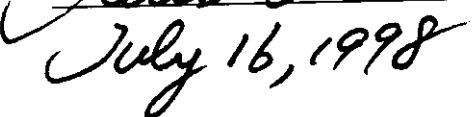


Report No.	N0618676
Specifications	FCC Part 18 - Certification
Test Method	ANSI C63.4 1992
Applicant address	FLAT 4, 11/F, EMPIRE CENTRE, 68 MODY ROAD, TST EAST, KOWLOON, HONG KONG.
Applicant	NEONLITE ELECTRONIC & LIGHTING (HK) LTD.
Items tested	ENERGY SAVING LAMP
Model No.	K209, K211, K215, W309, W311, W315 (Sample # N06676)
Results	As detailed within this report
Sample received date	07 / 07 / 1998 (month / day / year)
Prepared by	 project engineer
Authorized by	 Vice General Manager (Jacob Lin)
Issue date	 (month / day / year) July 16, 1998
Modifications	None
Tested by	Training Research Co., Ltd.
Office and	No. 15, Lane 530, Pa-Lian RD., Sec. 1, His-Chih Town
Open site at	Taipei Hsien, Taiwan, R.O.C.

**Conditions of issue:**

- (1) This test report shall not be reproduced except in full, without written approval of TRC. And the test result contained within this report only relate to the sample submitted for testing.
- (2) This report must not be used by the client to claim product endorsement by NVLAP or any agency of U.S. Government.

★ FCC ID : L2ALC60915

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## ***Chapter 1 Introduction***

### ***Description of EUT :***

These products are energy saving lamp . There are three EUTs in 9W, 11W and 15W separately tested in this report .Each lamp is provided with an Edison medium type lamp base for connection to a 110-120v AC source of supply through medium base lampholder .

\*\*\*P.S. : Model No. : K2XX, W3XX, XX means W . For example , K209 means 9W .

### ***Connection of EUT :***

- (1)Plug the EUT in the lamp set .
- (2)Connect the power cord to 110Vac source.

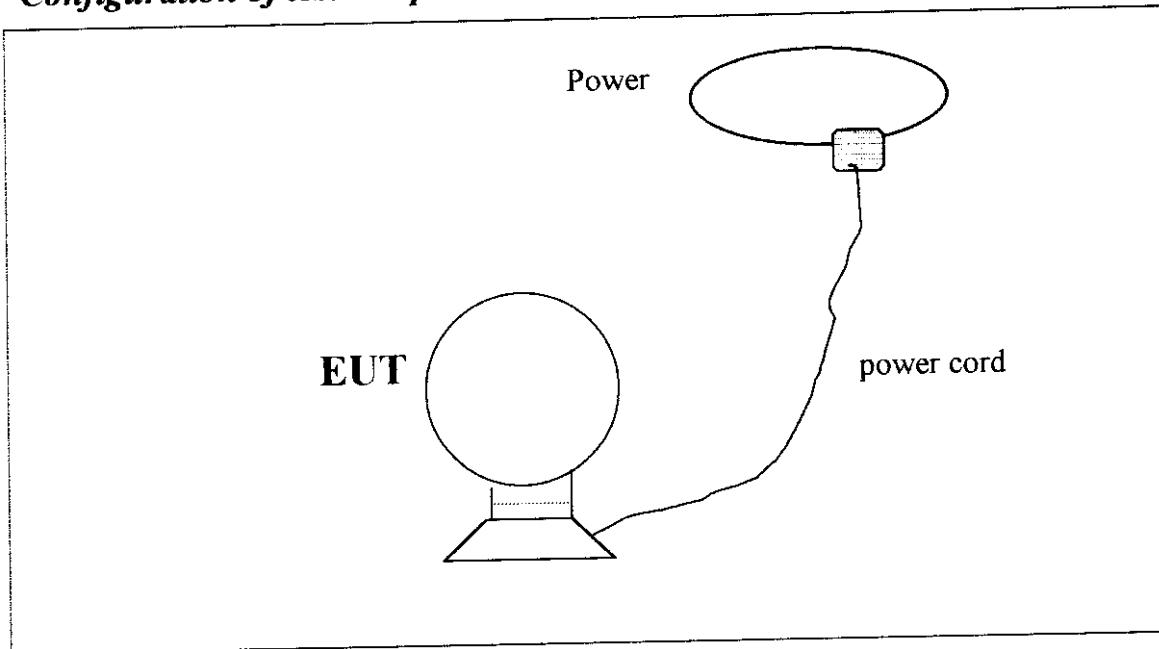
### ***Test method :***

Plug the power cord and make the lamp lights-up.

(If the emission is close to the ambience, the resolution BW and view resolution will be reduced and the data will be recorded by detection of maximum hold peak mode.)

***The testing configuration of test setup is shown on the next page.***

*Configuration of test setup*



**Connections :**

- \* The power cord 175 cm long, non-shielded.

## *Chapter 2    Conducted emission test*

### ***Test condition and set up :***

All the equipment is placed and setup according to the ANSI C63.4 - 1992 .  
The EUT is assembled on a wooden table which is 80 cm high , is placed 40 cm from the back-wall which is a vertical conducting plane . One LISN is for EUT ,the other LISN is for support equipment. They are all placed on the conductive ground .The EUT's LISN connect a line switch box for selecting L1 or L2 ,then connect to a preamplifier and spectrum.

The spectrum scans from 450KHz to 30MHz . Conducted emission levels are detected at max. peak mode . But if the max. peak mode failed ,it will be measured by CISPR's quasi-peak detection mode .

While testing, there is a the worst-emission plot printed at peak detection mode ,and there are more than 6 highest emissions relative to limit recorded. The plot is kept as the original data, not included in test report .

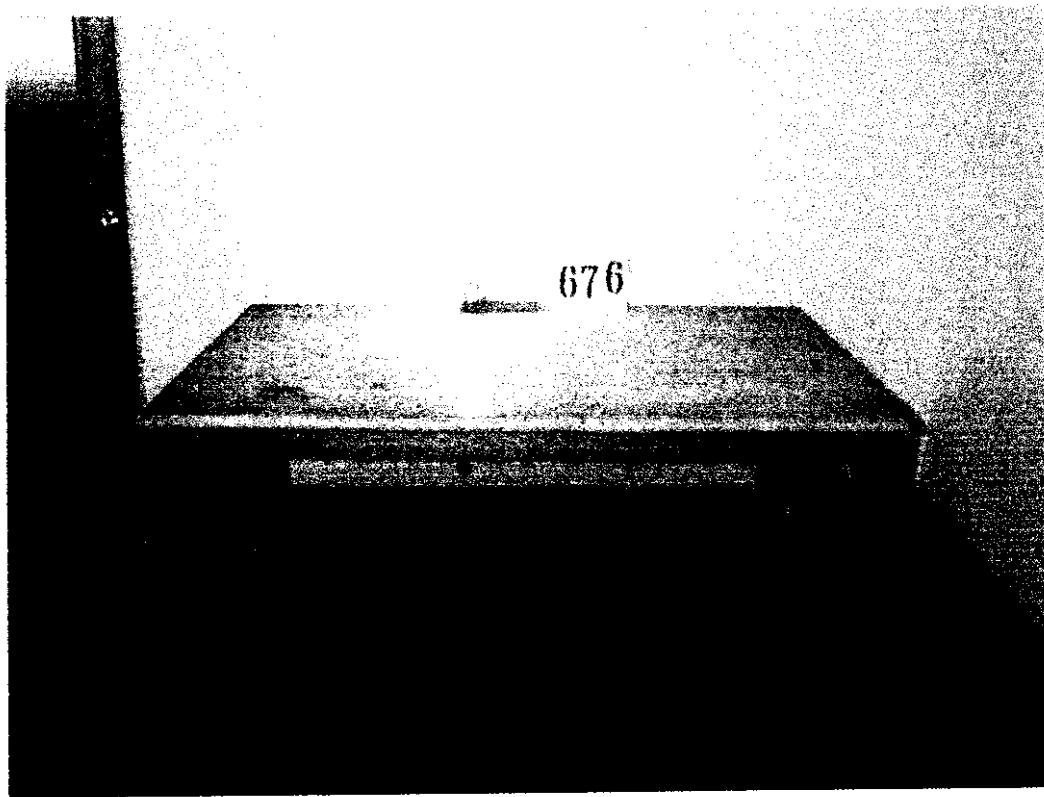
### ***List of test Instrument :***

<u>Instrument Name</u>	<u>Model No.</u>	<u>Brand</u>	<u>Serial No.</u>	<u>Calibration Date</u>	
				<u>Last time</u>	<u>Next time</u>
Spectrum analyzer	8591EM	H P	3619A00821	08/29/97	08/29/98
LISN (EUT)	3825/2	EMCO	9411-2284	05/15/98	05/15/99
Preamplifier	8447F	H P	2944A03706	05/13/98	05/15/99
Line switch box	AC1-003	TRC	-----	05/15/98	05/15/99
Line selector	AC1-002	TRC	-----	05/15/98	05/15/99

The level of confidence of 95% .the uncertainty of measurement of conducted emission is  $\pm 2.4$  dB .

### **Test Result : Pass (Appendix A)**

**Conducted Test Placement : (Photographs)**



P/S : Because the space is not large enough for taking photograph of rear side . Please refer to the radiated testing setup .

## ***Chapter 3 Radiated emission test***

### ***Test condition and setup :***

**Pretest :** Prior to the final test (OATS test) ,the EUT is placed in a shielded enclosure ,GTEM, and scan from 30MHz to 1GHz.This is done to ensure the radiation is exactly emitted from the EUT.

**Final test :** Final radiation measurements is made on a open-field test site. The EUT is placed on a nonconductive table which is 0.8 m height, the top surface is 1.0 x 1.5 meter. All the placement is according to ANSI C63.4 - 1992.

The spectrum is examined from 30 MHz to 1000 MHz measured by HP spectrum.

The EMCO whole range Antenna is used to measure frequency from 30 MHz to 1GHz.The final test is used the spectrum HP 8594EM .

Measure more than six top marked frequencies generated form pretest by computer step by step at each frequency . The EUT is rotated 360 degrees, and antenna is raised and lowered from 1 to 4 meter to find the maximum emission levels. The antenna is used with both horizontal and vertical polarization.

Appropriated preamplifier which is made by TRC is used for improving sensitivity and precautions is taken to avoid overloading .The spectrum analyzer's 6dB bandwidth is set to 120 K Hz , and the EUT is measured at quasi-peak mode.

If the emission is close to the frequency band of ambience ,the data will be rechecked by the tester and the corrected data will be written in the test data sheet. If the emission is just within the ambience ,the data from GTEM will be taken as the final data.

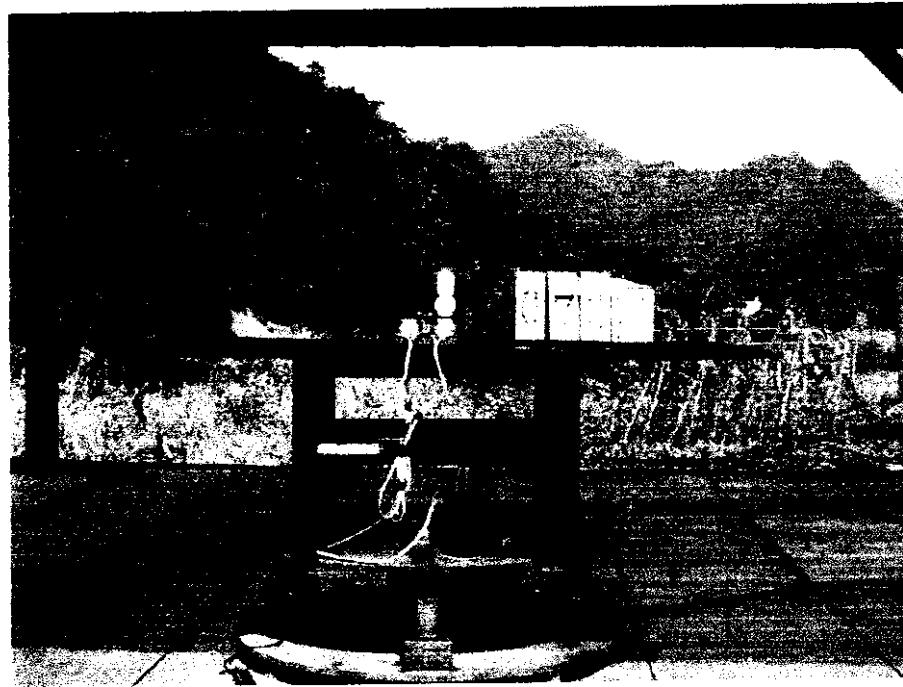
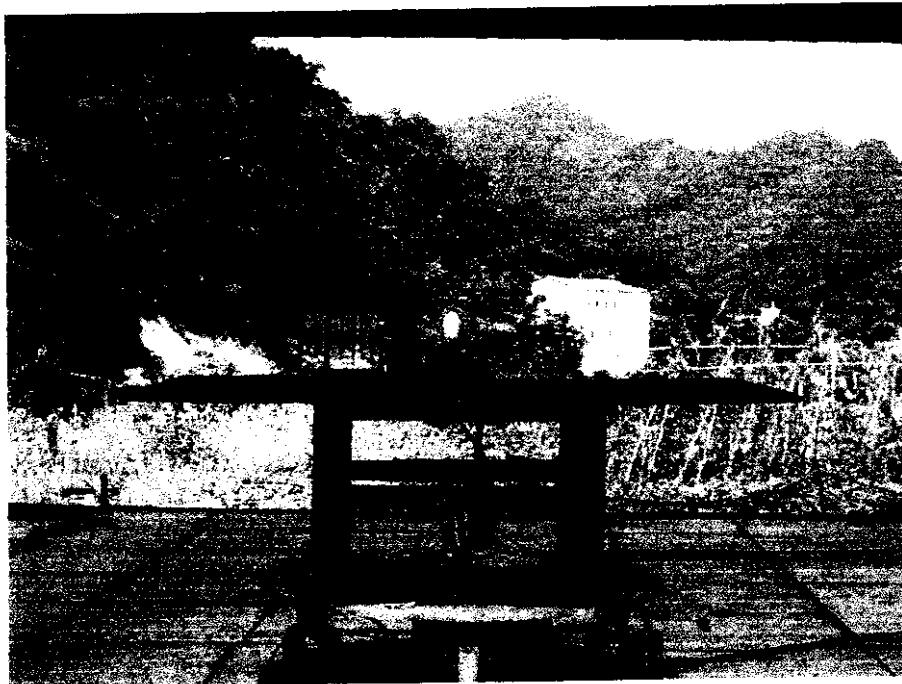
### ***List of test Instrument :***

<u>Instrument name</u>	<u>Model No.</u>	<u>Brand</u>	<u>Serial No.</u>	<u>Calibration Date</u>	<u>Next</u>
Spectrum analyzer	8568B	H P	3004A18617	05/15/98	05/15/99
Quasi-peak Adapter	85650A	H P	2521A00984	05/15/98	05/15/99
RF Pre-selector	85685A	H P	2947A01011	05/15/98	05/15/99
Spectrum analyzer	8594EM	H P	3619A00198	08/07/97	08/07/98
Antenna(30M-2G Hz)	3142	EMCO	9610-1094	10/30/97	10/30/98
Open test side (Antenna ,Amplify, cable calibrated together )				05/15/98	05/15/99

The level of confidence of 95% ,the uncertainty of measurement of radiated emission is  $\pm 4.96$  dB .

### **Test Result : Pass (All emissions are under limit 20dB)**

*Radiated Test Placement : (Photographs)*



## **Appendix A**

### **Conducted Emission Test Result : (K209, W309 )**

Testing room : Temperature : 23 ° C      Humidity : 50 % RH

#### **Line 1**

<b>Frequency (MHz)</b>	<b>Amplitude (dBuV)</b>	<b>Limit (dBuV/m)</b>	<b>Margin (dB)</b>
0.451	33.65	48	-14.35
1.340	23.83	48	-24.17
2.969	23.23	48	-24.77
3.930	25.63	48	-22.37
4.596	26.54	48	-21.46
4.965	25.19	48	-22.81
5.704	22.74	48	-25.26
25.541	19.45	48	-28.55
28.169	29.43	48	-18.57
29.774	20.67	48	-27.33

#### **Line 2**

<b>Frequency (MHz)</b>	<b>Amplitude (dBuV)</b>	<b>Limit (dBuV)</b>	<b>Margin (dB)</b>
0.451	35.88	48	-12.12
1.192	23.98	48	-24.02
2.229	23.61	48	-24.39
3.191	23.55	48	-24.45
4.743	25.52	48	-22.48
4.891	26.71	48	-21.29
5.778	22.14	48	-25.86
13.077	15.92	48	-32.08
28.169	26.91	48	-21.09

**Conducted Emission Test Result : ( K211,W311 )****Line 1**

<b>Frequency (MHz)</b>	<b>Amplitude (dBuV)</b>	<b>Limit (dBuV/m)</b>	<b>Margin (dB)</b>
0.451	33.77	48	-14.23
1.192	26.42	48	-21.58
3.117	24.64	48	-23.36
3.930	26.68	48	-21.32
4.522	27.97	48	-20.03
4.965	25.61	48	-22.39
5.704	22.44	48	-25.56
7.255	19.41	48	-28.59
9.320	19.18	48	-28.82
28.169	30.76	48	-17.24

**Line 2**

<b>Frequency (MHz)</b>	<b>Amplitude (dBuV)</b>	<b>Limit (dBuV)</b>	<b>Margin (dB)</b>
0.525	32.59	48	-15.41
1.562	25.58	48	-22.42
2.081	24.08	48	-23.92
3.856	26.14	48	-21.86
4.965	27.37	48	-20.63
5.778	20.62	48	-27.38
6.590	19.17	48	-28.83
9.763	17.70	48	-30.30
28.169	26.77	48	-21.23

**Conducted Emission Test Result : ( K215, W315 )****Line 1**

<b>Frequency (MHz)</b>	<b>Amplitude (dBuV)</b>	<b>Limit (dBuV/m)</b>	<b>Margin (dB)</b>
0.451	41.24	48	-6.76
1.266	31.33	48	-16.67
3.339	32.23	48	-15.77
3.412	32.57	48	-15.43
4.300	33.84	48	-14.16
4.965	33.13	48	-14.87
6.000	24.27	48	-23.73
7.476	22.55	48	-25.45
28.096	29.91	48	-18.09
29.190	22.48	48	-25.52

**Line 2**

<b>Frequency (MHz)</b>	<b>Amplitude (dBuV)</b>	<b>Limit (dBuV)</b>	<b>Margin (dB)</b>
0.599	40.73	48	-7.27
1.266	32.10	48	-15.90
3.339	28.57	48	-19.43
3.708	30.82	48	-17.18
4.300	31.82	48	-16.18
5.482	27.85	48	-20.15
6.664	23.07	48	-24.93
7.550	21.32	48	-26.68
28.096	26.73	48	-21.27
29.774	23.46	48	-24.54

**Final statement :**

*This test report, measurements made by TRC are traceable to the NIST.*