TEST REPORT

Applicant:	SHENZHEN NOBLE OPTO CO., LTD.
Address:	Building 5F, Mingjinhai Industry Park, Shiyan Town, Bao'an District, Shenzhen, China, 518108
Report Number:	POCE18010304DRS
Total Page:	9 Pages

Report on the submitted sample said to be:

Sample name:	300mm High Power Traffic Light
Trade Name:	N/A
Specimen Model:	NBVB313HP-V12, NBAL313HP-V12, NBPS312HP-V12, NBVB312HP-V12, NBPS300HP-V12, NBAL300HP-V12, NBVB300HP-R, NBVB300HP-A, NBVB300HP-G
Manufacturer:	SHENZHEN NOBLE OPTO CO., LTD.
Address:	Building 5F, Mingjinhai Industry Park, Shiyan Town, Bao'an District, Shenzhen, China, 518108
Date EUT received:	Jan. 03, 2018
Date test effected:	Jan. 03, 2018- Jan. 08, 2018
Types of Test:	Water Penetration And Dust Dry Heat Cold Damp Heat Cyclic

****** FOR FURTHER DETAILS, PLEASE REFER TO THE FOLLOWING PAGE(S) ******

Signed for and on behalf of
POCE Ltd

Prepared by(Engineer) : _____

Approvedr(Manager) : _____

SUMMARY

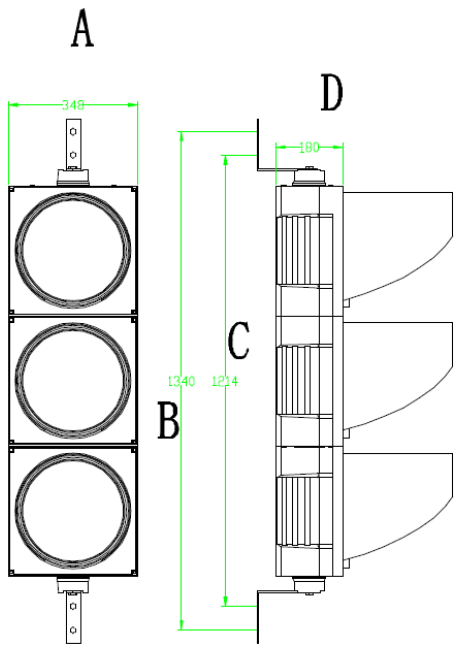
1. Specimen description

The 200 mm diameter traffic lights samples sampled by Shenzhen POCE technology Co., Ltd. in Jan. 03, 2018 and delivered to the laboratories. Are composed of ablack polycarbonate support, inside which a luminous matrix made by LEDS is mounted. The front part has a closing door on which a transparent lens in polycarbonate is mounted. The colour of the lantern is detemined by LED light emission. The door is provided with support for mounting the visor. The main technical characteristics are sated in the following table

Signal head	Sign	Color	No. of LEDS	Voltage	Outside Dimensions
NBVB313HP-V12	Full Ball	Red	3	85-275Vac	1340 x 348 x 180 mm
		Yellow	3		
		Green	3		

Signal head NBVB313HP-V12 - LEDs characterisitics

Color	Manufacture/ Trademark	Frequency (Hz)	Voltage[V]	Power[W]
Red	SHENZHEN NOBLE OPTO CO., LTD.	45-65Hz	85-275Vac	>8 W
Yellow	SHENZHEN NOBLE OPTO CO., LTD.	45-65Hz	85-275Vac	>8 W
Green	SHENZHEN NOBLE OPTO CO., LTD.	45-65Hz	85-275Vac	>8 W



Company mm	A	B	C	D
2 lights	348	990	864	180
3 lights	348	1340	1214	180

Traffic Signal Light drawings of model NBVB313HP-V12

2. Reference documents

The test was carried out in accordance with the requirements of the following documents:

* European EN 12368:2015 “Traffic control equipment- Signal head”;

* Italian standard EN 60529:1997”Degrees of protection provided by enclosures (IP code);

* Italian standard EN 60068-2-2:2008 “Enviromental testing part 2-2: Tests-Test B: Dry heat”;

* Italian standard EN 60068-2-1:2007 “Enviromental testing Part 2-1: Test-Test A: Cold”;

* Italian standard EN 60068-2-30:2010”Enviromental testing Part 2-30: Tests-Test Db: Damp heat cyclic(12+12h cycle)”;

3. Enviromental conditions

Temperature: 23±3℃

Realative humidity: 50±10%

Pressure: 1010±20hPa

4. Test apparatus

- Dust chamber BIEMME TP800.S/N RM081;
- Jet-nozzle (=6.3mm), S/N RM134;
- Flowmeter KEY INSTRUMENTS FR5L60PL. S/N RM131
- analogic timer HEUER, S/N RM084;
- MINIDATALOGGER DELATOHM HD602.S/N RM243;
- Climatic chamber ANGELANTION UC10-40/70 TWIN(Side B), S/N RM084

5. Test conditions

5.1 Water penetration and dust

The EUTs, placed into dust chamber as shown in the photos below. Have been exposed to talcum Powder in suspension(particle size<50um). The amount of talcum power used has been 3kg perCubic mertre of the chamber colume. The period of the test has been 8 hours.

After then. The EUTs have been subjected to water spray. Made by spraying the enclosure form all practicable directions from a distance between 2 and 3 meters with a stream of water (delivery rate 12.5l/min) from a nozzle as with internal diameter of 6.3mm. The test duration has been 3 minutes. The following photos show the samples during the test.

5.2 Dry heat

The Euts have been placed into the climatic chamber. As shown in the following photo. And subjected to the steps described in the table below in accordance to UNI EN 12368 Table 11 “Temperature range”- Class A and to EN 60068-2-2 “Dry heat- test Bb’.

Phase	Description	Time	Operating status	Note
1	Transtition from ambient(25℃ to T=60℃)	45	Operating	
2	Isotherm at T=60℃	960	Operating	
3	Transition from T=60℃ to ambient temperature	45	Operating	
4	Isotherm at ambient temperature	60	Operating	

The graph below shows the recording of temperature values acquired during the wholes test by

means of the minidatalogger with 1 minute interval.

5.3 Cold

The EUTs, in the same setup of the last test. Have been subjected to the following steps in accordance to UNI EN 12368 tabel 11 Temperature range"-Class A and to EN 60068-2-1; Cold

Phase	Description	Time	Operating status	Note
1	Transtition from ambient(25℃) to T=-15℃	30	Not Operating	
2	Isotherm at T=-15℃	960	Not Operating	Operating in the last hour
3	Transition from T= -15℃ to ambient temperature	30	Not Operating	
4	Isotherm at ambient temperature	60	Not Operating	

The graph below shows the recording of temperature values acquired during the whole test by means of the minidatalogger with 1 minute interal

5.4 Damp heat cyclic

The EUTs, In the same setup of the last test, have been subjected to the following steps in accordance to UNI EN 12368 Table 11 Temperature range-Class A and to EN 60068-2-30 'Damp heat , cyclic –test Db- variant 2'

Phase	Description	Time	Operating status	Note
1	Transtition from ambient(25℃ to T=40℃	180	Not Operating	
2	Isotherm at T=40℃	540	Not Operating	
3	Transition from T= 40℃ to ambient temperature	360	Not Operating	Operating in the last 1 hour
4	Isotherm at ambient temperature	360	Not Operating	

6. Test Results

The results of the classification for the signal heads, under test in accordance with standard UNIEN 12368:2015 are given in the following tables.

EUT	300mm full ball traffic signal light	
Test	Performance parameter	Requirement
Ingress (water penetration and dust)	IP65 (module) IP55 (aspects)	Pass
Temperature range (Dry heat, cold , and damp heat cylic)	Class A	Pass

Photos

Photo 1 View: [√] front [ ] rear [ ] right side [ ] left side [ ] top [ ] bottom [ ] internal	
Photo 2 View: [√] front [ ] rear [ ] right side [ ] left side [ ] top [ ] bottom [ ] internal	

Photo 3 View: [ ] front [√] rear [ ] right side [ ] left side [ ] top [ ] bottom [ ] internal	
Photo 4 View: [ ] front [ ] rear [ ] right side [ ] left side [ ] top [√] bottom [ ] internal	

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