Rep No.SZAEK190408007-01

# TEST REPORT

| | | |
|---|---|---|
| **Product** | : | **OUTDOOR LIGHTS** |
| **Model** | : | **SQDN01 /CEILING** |
| **Client** | : | **La Luce di Marletta SNC** |
| **Factory** | : | **Via Archimede, 365, 97100, Ragusa, Italy** |
| **Test sort** | : | **Entrustment inspection** |

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# Marking

1. The test report is invalid without the official stamp of test center.
2. Nobody is allowed to photocopy or partly photocopy this test report without written permission of test center.
3. The test report is invalid without the signatures of testing engineer, reviewer and approver.
4. The test report is invalid if altered.
5. Objections to the test report must be submitted to test center within 15 days.
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”, “P” means “pass”,”F” means “fail”.

# TEST REPORT

| | | |
|---|---|---|
| **Applicant** | : | La Luce di Marletta SNC |
| **Address** | : | Via Archimede, 365, 97100, Ragusa, Italy |

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

| | | |
|---|---|---|
| **Sample Name** | : | LED OUTDOOR LIGHT |
| **Model** | : | SQDN01 - CEILING, SQDN02 - CEILING,SQDN03 - CEILING, SQDN03 - CEILING |
| **Trademark** | : | LA LUCE |
| **Description** | : | / |
| **Supplier** | : | / |
| **Manufacturer** | : | / |
| **Other information** | : | / |
| **Sample(s) received Date** | : | 2019.04.08 |
| **Testing period** | : | 2019.04.08 - 2019.04.13 |
| **Report Date** | : | 2019.04.13 |

| | | |
|---|---|---|
| **Test item** | : | IP65 |
| **Test method** | : | IEC 60529:2013 |
| **Test Results** | : | Pass |

**Prepared by：**

Name: Moon Liu
Title: Test Engineer

**Checked by：**

Name: Jimmy Zhou
Title: Lab Manager

**Approved by：**

Name: Mike Jiang
Title: Lab Manager

# TEST REPORT

## 1. Test standards

| IEC 60529:2013<br>Degrees of protection provided by enclosures(IP Code) |
|---|

## 2. Conformity verification-Summary of inspection

| Clause | Summary of inspection | Test result | | |
|---|---|---|---|---|
| | | N/A. | Pass | Fail |
| 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 | ☐ | ☑ | ☐ |

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

2.1 Environmental Conditions :
Environmental Temperature：15℃~35℃
Relative Humidity：25%~65%
Pressure：86kpa~106kpa

2.2 Test equipment :

| Equipment Name | Equipment No. | Model | Validity Period |
|---|---|---|---|
| Dust proof box | SE-1152 | GR-IPPCA01 | 2019.08.24 |
| Water proof test system | SE-264 | IPX5-6 | 2019.08.24 |


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# TEST REPORT

**3. Test information and results**

| IEC 60529:2013 | | | |
|---|---|---|---|
| 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 | | - |
| Table 7 | First characteristic numeral / Test means | Test force | - |
| | 0 / No test required | - | N/A |
| | 1 / Rigid sphere without handle or guard 50mm diameter | 50 N ± 10 % | N/A |
| | 2 / Rigid sphere without handle or guard 12.5mm diameter | 30 N ± 10 % | N/A |
| | 3 / Rigid steel rod 2.5mm diameter with edges free from burrs | 3 N ± 10 % | N/A |
| | 4 / Rigid steel wire 1mm diameter with edges free from burrs | 1 N ± 10 % | N/A |
| | 5 / Dust chamber Fig.2,with or without underpressure | - | N/A |
| | 6 / Dust chamber Fig.2,with underpressure | - | P |
| 13.2 | Test conditions for first characteristic numerals 1, 2, 3, 4 | | N/A |
| | The object probe is pushed against any openings of the enclosure with the force specified in table 7. | | N/A |
| 13.3 | Acceptance conditions for first characteristic numerals 1, 2, 3, 4 | | N/A |
| | The protection is satisfactory if the full diameter of the probe specified in table 7 does not pass through any opening. | | N/A |


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| IEC 60529:2013 | | | |
|---|---|---|---|
| Clause | Requirement-Test | Result-Remark | Verdict |
| 13.4 | Dust test for first characteristic numerals 5 and 6 | First characteristic numeral 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 replace 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 50 and the nominal width of a gap between wires 75μm . The amount of talcum powder to be used is 2Kg per cubic metre of the test chamber volume. It shall not have been used for more than 20 tests. | | P |
| | Enclosures are of necessity in one of two categories:<br>Category1: 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.<br>Category 2:Enclosures where no pressure difference relative to surrounding air is present. | | - |
| | Category 1 enclosures:<br>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.The suction connection shall be made to a hole specially provided for this test.<br>A volume of air 80 times the volume of the sample enclosure tested without exceeding the extraction rate of 60 volumes per hour. In no event shall the depression exceed 2 kPa(20 mbar) on the manometer shown in figure 2. | | P |


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| | | | |
|---|---|---|---|
| | Category 2 enclosures:<br>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. | | - |
| 13.5 | Special conditions for first characteristic numeral 5 | | - |
| 13.5.1 | Test conditions for first characteristic numeral 5 | First characteristic numeral is 5 | N/A |
| | The enclosure shall be deemed category 1 unless the relevant product standard for the equipment specifies that the enclosure is category 2. | | N/A |
| 13.5.2 | Acceptance conditions for first characteristic numeral 5 | First characteristic numeral is 5 | N/A |
| | The protection is satisfactory if, on inspection, talcum powder has not accumulated in a quantity or location such that, as with any other kind of dust, it could interfere with the correct operation of the equipment or impair safety. Except for special cases to be clearly specified in the relevant product standard, no dust shall deposit where it could lead to tracking along the creepage distances . | | N/A |
| 13.6 | Special conditions for first characteristic numeral is 6 | | - |
| 13.6.1 | Test conditions for first characteristic numeral is 6 | First characteristic numeral 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 Numeral 6 | First characteristic numeral is 6 | P |
| | The protection is satisfactory if no deposit of dust is observable inside the enclosure at the end of the test. | | P |


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| | | | | | | |
|---|---|---|---|---|---|---|
| **14** | **TESTS FOR PROTECTION AGAINST WATER INDICATED BY THE SECOND CHARACTERISTIC NUMERAL** | | | | | **N/A** |
| 14.1 | Test means | | | | | - |
| | The test means and the main test conditions are given in the table 8 | | | | | - |
| | Table 8<br>Test means and main test conditions for the tests for Protection against water | | | | | - |
| | Second Characteristic 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 |
| | 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.a Spray ±60°from vertical, distance max.200mm or Spray nozzle Fig.5 Spray ±60°from vertical | 0.07L/min ±5% per hole, multiplied by Number of holes 10L/min ±5% | 10min<br>1 min/$m^2$<br>at least 3 min | 14.2.3a)<br>14.2.3b) | 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 6.3mm diameter,distance 2.5m to 3m | 12.5L/min ±5% | 1 min/$m^2$<br>at least 3 min | 14.2.5 | P |


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| | | | | | | |
|---|---|---|---|---|---|---|
| | 6 | Water jet hose Nozzle Fig.6 Nozzle 12.5mm diameter,distance 2.5m to 3m | 100L/min ±5% | 1 min/$m^2$ at least 3 min | 14.2.6 | N/A |
| | 7 | Immersion tank Water-level on Enclosure:0.15m above top 1m above bottom | - | 30min | 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 | | | | | P |
| | Nozzle diameter : 6.3 mm; Distance : 2.5 m to 3 m ; water flow: (2.6±0.625)L/min. | | | | | P |
| | Test time:3 min | | | | | P |

**4.Test result:**

| NO | Item | Requirements | Result | Verdict |
|---|---|---|---|---|
| SZAEK180408007-001 | IP6X | No dust enter the sample inside | No dust enter the sample inside | P |
| SZAEK180408007-002 | IPX5 | No water enter the sample inside or the water inside does not affect the electrical properties of the sample. | No water enter the sample inside. | P |


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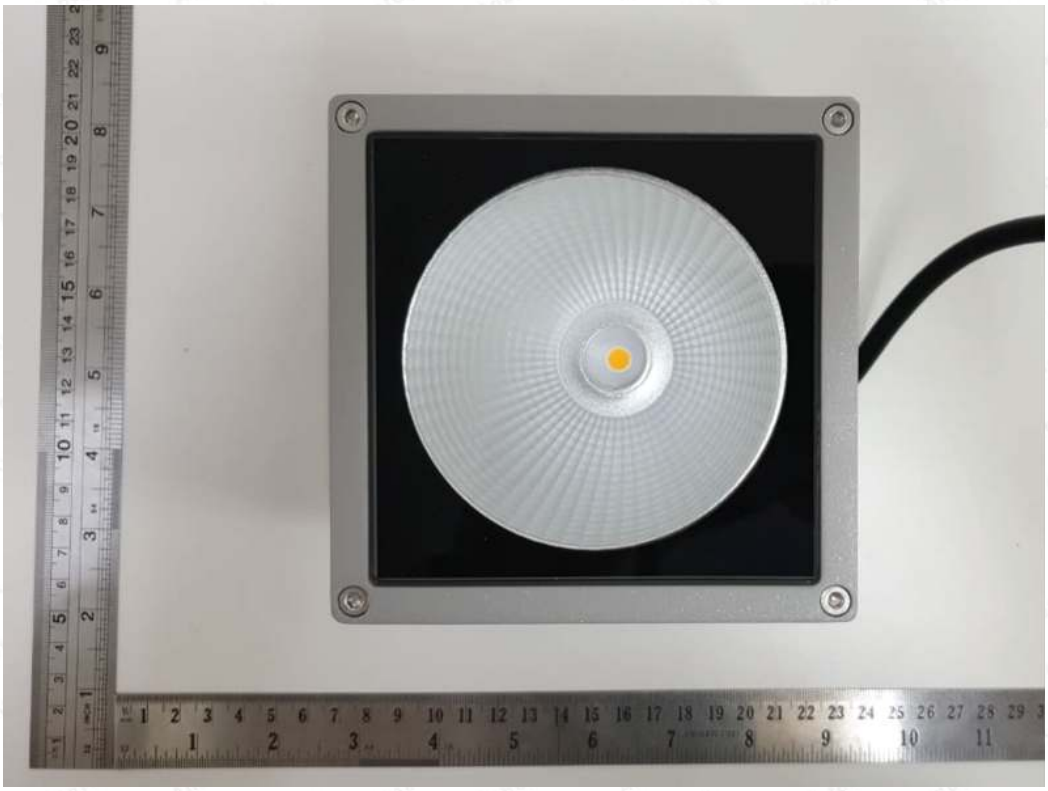
# TEST REPORT

**5. Photos**



**Before test**



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**Test set-up**



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**After test**



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**During Test**



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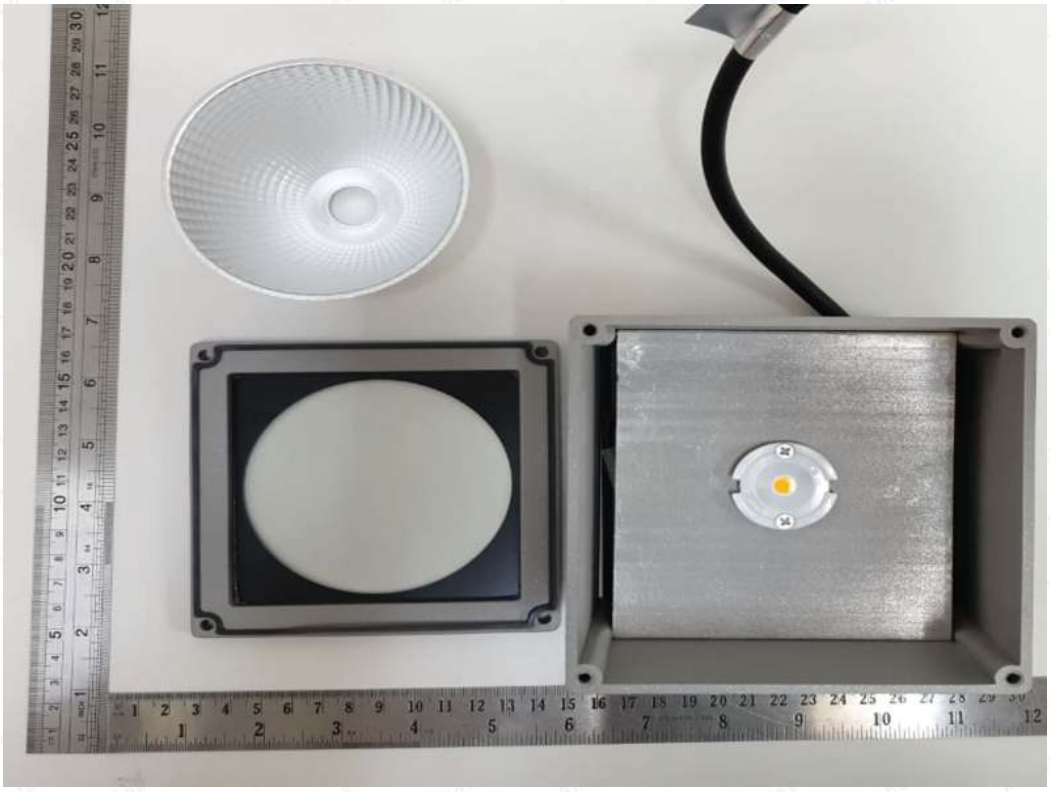

**After test**

*****End of report*****



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