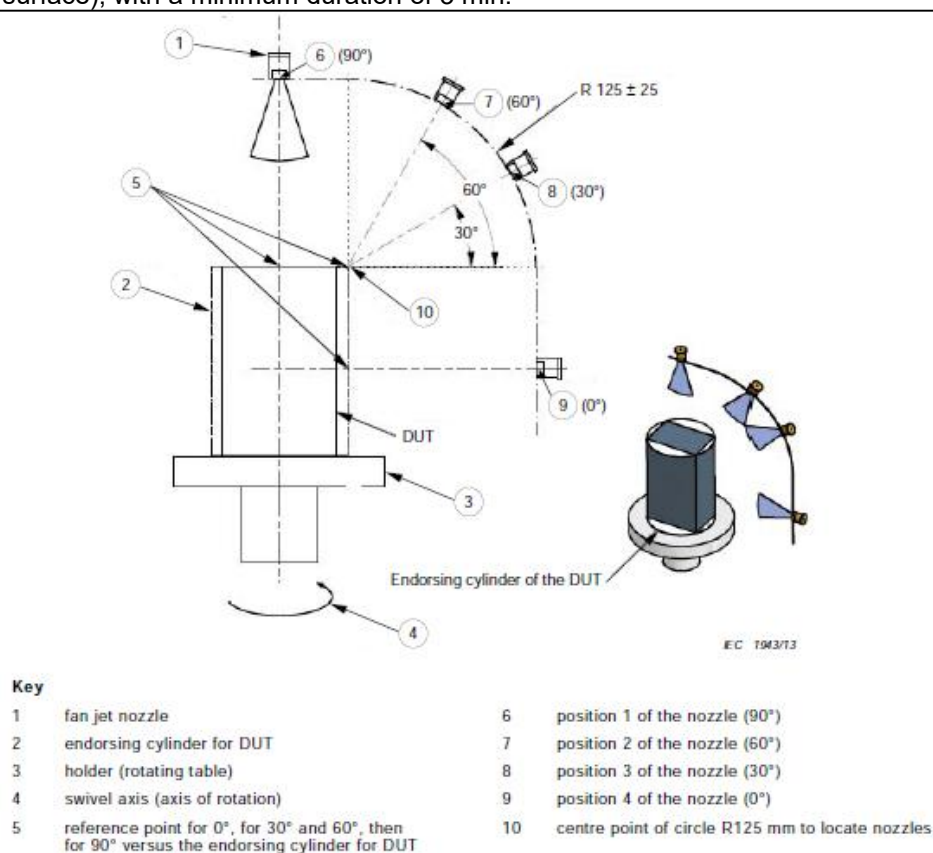
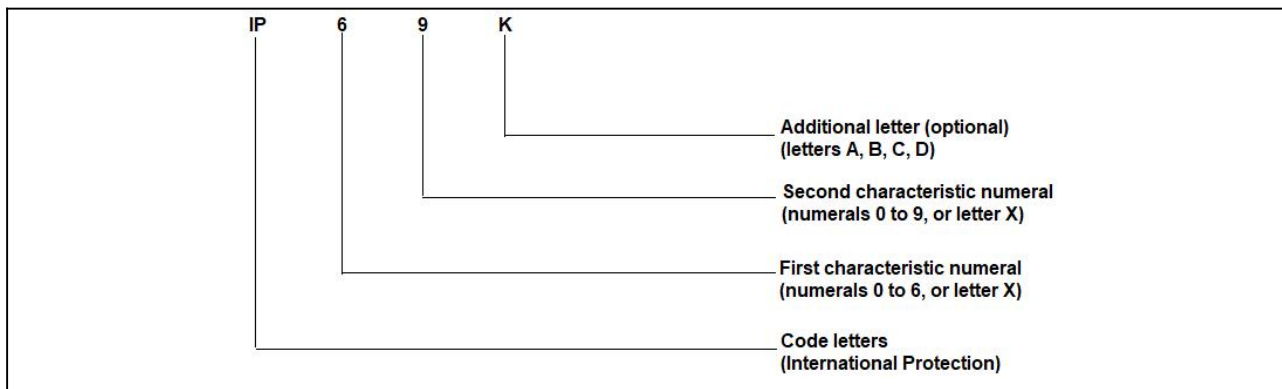


Figure 12 – Test set-up for determining the protection against high-pressure and temperature water jet; degree of protection against ingress of water IP X9 for small enclosures



Acceptance Conditions:

After testing in accordance with the appropriate requirements, the enclosure shall be inspected for ingress of water.

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, if any.

In general, if any water has entered, it shall not:

- be sufficient to interfere with the correct operation of the equipment or impair safety;
- deposit on insulation parts where it could lead to tracking along the creepage distances;
- reach live parts or windings not designed to operate when wet;
- accumulate near the cable end or enter the cable if any.

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.

For enclosures without drain-holes, the relevant product standard shall specify the acceptance conditions if water can accumulate to reach live parts.

Test Result: ☒ Pass ☐ Fail

Model	IP	Test result
ASD-UHG-ST-240[BK,WH]-[BLANK,EM]	IP6X	Pass
ASD-UHG-ST-240[BK,WH]-[BLANK,EM]	IPX9K	Pass

IEC 60529			
Clause	Requirement – Test	Result - Remark	Verdict
11	General requirements for tests		P
11.1	Atmospheric conditions for water or dust tests	IP6X: 35.0°C,51%R.H,92 kPa IPX9: 50.0°C,52%R.H,92 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 3-6 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
13.6.1	Test conditions for first characteristic numeral 6		P
13.6.2	Acceptance conditions for first characteristic numeral 6		P

IEC 60529			
Clause	Requirement – Test	Result - Remark	Verdict
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	IPX9	P
14.2	Test conditions		P
	Test means and main test conditions are given in table 8		P
	During the tests for IPX1 TO IPX9 the water temperature should not differ by more than 5K from the temperature of the specimen under test		N/A
	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 14.2.8 and they shall take account of the condition than the enclosure will be continuously immersed in actual use		N/A
	Test for second characteristic numeral 9, the test conditions are subject to agreement between manufacturer and user, but they shall be more severe than those prescribed in 14.2.9 and they shall take account of the condition than the enclosure will be continuously immersed in actual use	IPX9	P
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		N/A
14.2.7	Test for second characteristic numeral 7: temporary immersion between 0.15m and 1m		N/A
14.2.8	Test for second characteristic numeral 8: continuous immersion subject to agreement		N/A
	Test for second characteristic numeral 8: 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

IEC 60529			
Clause	Requirement – Test	Result - Remark	Verdict
	a) the lowest point of enclosures with a height less than 850mm is located 1000mm below the surface of the water		N/A
	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
14.2.9	Test for second characteristic numeral 9 by high pressure and temperature water jetting		P
	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.		P
	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.	Test time: 5 min (See page 5-6 comments for details)	P
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

IEC 60529			
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		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

IEC 60529			
Clause	Requirement – Test	Result - Remark	Verdict
According to client's application, this report and test result is for IP69K test according to clause 9.2 of standard IEC 60598-1:2020 and EN IEC 60598-1:2021			
9	RESISTANCE TO DUST AND MOISTURE		P
9.2	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP..... :	IP69K	—
	- mounting position during test..... :	As in normal use	—
	- fixing screws tightened; torque (Nm)..... :	--	—
	- tests according to clauses..... :	cl.9.2.2, cl.9.2.10	—
	- electric strength test afterwards		P
	a) no deposit in dust-proof luminaire		N/A
	b) no talcum in dust tight luminaire		P
	c) no trace of water on current-carrying parts or on insulation where it could become a hazard		P
	c.1) For luminaires without drain holes – no water entry		P
	c.2) For luminaires with drain holes – no hazardous water entry		N/A
	d) no water in watertight, pressure watertight, high pressure and temperature water jet-proof or high pressure and cold water jet-proof luminaire		P
	e) no contact with live parts (IP 2X)		N/A
	e) no entry into enclosure (IP 3X and IP 4X)		N/A
	e) no contact with live parts through drain holes and ventilation slots (IP3X and IP4X)		N/A
	f) no trace of water on part of lamp requiring protection from splashing water		N/A
	g) no damage of protective shield or glass envelope		P

IEC 60529			
Clause	Requirement – Test	Result - Remark	Verdict

Test Equipment:

Instrument Type	Make and Model	Model	Range Used	Calibration Date	
				Last	Next
Dust-proof box	Dongguan Guotong Test Equipment Co., LTD	KXT309	--	2025-03-20	2026-03-19
Digital Power Meter	EVERFINE	PF9800	Current: 0.01-19A Voltage: 5-600V Wattage: 5-9000W PF: 0.2-1.0, 40-60Hz	2025-03-20	2026-03-19
Temperature & Humidity Meter	Anymeter	TH603	15-30 °C, 40%RH-80%RH	2025-03-20	2026-03-19
Stop Watch	TIAN Fu	PC894	5s-24h	2025-03-20	2026-03-19
Water Supply Device & Nozzle Test System	Dongguan Guotong Test Equipment Co., LTD	GT1310H	IPX9K	2025-03-20	2026-03-19
Rule	/	5M	0-5M	2025-03-20	2026-03-19

Photo



Fig.1: IP6X Post Testing
(Model: ASD-UHG-ST-240[BK,WH]-[BLANK,EM])



Fig.2: IP6X Pre Testing
(Model: ASD-UHG-ST-240[BK,WH]-[BLANK,EM])



Fig.3: IP6X Post Testing
(Model: ASD-UHG-ST-240[BK,WH]-[BLANK,EM])



Fig.4: IPX9K Testing
(Model: ASD-UHG-ST-240[BK,WH]-[BLANK,EM])



Fig.5: IPX9K Testing
(Model: ASD-UHG-ST-240[BK,WH]-[BLANK,EM])

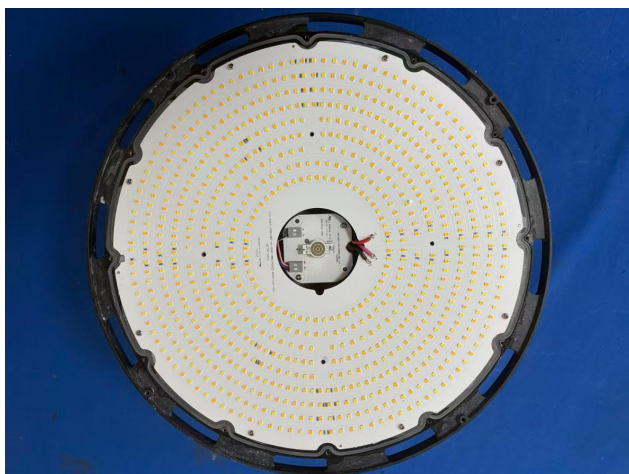


Fig.6: IPX9K Post Testing
(Model: ASD-UHG-ST-240[BK,WH]-[BLANK,EM])



Fig.1: Front View (Model: ASD-UHG-ST-240[BK,WH]-[BLANK,EM])



Fig.2: Back view (Model: ASD-UHG-ST-240[BK,WH]-[BLANK,EM])

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