TEST REPORT

DEGREES OF PROTECTION PROVIDED BY ENCLOSURES
(IP CODE)

Report No.: STD181106NB-148-DB-IP

Model: NTW-A-WM-Tx-23L-30K-UL-BZ

Date: 2018-11-23

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E-mail: STD@standard-tech.com

TEST REPORT

Applicant ..... :	CREE LIGHTING
Address..... :	9201 WASHINGTON AVE. RACINE, WI 53406
Trade mark..... :	/
Sample Description..... :	Wall Pack
Test Model:	NTW-A-WM-T3-23L-30K-UL-BZ
Taking/Receiving Date ... :	2018-11-09
Testing Laboratory Name:	Standard-tech Co., Ltd.
Address:	Standard-Tech Building, No. 6 Guanhong Road, Guangzhou Science City, Guangzhou 510663, CHINA.
Test Requested ..... :	IP65.
Test Method ..... :	IEC 60529:1989 + A1:1999+ A2:2013; IEC 60598-2-1:1979; IEC 60598-1:2014 + A1:2017
Test Results..... :	PASS

Tested by:

Corey Ou

Reviewed by:

John Li

TEST REPORT

1. Test standards

IEC 60529:1989+ A1:1999+ A2:2013
IEC 60598-2-1:1979
IEC 60598-1: 2014 + A1:2017
Degrees of protection provided by enclosures (IP Code)

TEST REPORT

2. Conformity verification - Summary of inspection

Clause	Summary of inspection	Test result		
		N/A.	Pass	Fail
IEC 60529				
13	TESTS FOR PROTECTION AGAINST SOLID FOREIGN OBJECTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL	☐	☒	☐
14	TESTS FOR PROTECTION AGAINST WATER INDICATED BY THE SECOND CHARACTERISTIC NUMERAL	☐	☒	☐
IEC 60598-2-1 (IEC 60598-1)				
1.13 (9.2)	TESTS FOR INGRESS OF DUST, SOLID OBJECTS AND MOISTURE	☐	☒	☐

Test case verdicts:

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

Pass: Test item does meet the requirement

Fail: Test item does not meet the requirement

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3. Test information and results

IEC60529			
Clause	Requirement - Test	Result –Remark	Verdict
13	**TESTS FOR PROTECTION AGAINST SOLID FOREIGN OBJECTS INDICATED BY THE FIRST CHARACTERISTIC NUMERAL**		——
13.1	Test means		——
	Test means and the main test conditions are given in Tab. 7.		——
	Tab. VII-7 Test means for the tests for protection against solid foreign objects		——
	First characteristic numeral	Test means	——
	0	No test required	N/A
	1	Rigid sphere without handle or guard 50 mm diameter	N/A
	2	Rigid sphere without handle or guard 12,5 mm diameter	N/A
	3	Rigid steel rod2,5 mm diameter with edges free from burrs	N/A
	4	Rigid steel wire 1 mm diameter with edges free from burrs	N/A
	5	Dust chamber Fig. 2, with or without underpressure	N/A
	6	Dust chamber Fig. 2, with underpressure	P
13.4	Dust test for first characteristic numerals 5 and 6	First characteristic numerals is 6	P
	The test is made using a dust chamber incorporating the basic principles shown in figure 2 whereby the power circulation pump may be replaced by other means suitable to maintain the talcum powder in suspension in a closed tesr chamber. Thetalcum powder used ahall be able to pass through a spuare-meshed soeve the nominal wire diameter of which is 50 and the nomianl width of a gap between wires 75μm. The amount of talcun powder to be uesd is 2kg per cubic metre of the test chamber volume. It shall not have been used for more than 20 tests.		P

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IEC60529			
Clause	Requirement - Test	Result –Remark	Verdict
	The test shall proceed as follows. a) The luminaire is suspended outside the dust chamber and operated at rated supply voltage until operating temperature is achieved. b) The luminaire, whilst still operating, is placed with the minimum disturbance in the dust chamber. c) The door of the dust chamber is closed. d) The fan/blower causing the talcum powder to be in suspension is switched on. e) After 1 min, the luminaire is switched off and allowed to cool for 3 h whilst the talcum powder remains in suspension.		P
13.6	Special cindutions for first characteristic numeral 6		——
13.6.1	Test conditions for first characteristic numerals 6	First characteristic numerals is 6	P
	The enclosure shall be deemed category 1, whether reductions in pressure below the atmospheric pressure are present or not.		P
13.6.2	Acceptance conditions for first characteristic numerals 6	First characteristic numerals is 6	P
	The protection is satisfactory if mo deposit of dust is observable inside the enclosure at the end of the test.		P

14	**TESTS FOR PROTECTION AGAINST WATER INDICATED BY THE SECIND CHARACTERISTIC NUMERAL**					**——**
14.1	Test means					——
	The test means and the main test conditions are given in the table 8					——
	Tab 8 Test means and main test conditions for the tests for protection against water					——
	Second charact. numeral	Test means	Water flow rate	Duration of test	Test conditions	——
	0	No test required	—	—	—	N/A
	1	Drip box Fig.3 Enclosure on turntable	1 mm/min	10 min	14.2.1	N/A

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IEC60529			
Clause	Requirement - Test	Result –Remark	Verdict

	2	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
	3	Oscillating tube Fig. 4 Spray ± 60° from vertical,distance max. 200 mm or Spray nozzle Fig. 5 Spray ± 60° from vertical	0,07 l /min ± 5% per hole, multiplied by number of holes 10 l /min ± 5%	10 min 1 min/m² at least 5 min	14.2.3 a) 14.2.3 b)	N/A
	4	As for numeral 3 Spray ± 180° from vertical	As for numeral 3	As for numeral 3	14.2.4	N/A
	5	Water jet hose nozzle Fig. 6 Nozzle 6,3 mm diameter, distance 2,5□m to 3 m	12,5 l /min ± 5%	1 min/m² at least 3 min	14.2.5	P
	6	Water jet hose nozzle Fig. 6 Nozzle 12,5 mm diameter, distance 2,5 m to 3 m	100 l /min ± 5%	1 min/m² at least 3 min	14.2.6	N/A
	7	Immersion tank Water-level on enclosure: 0,15 m above top 1 m above bottom	—	30 min	14.2.7	N/A
	8	Immersion tank Water-level: by agreement	—	by agreement	14.2.8	N/A
14.2.5	Test for second characteristic numeral 5 with the 6.3mm nozzle					P
	The test is made by spraying the enclosure from all practicable directions with a stream of water from a standard test nozzle as shown in figure 6					P
	test with a nozzle with a diameter of 6.3 mm at 12.5 l/min in a distance of 2,5m to 3m for 1 min/m² per surface					P
	Minimum test duration: at least 3min			15 min		P

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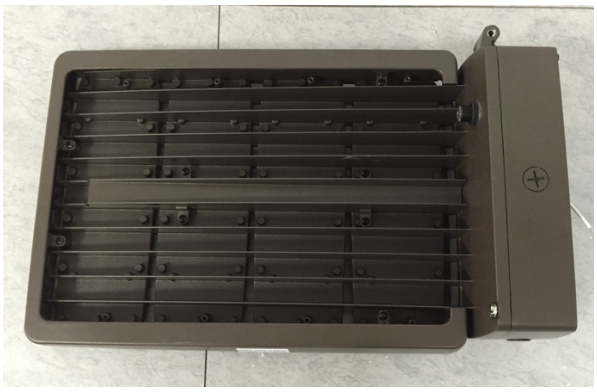
IEC 60598-2-1 (IEC 60598-1)			
Clause	Requirement + Test	Result - Remark	Verdict
1.13 (9)	**RESISTANCE TO DUST, SOLID OBJECTS AND MOISTURE**		**P**
1.13 (9.2)	Tests for ingress of dust, solid objects and moisture:		P
	- classification according to IP :	IP65	—
	- mounting position during test :	Normal mounting	—
	- fixing screws tightened; torque (Nm) :	0.80Nm/1.2Nm	—
	- tests according to clauses :	9.2.2; 9.2.6	—
	- 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 SELV parts or where it could become a hazard		P
	d) i) For luminaires without drain holes – no water entry		P
	d) ii) For luminaires with drain holes – no hazardous water entry		N/A
	e) no water in watertight luminaire		N/A
	f) no contact with live parts (IP 2X)		N/A
	f) no entry into enclosure (IP 3X and IP 4X)		N/A
	f) no contact with live parts (IP3X and IP4X)		N/A
	g) no trace of water on part of lamp requiring protection from splashing water		N/A
	h) no damage of protective shield or glass envelope		N/A

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4.Photos

NTW-A-WM-Tx-23L-30K-UL-BZ

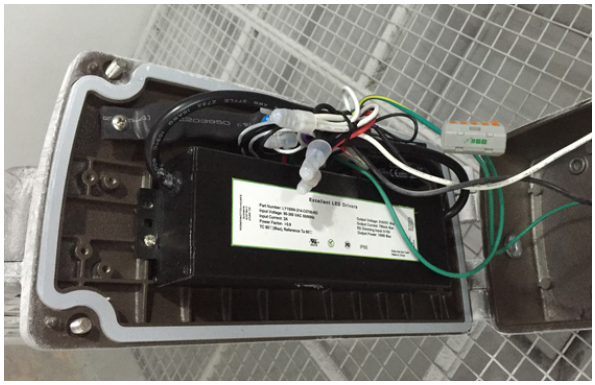
Before test:





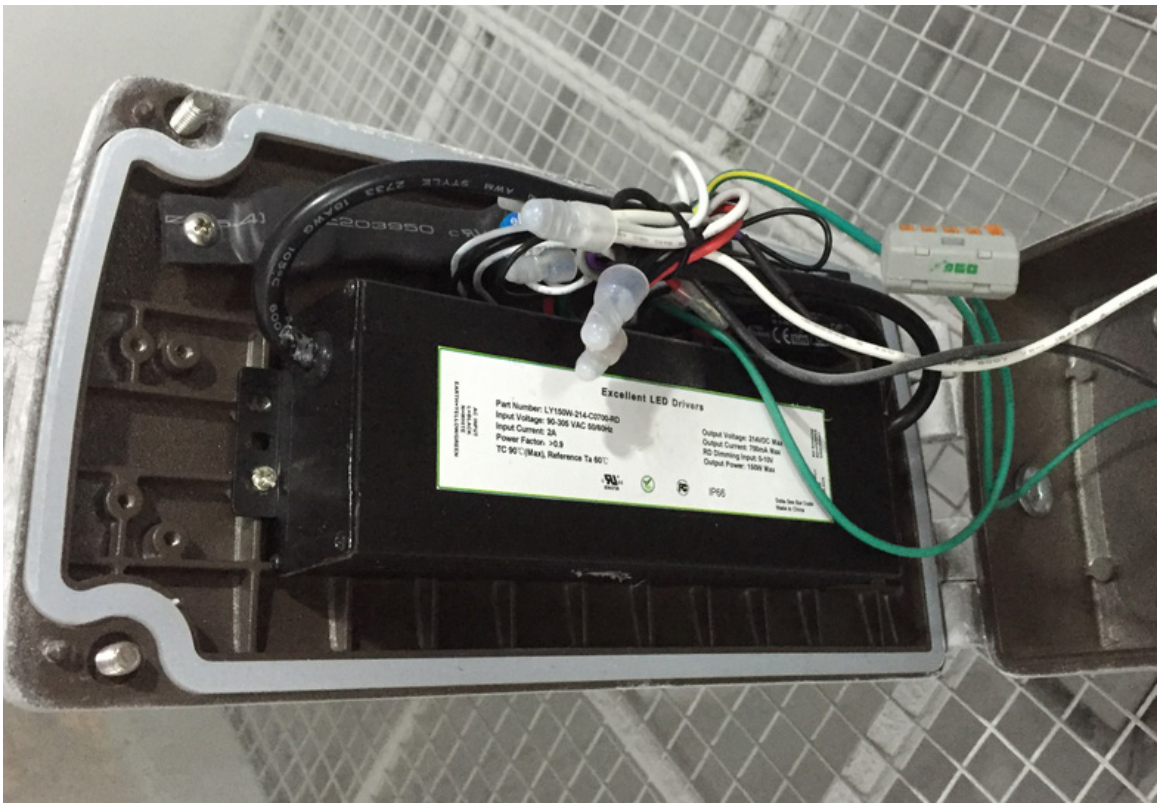
After test:





TEST REPORT

After test:



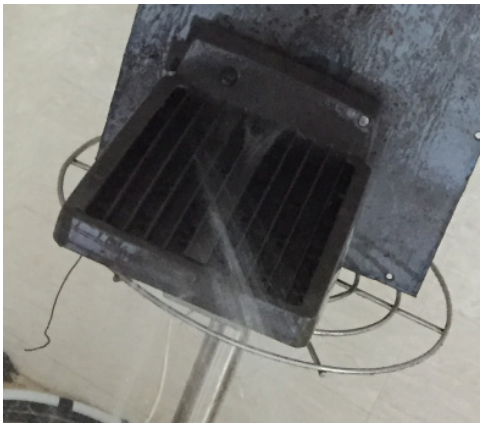
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Testing:





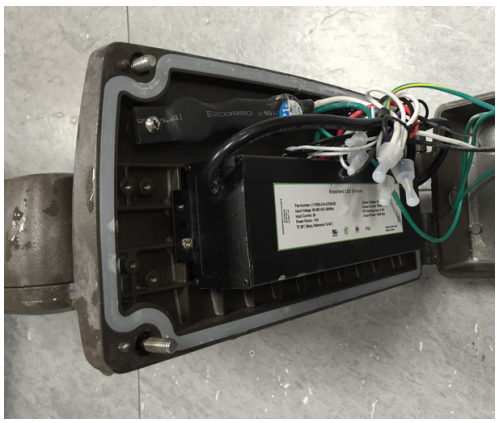


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After test:



Dry with a towel

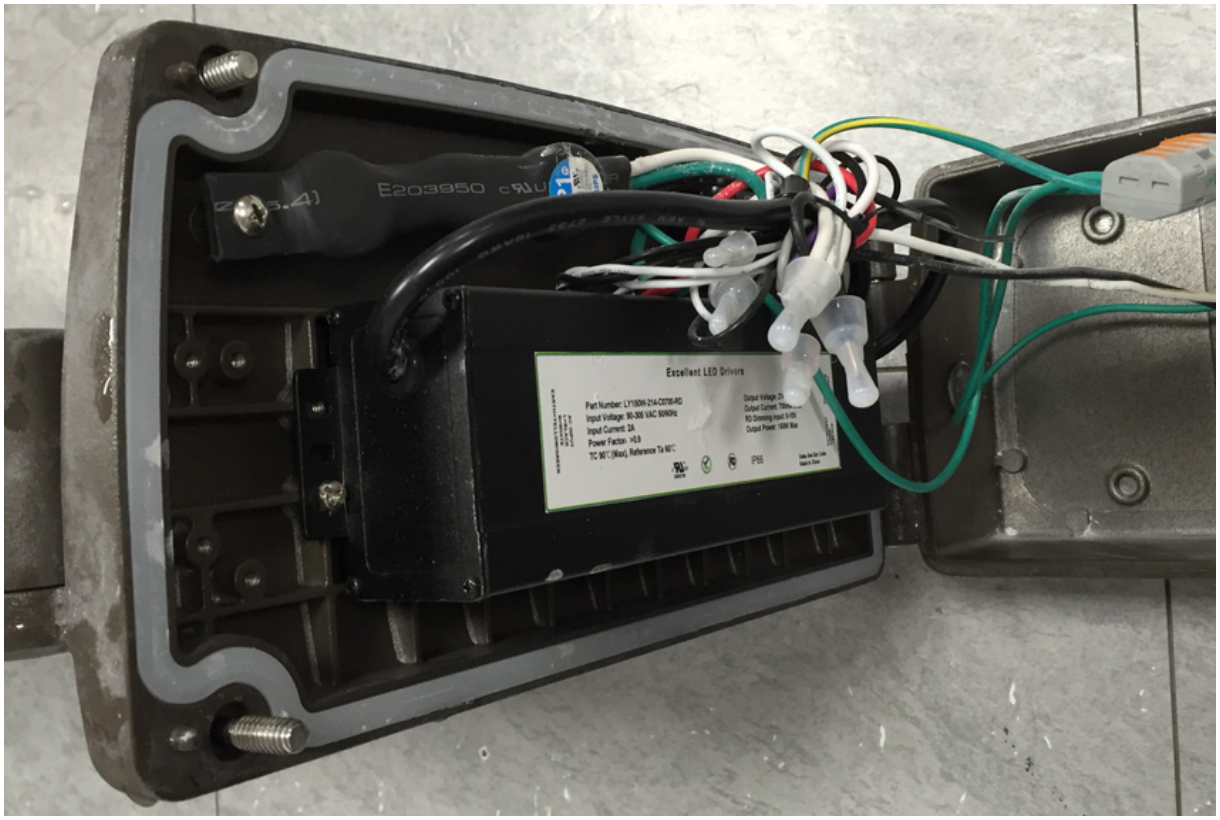


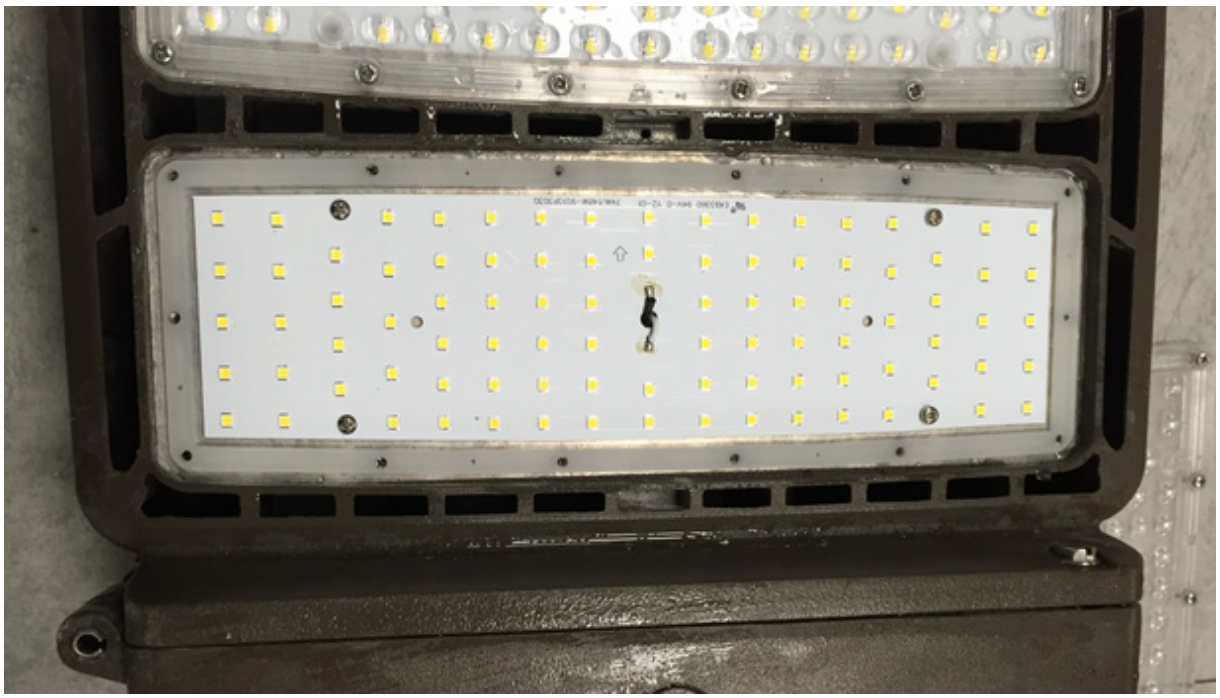


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After test:





STATEMENT

1. Without the written authorization from the laboratory, this test report should not be partially duplicated, unless the whole test report being copied as an entire document.
2. The test report is only valid to the tested sample.
3. If you have any objections on this testing result, please submit a written complain to the laboratory within 10 days after you received this test report.
4. The tested samples must be reclaimed within 60 days after you received this test report, otherwise, the laboratory will dispose them itself.
5. This test report is for applicant's reference only, not for complains or arbitrations as in accordance with.

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