



1 Test Summary

EMISSION				
Test Item	Test Standard	Class / Severity	Result	
Mains Terminal Disturbance Voltage, 9kHz to 30MHz	EN 55015:2013	Clause 4.3.1	Pass	
Radiated electromagnetic disturbance, 9kHz to 30MHz	EN 55015:2013	Clause 4.4.1	Pass	
Radiated Emission, 30MHz to 300MHz	EN 55015:2013	Clause 4.4.2	Pass	
Harmonic Current emission	EN 61000-3-2:2006+A1:2009+A2:2009	Class C	Pass	
Voltage Fluctuation and Flicker	EN61000-3-3:2013	Clause 5	Pass**	
IMMUNITY (EN61547:2009)				
Test Item	Test Method	Class / Severity	Performance Criteria	Result
Electrostatic Discharge(ESD)	IEC 61000-4-2:2008	±4 kV Contact ±8 kV Air	B	Pass
Radio-frequency electromagnetic fields (80MHz to 1GHz)	IEC 61000-4-3:2010	3V/m, 80%, 1kHz, Amp. Mod.	A	Pass
Electrical Fast Transients (EFT)	IEC 61000-4-4:2012	AC ±1.0kV DC ±0.5kV	B	Pass
Surge	IEC 61000-4-5:2005	±0.5kV D.M.† ±2kV C.M.‡	C	Pass
Injected Currents, 0.15MHz to 80MHz	IEC 61000-4-6:2013	3Vr.m.s.(emf), 80%, 1kHz Amp. Mod.	A	Pass
Power-frequency magnetic field	IEC 61000-4-8:2009	3A/m	A	N/A
Voltage Dips and Interruptions	IEC 61000-4-11:2004	0 % UT* for 0.5per	B	Pass
		70 % UT* for 10per	C	Pass

Remark:

Pass

Test item meets the requirement

Fail

Test item does not meet the requirement

N/A

Test case does not apply to the test object

A.M

Amplitude Modulation

†

Differential Mode

‡

Common Mode

*

U_T is the nominal supply voltage

**

According to EN61000-3-3 which states: "Pst and Plt evaluations are required only for lighting equipment which is likely to produce flicker; for example: disco lighting and automatically regulated equipment." Incandescent lamp luminaires with ratings less than or equal to 1 000 W and discharge lamp luminaires with ratings less than or equal to 600 W, are deemed to comply with the dmax limits in this standard and are not required to be tested."



2 Contents

	Page
COVER PAGE	1
1 TEST SUMMARY	2
2 CONTENTS	3
3 GENERAL INFORMATION	5
3.1 GENERAL DESCRIPTION OF E.U.T.	5
3.2 DETAILS OF E.U.T.	5
3.3 DESCRIPTION OF SUPPORT UNITS	5
3.4 STANDARDS APPLICABLE FOR TESTING.....	5
3.5 TEST FACILITY.....	6
3.6 SUBCONTRACTED.....	6
3.7 ABNORMALITIES FROM STANDARD CONDITIONS.....	6
4 EQUIPMENT USED DURING TEST	7
4.1 MEASUREMENT UNCERTAINTY	8
5 EMISSION TEST RESULTS	9
5.1 MAINS TERMINALS DISTURBANCE VOLTAGE, 9KHZ TO 30MHZ.....	9
5.1.1 <i>E.U.T. Operation</i>	9
5.1.2 <i>Block Diagram of Test Setup</i>	9
5.1.3 <i>Measurement Data</i>	10
5.1.4 <i>Mains Terminals Disturbance Voltage Test Data</i>	10
5.2 RADIATED ELECTROMAGNETIC DISTURBANCE, 9KHZ TO 30MHZ.....	12
5.2.1 <i>E.U.T. Operation</i>	12
5.2.2 <i>Block Diagram of Test Setup</i>	13
5.2.3 <i>Measurement Data</i>	13
5.2.4 <i>Radiated Electromagnetic Disturbance test data, 9kHz to 30MHz</i>	14
5.3 RADIATED EMISSION, 30MHZ TO 300MHZ.....	17
5.3.1 <i>E.U.T. Operation</i>	17
5.3.2 <i>Block Diagram of Setup</i>	17
5.3.3 <i>Measurement Data</i>	17
5.3.4 <i>Radiated Emission test data, 30MHz to 300MHz</i>	18
5.4 HARMONICS CURRENT EMISSION.....	19
5.4.1 <i>E.U.T. Operation</i>	19
5.4.2 <i>Block Diagram of Setup</i>	19
5.4.3 <i>Harmonic Current Emission Test Data</i>	20
6 IMMUNITY TEST RESULTS	23
6.1 PERFORMANCE CRITERIA	23
6.2 ELECTROSTATIC DISCHARGE (ESD).....	23
6.2.1 <i>E.U.T. Operation</i>	24
6.2.2 <i>Block Diagram of Setup</i>	24
6.2.3 <i>Direct Discharge Test Results</i>	25
6.2.4 <i>Indirect Discharge Test Results</i>	25
6.3 RADIO-FREQUENCY ELECTROMAGNETIC FIELDS, 80MHZ TO 1GHZ	25
6.3.1 <i>E.U.T. Operation</i>	26
6.3.2 <i>Block Diagram of Setup</i>	26
6.3.3 <i>Test Results</i>	27
6.4 ELECTRICAL FAST TRANSIENTS (EFT)	27
6.4.1 <i>E.U.T. Operation</i>	27
6.4.2 <i>Block Diagram of Setup</i>	28
6.4.3 <i>Test Results</i>	28
6.5 SURGE.....	29



6.5.1	<i>E.U.T. Operation</i>	29
6.5.2	<i>Block Diagram of Setup</i>	29
6.5.3	<i>Test Results</i>	30
6.6	INJECTED CURRENTS IMMUNITY 0.15MHZ TO 80MHZ.....	30
6.6.1	<i>E.U.T. Operation</i>	30
6.6.2	<i>Block Diagram of Setup</i>	31
6.6.3	<i>Test Results</i>	31
6.7	VOLTAGE DIPS AND INTERRUPTIONS	32
6.7.1	<i>E.U.T. Operation</i>	32
6.7.2	<i>Block Diagram of Setup</i>	32
6.7.3	<i>Test Results</i>	33
7	PHOTOGRAPHS – TEST SETUP	34
7.1	PHOTOGRAPH – MAINS TERMINAL DISTURBANCE VOLTAGE TEST SETUP.....	34
7.2	PHOTOGRAPH – RADIATED ELECTROMAGNETIC DISTURBANCE TEST SETUP, 9KHZ TO 30MHZ.....	34
7.3	PHOTOGRAPH – RADIATED EMISSION(CDN METHOD) TEST SETUP, 30MHZ TO 300MHZ.....	35
7.4	PHOTOGRAPH – HARMONIC CURRENT AND VOLTAGE FLUCTUATION AND FLICKER TEST SETUP.....	35
7.5	PHOTOGRAPH – ESD IMMUNITY TEST SETUP.....	36
7.6	PHOTOGRAPH – RADIO-FREQUENCY ELECTROMAGNETIC FIELDS IMMUNITY TEST SETUP.....	36
7.7	PHOTOGRAPH – EFT IMMUNITY TEST SETUP.....	37
7.8	PHOTOGRAPH – SURGE IMMUNITY TEST SETUP	37
7.9	PHOTOGRAPH – INJECTED CURRENTS IMMUNITY TEST SETUP.....	38
7.10	PHOTOGRAPH – VOLTAGE DIPS AND INTERRUPTIONS IMMUNITY TEST SETUP.....	38
8	PHOTOGRAPHS – CONSTRUCTIONAL DETAILS.....	39
8.1	EUT – FRONT VIEW.....	39
8.2	EUT – BACK VIEW.....	39

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3 General Information

3.1 General Description of E.U.T.

Product Name : Pendant lamp
Model No. : P50626(37660001)
Remark..... : ---

3.2 Details of E.U.T.

Technical Data..... : AC 220-240V, 50/60Hz, 6*LED 4.5W

3.3 Description of Support Units

The EUT has been tested as an independent unit. P50626(37660001) is the test sample. The DV&RE tests were performed in the condition of AC245V/50Hz input. The other tests were performed in the condition of AC230V/50Hz input.

3.4 Standards Applicable for Testing

The tests were performed according to following standards:

EN 55015:2013	Limits and methods of measurement of radio disturbance characteristics of electrical lighting and similar equipment
EN 61547:2009	Equipment for general lighting purposes — EMC immunity requirements
EN 61000-3-2:2006 +A1:2009+A2:2009	Electromagnetic compatibility (EMC) -- Part 3-2: Limits - Limits for harmonic current emissions (equipment input current up to and including 16 A per phase).
EN 61000-3-3:2013	Electromagnetic compatibility (EMC) -- Part 3-3: Limits - Limitation of voltage changes, voltage fluctuations and flicker in public low-voltage supply systems, for equipment with rated current ≤ 16 A per phase and not subject to conditional connection.



3.5 Test Facility

The test facility has a test site registered with the following organizations:

- **IC – Registration No.: 7760A**

Waltek Services (Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the Industry Canada. The acceptance letter from the Industry Canada is maintained in our files. Registration 7760A, August 03, 2010.

- **FCC – Registration No.: 880581**

Waltek Services (Shenzhen) Co., Ltd. has been registered and fully described in a report filed with the (FCC) Federal Communications Commission. The acceptance letter from the FCC is maintained in our files. Registration 880581, May 26, 2011.

3.6 Subcontracted

Whether parts of tests for the product have been subcontracted to other labs:

Yes No

If Yes, list the related test items and lab information:

Test items: Radiated Immunity (80MHz to 1GHz)

Lab information: Waltek Services (Shenzhen) Co., Ltd.

3.7 Abnormalities from Standard Conditions

None.



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4 Equipment Used during Test

Mains Terminal Disturbance Voltage (Conducted Emission)					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	EMI Test Receiver	R&S	ESCI	101178	Valid
2.	LISN	R&S	ENV216	101215	Valid
3.	LISN	SCHWARZBECK	NSLK 8128	8128-289	Valid
4.	Cable	HUBER+SUHNER	CBL2-NN-3M	2230300	Valid
5.	Switch	ESE	RSU/M2	---	Valid
Radiated electromagnetic disturbance(9kHz to 30MHz)					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	EMI Test Receiver	R&S	ESCI	101178	Valid
2	Three Loops Antenna	SCHWARZBECK	HXYZ9170	213	Valid
Discontinuous Disturbance					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	Discontinues Disturbance Analyzer	TESEQ	DIA1512D	28302	Valid
2.	LISN	R&S	ENV216	101215	Valid
CDN method for Lighting Equipments' Radiated Disturbance					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1	EMI Test Receiver	R&S	ESCI	101178	Valid
2	CDN	TESEQ	M016	31586	Valid
3	Cable	HUBER+SUHNER	CBL2-NN-3M	2230300	Valid
Harmonics and Flicker Measuring System					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	Harmonics and Flicker Measuring System	TESEQ	PROFLINE210 5-400	1133A014 98	Valid
ESD					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	ESD Simulator	TESEQ	NSG437	521	Valid
Radio-frequency electromagnetic fields					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	RF Generator	R&S	SMB100A- B106	105942	Valid
2.	RF Power Amplifier	R&S	BLWA0830- 160/100/40D	128740	Valid
3.	Logarithmic periodic antenna	R&S	STLP9128D	043	Valid



4.	Dynamometer	R&S	NRP2-2*Z91	102031	Valid
EFT & Voltage Dips and Interruptions					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	EMS test system	TESEQ	NSG3040	0319	Valid
2.	Clamp	TESEQ	CDN8014	31405	Valid
Surge					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	Surge Simulator	TESEQ	NSG3060	1395	Valid
Injected Currents					
Item	Equipment	Manufacturer	Model No.	Serial No.	Calibration Status
1.	Conducted Immunity test system	TESEQ	NSG4070-75	31469	Valid
2.	CDN	TESEQ	M016	31586	Valid
3.	Clamp	TESEQ	KEMZ801	32362	Valid

4.1 Measurement Uncertainty

Test Item	Frequency Range	Uncertainty	Note
Mains Terminal Disturbance Voltage	150kHz~30MHz	±2.66dB	(1)
Radiated electromagnetic disturbance	9kHz to 30MHz	±3.00dB	(1)
Radiated Emission(CDN method)	30MHz~300MHz	±3.32dB	(1)
Radiated Emission	30MHz~300MHz	±5.03dB	(1)

(1) This uncertainty represents an expanded uncertainty expressed at approximately the 95% confidence level using a coverage factor of $k=2$.



5 Emission Test Results

5.1 Mains Terminals Disturbance Voltage, 9kHz to 30MHz

Test Requirement..... : EN 55015 Clause 4.3.1

Test Method..... : EN 55015 Clause 8

Test Result..... : Pass

Frequency Range..... : 9kHz to 30MHz

Class/Severity..... : Table 2a of EN55015

5.1.1 E.U.T. Operation

Operating Environment:

Temperature..... : 23.1°C

Humidity..... : 42.0%RH

Atmospheric Pressure..... : 101.2kPa

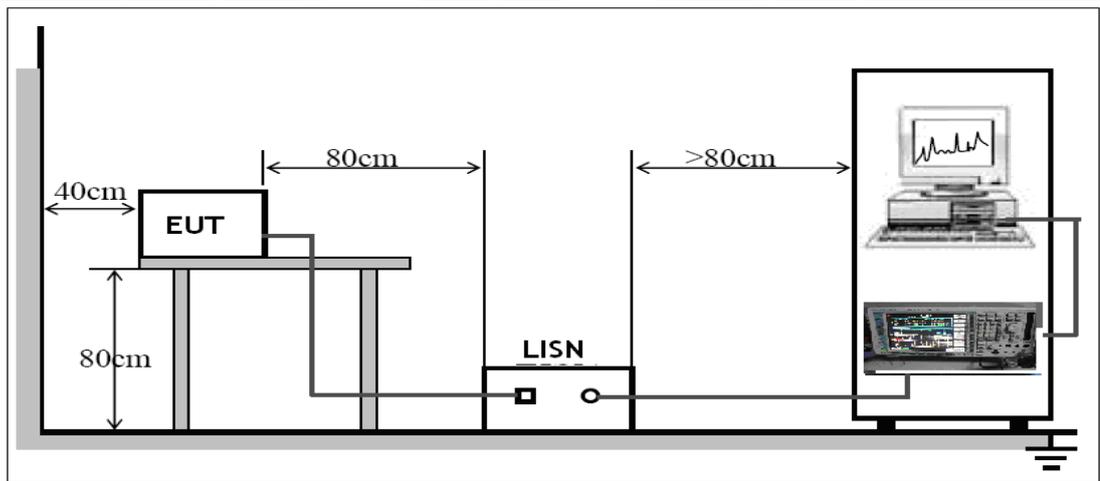
EUT Operation:

Input Voltage..... : AC 245V/50Hz

Operating Mode..... : On mode

5.1.2 Block Diagram of Test Setup

The Mains Terminals Disturbance Voltage tests were performed in accordance with the EN 55015.



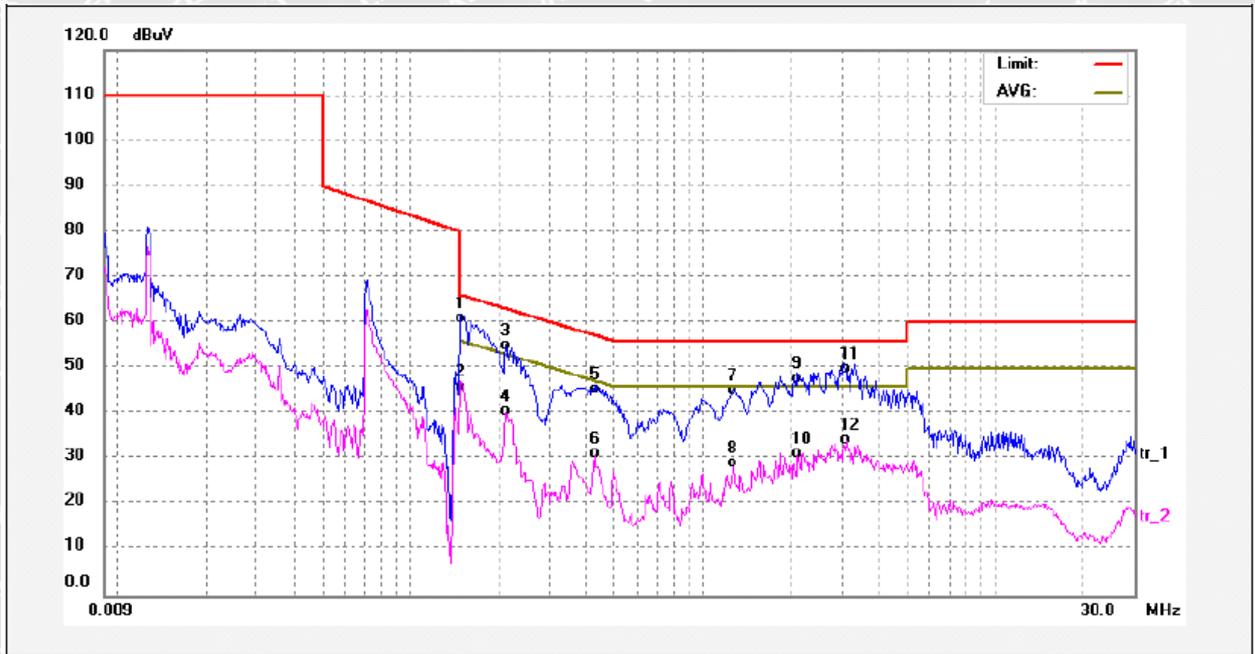


5.1.3 Measurement Data

The maximised peak emissions from the EUT was scanned and measured for both the Live and Neutral Lines. Quasi-peak & average measurements were performed if peak emissions were within 6dB of the average limit line.

5.1.4 Mains Terminals Disturbance Voltage Test Data

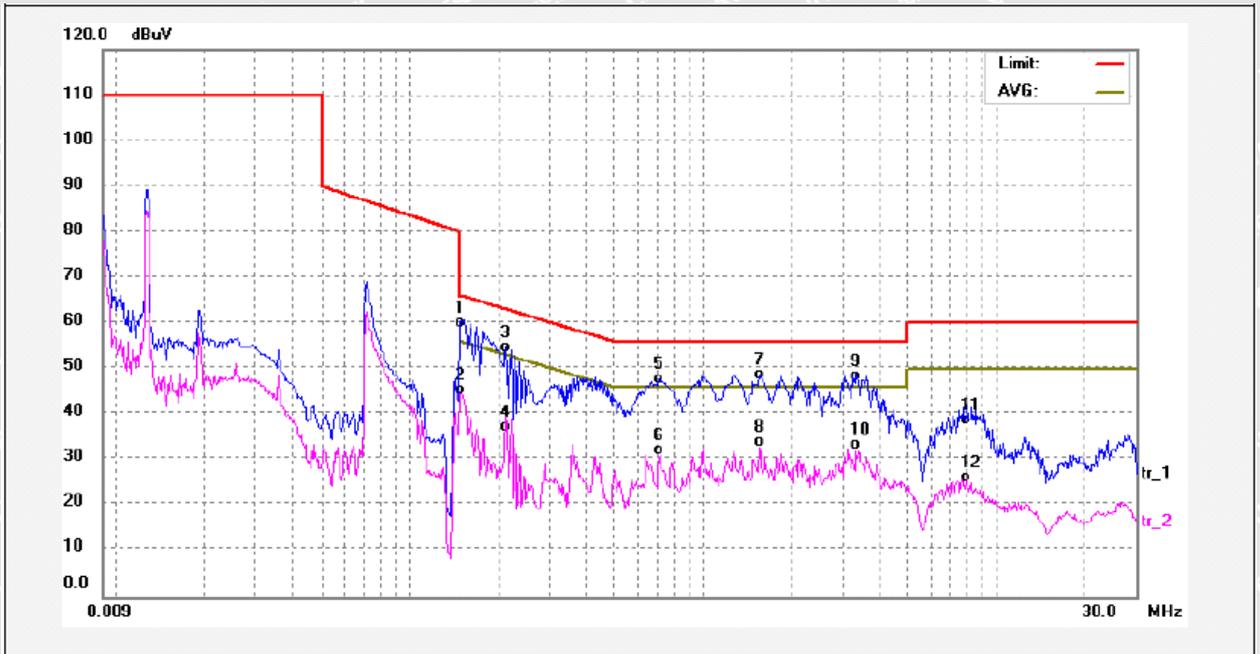
Live Line :



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1500	50.29	9.61	59.90	65.99	-6.09	QP	
2	0.1500	35.23	9.61	44.84	55.99	-11.15	AVG	
3	0.2140	44.18	9.62	53.80	63.04	-9.24	QP	
4	0.2140	29.76	9.62	39.38	53.04	-13.66	AVG	
5	0.4300	34.64	9.64	44.28	57.25	-12.97	QP	
6	0.4300	20.52	9.64	30.16	47.25	-17.09	AVG	
7	1.2780	34.22	9.66	43.88	56.00	-12.12	QP	
8	1.2780	18.48	9.66	28.14	46.00	-17.86	AVG	
9	2.1260	36.97	9.68	46.65	56.00	-9.35	QP	
10	2.1260	20.36	9.68	30.04	46.00	-15.96	AVG	
11	3.0540	39.20	9.70	48.90	56.00	-7.10	QP	
12	3.0540	23.55	9.70	33.25	46.00	-12.75	AVG	



Neutral Line :



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit dBuV	Margin (dB)	Detector	Remark
1	0.1502	49.33	9.61	58.94	65.98	-7.04	QP	
2	0.1502	34.52	9.61	44.13	55.98	-11.85	AVG	
3	0.2140	43.81	9.62	53.43	63.04	-9.61	QP	
4	0.2140	26.59	9.62	36.21	53.04	-16.83	AVG	
5	0.7100	36.91	9.64	46.55	56.00	-9.45	QP	
6	0.7100	21.43	9.64	31.07	46.00	-14.93	AVG	
7	1.5620	37.89	9.67	47.56	56.00	-8.44	QP	
8	1.5620	23.28	9.67	32.95	46.00	-13.05	AVG	
9	3.3420	37.68	9.70	47.38	56.00	-8.62	QP	
10	3.3420	22.44	9.70	32.14	46.00	-13.86	AVG	
11	8.0260	28.01	9.79	37.80	60.00	-22.20	QP	
12	8.0260	15.25	9.79	25.04	50.00	-24.96	AVG	



5.2 Radiated Electromagnetic Disturbance, 9kHz to 30MHz

Test Requirement.....	:	EN 55015 Clause 4.4.1
Test Method.....	:	EN 55015 Clause 9.1
Test Result.....	:	Pass
Frequency Range.....	:	9kHz to 30MHz
Class/Severity.....	:	Table 3a of EN55015

5.2.1 E.U.T. Operation

Operating Environment:

Temperature.....	:	23.1°C
Humidity.....	:	42.0%RH
Barometric Pressure.....	:	101.2kPa

EUT Operation:

Input Voltage.....	:	AC 245V/50Hz
Operating Mode.....	:	On mode

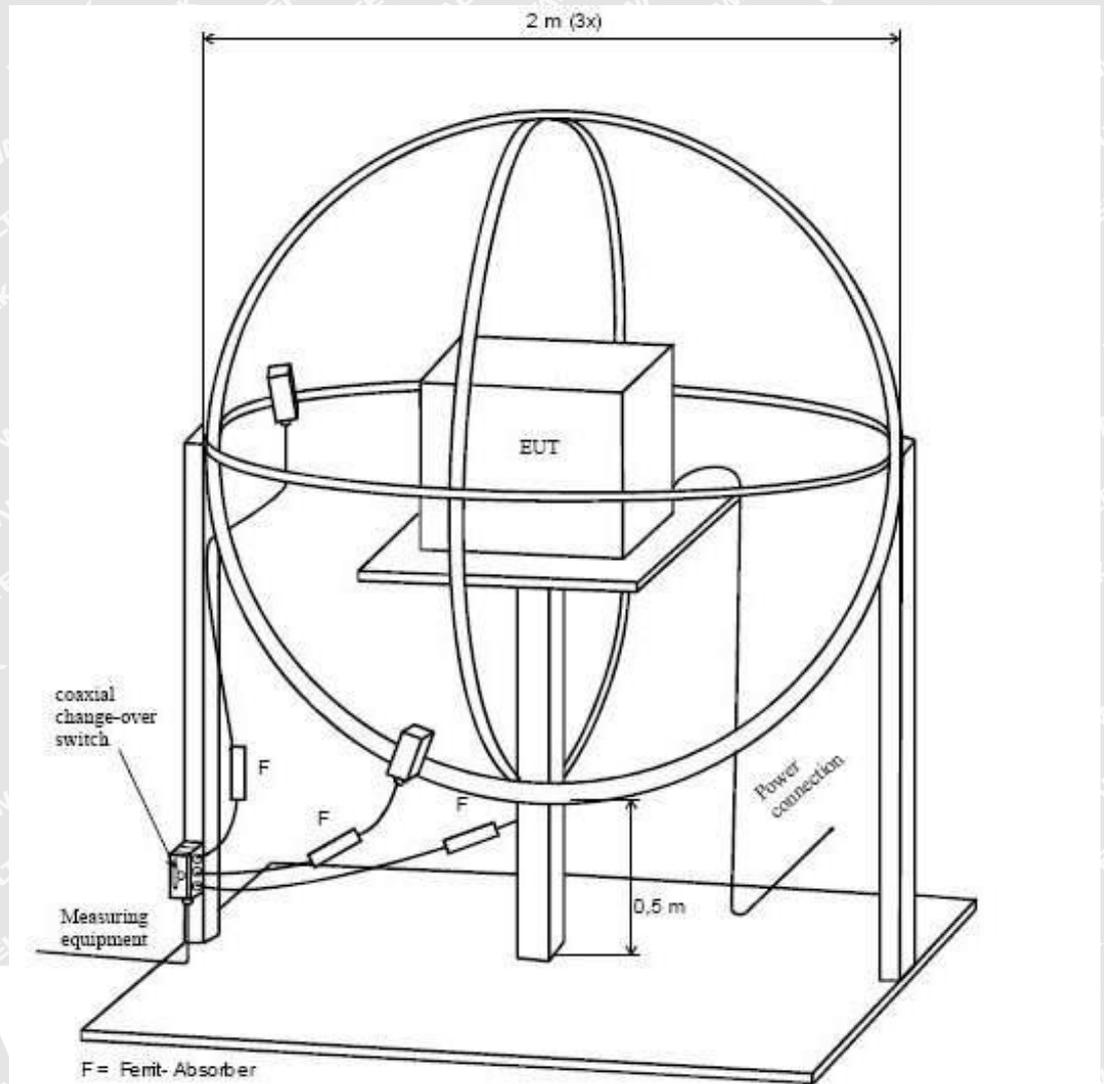


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5.2.2 Block Diagram of Test Setup

The Radiated Electromagnetic Disturbance (9kHz to 30MHz) test was performed in accordance with the EN 55015.



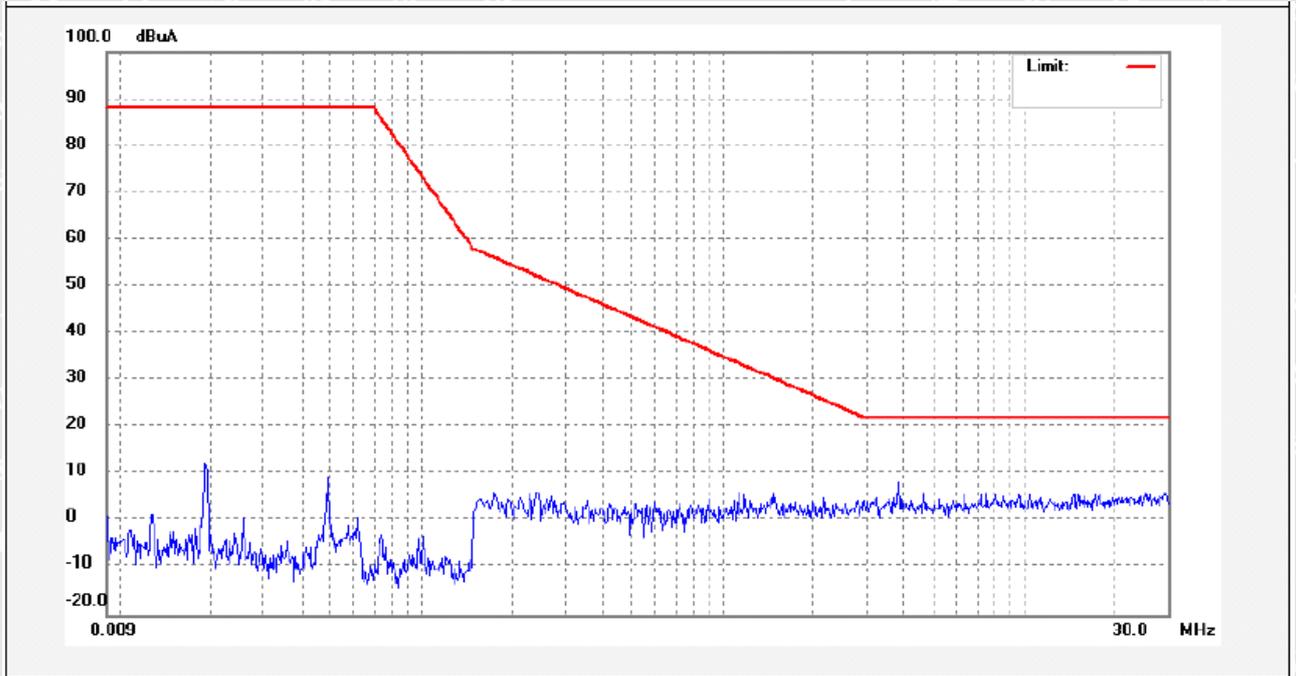
5.2.3 Measurement Data

According to the data in section 5.2.4, the EUT complied with the EN55015 standards.



5.2.4 Radiated Electromagnetic Disturbance test data, 9kHz to 30MHz

Loop X:

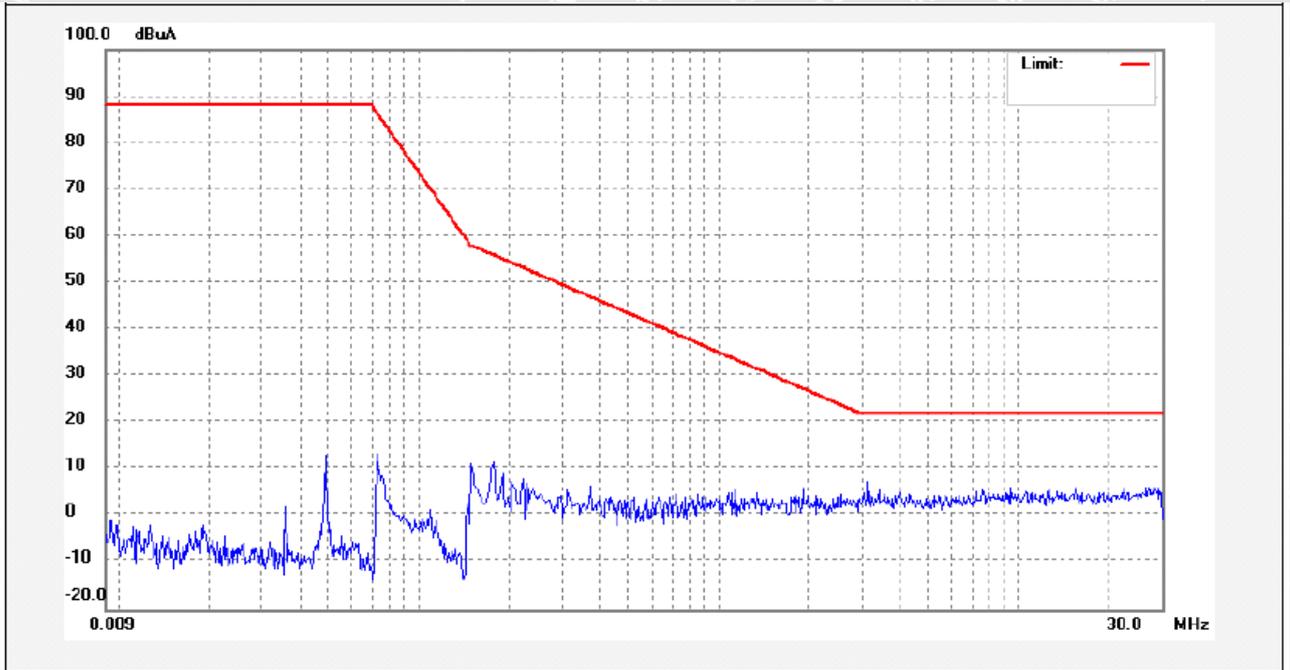


No.	Freq. (MHz)	Reading (dBuA)	Factor (dB)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector	Remark
	0.009				88			
	10				58			
	30				20			

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Loop Y:

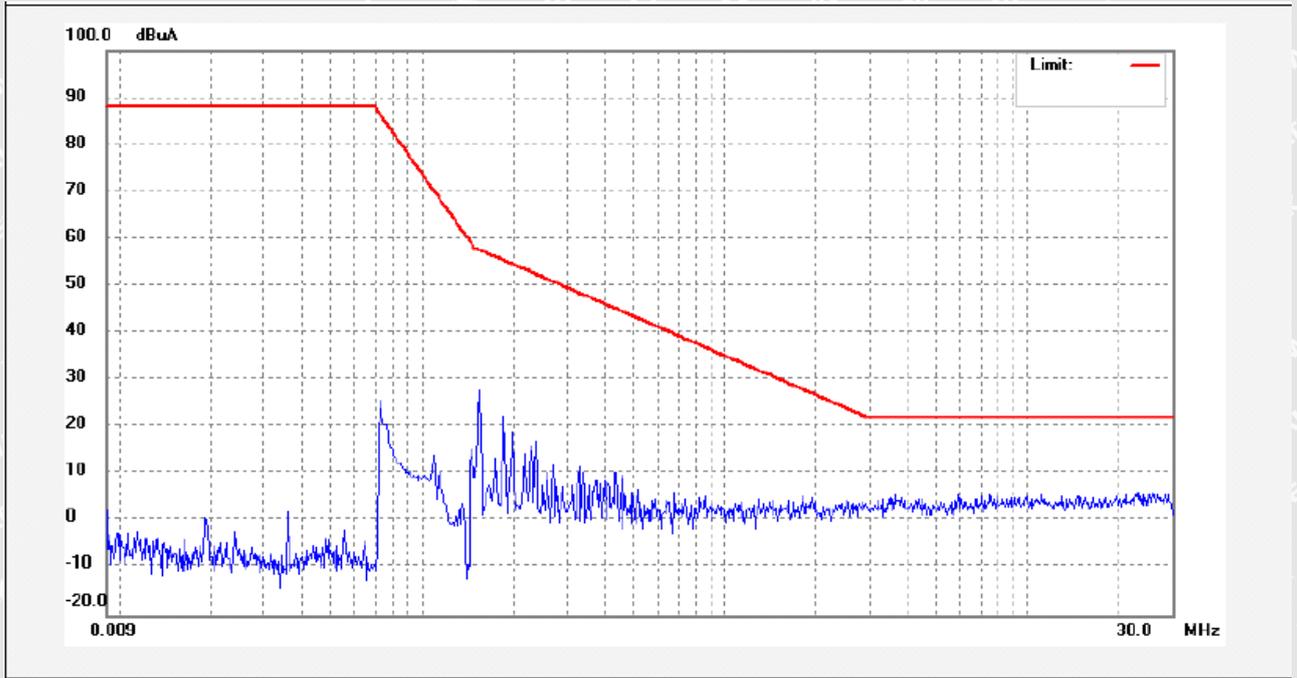


No.	Freq. (MHz)	Reading (dBuA)	Factor (dB)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector	Remark
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Loop Z:



No.	Freq. (MHz)	Reading (dBuA)	Factor (dB)	Result (dBuA)	Limit (dBuA)	Margin (dB)	Detector	Remark
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5.3 Radiated Emission, 30MHz to 300MHz

Test Requirement.....	: EN 55015 Clause 4.4.2
Test Method.....	: EN 55015 Annex B
Test Result.....	: Pass
Frequency Range.....	: 30MHz to 300MHz
Class/Severity.....	: Table B.1 of EN55015

5.3.1 E.U.T. Operation

Operating Environment:

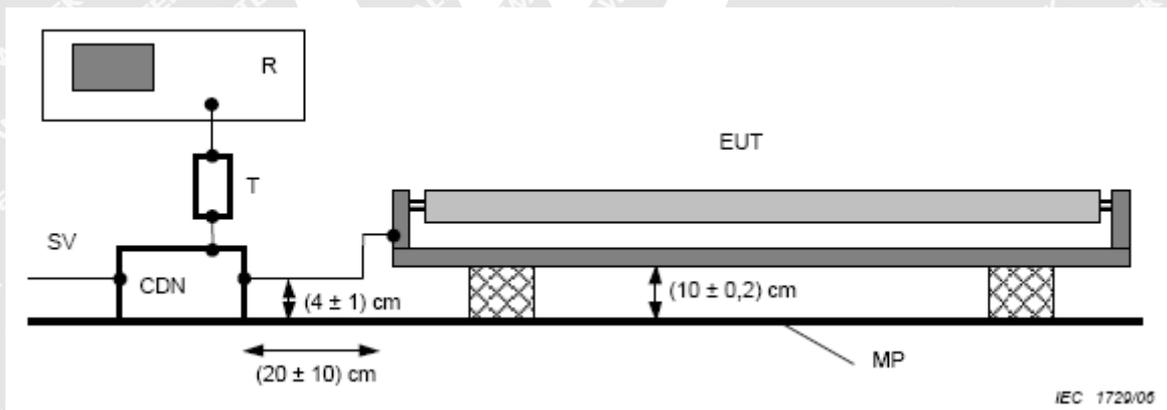
Temperature.....	: 23.1°C
Humidity.....	: 42.0%RH
Atmospheric Pressure.....	: 101.2kPa

EUT Operation :

Input Voltage.....	: AC 245V/50Hz
Operating Mode.....	: On mode

5.3.2 Block Diagram of Setup

The Radiated Emission test was performed in accordance with EN55015 Annex B.

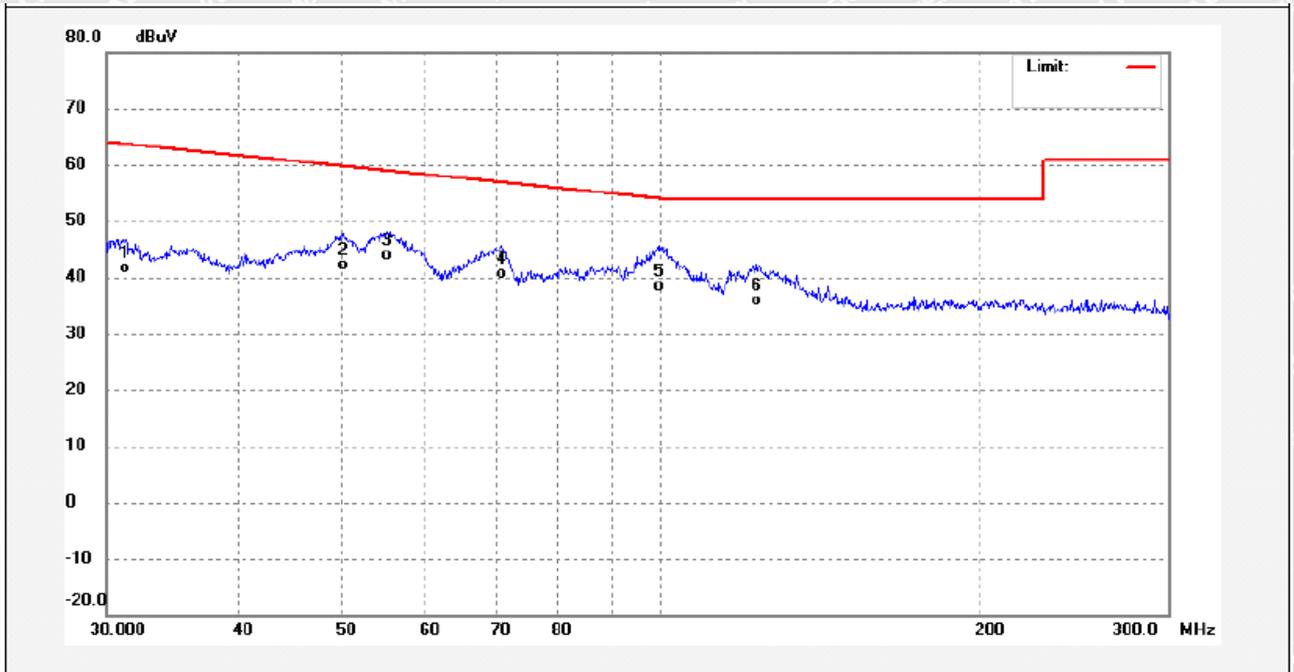


5.3.3 Measurement Data

If the lighting equipment complies with the requirements of this annex, it is deemed to comply with the radiated disturbances requirements in the frequency range 30 MHz to 300 MHz specified in 4.4.2 of this standard.



5.3.4 Radiated Emission test data,30MHz to 300MHz



No.	Freq. (MHz)	Reading (dBuV)	Factor (dB)	Result (dBuV)	Limit (dBuV)	Margin (dB)	Detector	Remark
1	31.3200	24.53	16.13	40.66	63.64	-22.98	QP	
2	50.2400	24.79	16.29	41.08	59.72	-18.64	QP	
3	55.2000	26.64	16.29	42.93	58.94	-16.01	QP	
4	70.8000	23.29	16.27	39.56	56.87	-17.31	QP	
5	99.5600	21.11	16.32	37.43	54.04	-16.61	QP	
6	123.0400	18.41	16.37	34.78	54.00	-19.22	QP	





5.4 Harmonics Current Emission

Test Requirement.....	:	EN61000-3-2
Test Method.....	:	EN61000-3-2
Test Result.....	:	Pass
Class/Severity.....	:	Class C

5.4.1 E.U.T. Operation

Operating Environment:

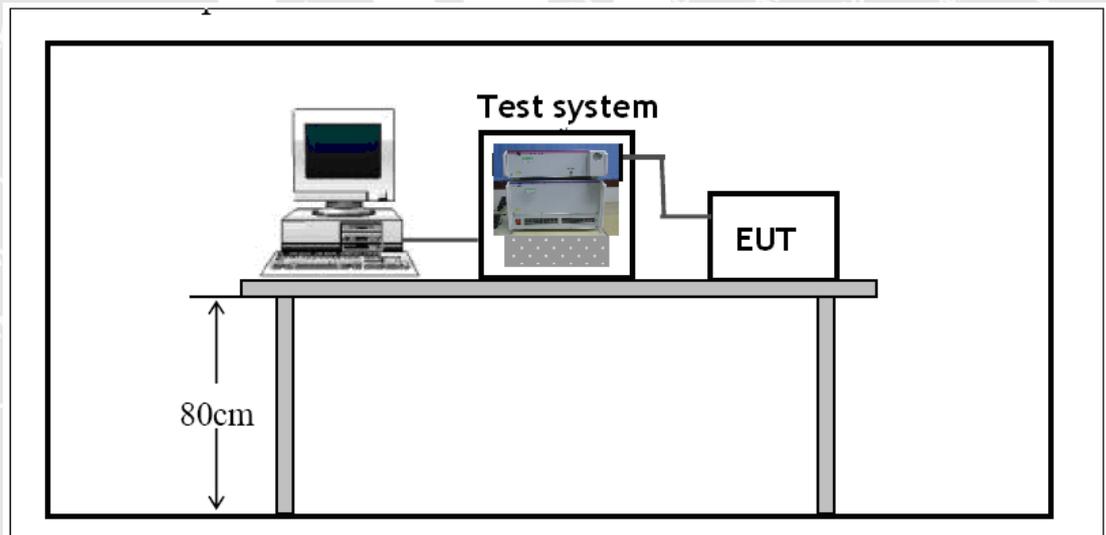
Temperature.....	:	23.1°C
Humidity.....	:	42.0%RH
Barometric Pressure.....	:	101.2kPa

EUT Operation:

Input Voltage.....	:	AC 230V/50Hz
Operating Mode.....	:	On mode

5.4.2 Block Diagram of Setup

The Harmonics Current emission test was performed in accordance with the EN 61000-3-2.





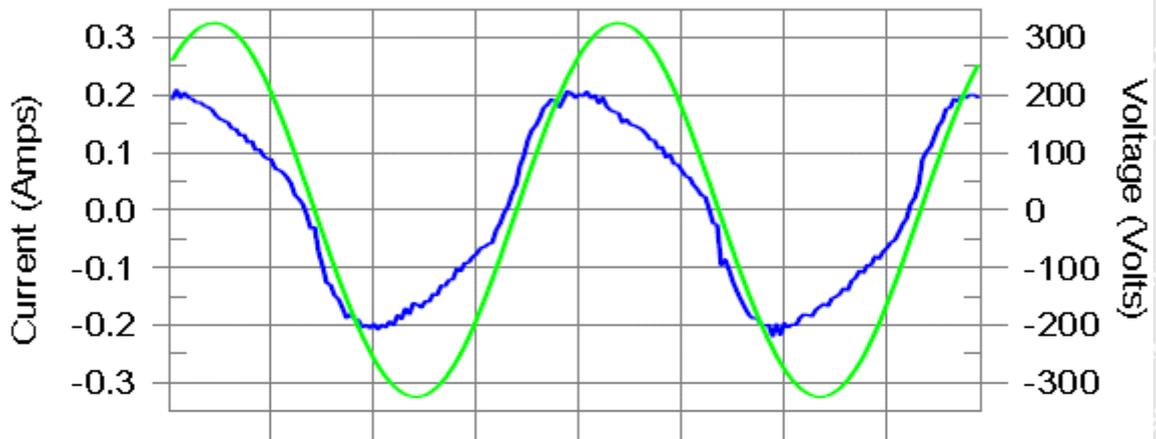
5.4.3 Harmonic Current Emission Test Data

Harmonics – Class-C per Ed. 3.2 (2009)(Run time) incl. inter-harmonics

EUT: pendant lamp P50626(37660001) (WTF14F0312225E) Tested by: Terry
 Test category: Class-C per Ed. 3.2 (2009) (European limits) Test Margin: 100
 Test date: 2014/4/3 Start time: 16:20:56 End time: 16:23:48
 Test duration (min): 2.5 Data file name: H-000632.cts_data
 Comment: on mode
 Customer: Guangzhou O'Ming ELECTRIC&MACHINING CO.,Ltd.

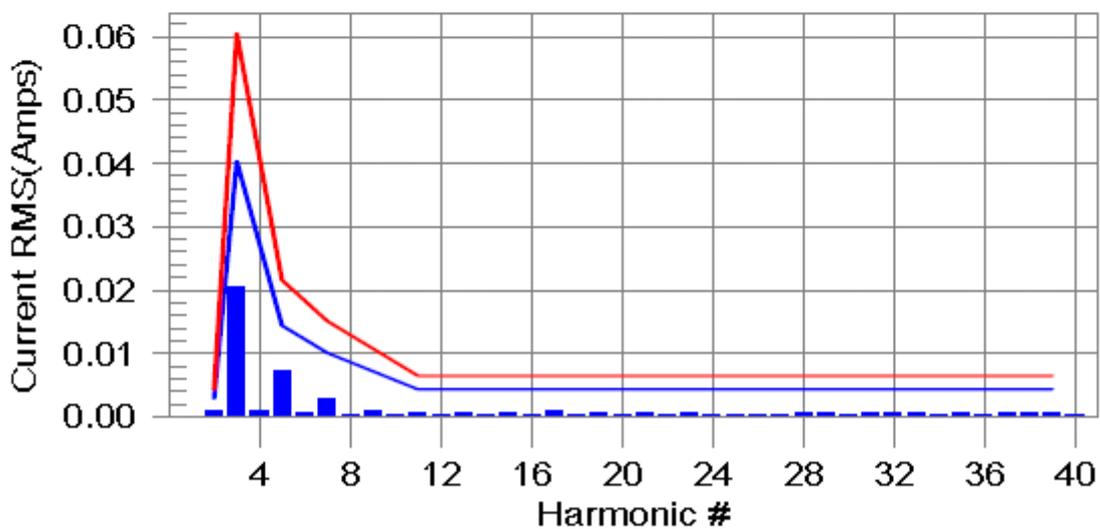
Test Result: Pass Source qualification: Normal

Current & voltage waveforms



Harmonics and Class C limit line

European Limits



Test result: Pass Worst harmonics H3-50.96% of 100% limit, H5-35.51% of 150% limit.



Current Test Result Summary (Run time)

EUT: pendant lamp P50626(37660001) (WTF14F0312225E) Tested by: Terry
 Test category: Class-C per Ed. 3.2 (2009) (European limits) Test Margin: 100
 Test date: 2014/4/3 Start time: 16:20:56 End time: 16:23:48
 Test duration (min): 2.5 Data file name: H-000632.cts_data
 Comment: on mode
 Customer: Guangzhou O'Ming ELECTRIC&MACHINING CO.,Ltd.

Test Result: Pass Source qualification: Normal
 THC(A): 0.02 I-THD(%): 15.22 POHC(A): 0.000 POHC Limit(A): 0.014
 Highest parameter values during test:

V _{RMS} (Volts):	230.15	Frequency(Hz):	50.00
I _{Peak} (Amps):	0.239	I _{RMS} (Amps):	0.146
I _{Fund} (Amps):	0.144	Crest Factor:	1.646
Power (Watts):	31.3	Power Factor:	0.935

Harm#	Harms (avg)	100% Limit	% of Limit	Harms (max)	150% Limit	% of Limit	Status
2	0.001	0.003	0.0	0.001	0.004	0.00	Pass
3	0.021	0.040	51.0	0.022	0.000	0.00	Pass
4	0.001						
5	0.007	0.014	50.5	0.008	0.022	35.51	Pass
6	0.001						
7	0.003	0.010	0.0	0.003	0.015	0.00	Pass
8	0.000						
9	0.001	0.007	0.0	0.001	0.011	0.00	Pass
10	0.000						
11	0.001	0.004	0.0	0.001	0.006	0.00	Pass
12	0.000						
13	0.001	0.004	0.0	0.001	0.006	0.00	Pass
14	0.000						
15	0.001	0.004	0.0	0.001	0.006	0.00	Pass
16	0.000						
17	0.001	0.004	0.0	0.001	0.006	0.00	Pass
18	0.000						
19	0.001	0.004	0.0	0.001	0.006	0.00	Pass
20	0.000						
21	0.001	0.004	0.0	0.001	0.006	0.00	Pass
22	0.000						
23	0.001	0.004	0.0	0.001	0.006	0.00	Pass
24	0.000						
25	0.000	0.004	0.0	0.001	0.006	0.00	Pass
26	0.000						
27	0.000	0.004	0.0	0.001	0.006	0.00	Pass
28	0.001						
29	0.000	0.004	0.0	0.001	0.006	0.00	Pass
30	0.000						
31	0.001	0.004	0.0	0.001	0.006	0.00	Pass
32	0.001						
33	0.001	0.004	0.0	0.001	0.006	0.00	Pass
34	0.001						
35	0.001	0.004	0.0	0.001	0.006	0.00	Pass
36	0.001						
37	0.001	0.004	0.0	0.001	0.006	0.00	Pass
38	0.001						
39	0.001	0.004	0.0	0.001	0.006	0.00	Pass
40	0.000						

Note: Dynamic limits were applied for this test. The highest harmonics values in the above table may not occur at the same window as the maximum harmonics/limit ratio.



Voltage Source Verification Data (Run time)

EUT: pendant lamp P50626(37660001) (WTF14F0312225E) Tested by: Terry
 Test category: Class-C per Ed. 3.2 (2009) (European limits) Test Margin: 100
 Test date: 2014/4/3 Start time: 16:20:56 End time: 16:23:48
 Test duration (min): 2.5 Data file name: H-000632.cts_data
 Comment: on mode
 Customer: Guangzhou O'Ming ELECTRIC&MACHINING CO.,Ltd.

Test Result: Pass Source qualification: Normal

Highest parameter values during test:

Voltage (Vrms):	230.15	Frequency(Hz):	50.00
I _{Peak} (Amps):	0.239	I _{RMS} (Amps):	0.146
I _{Fund} (Amps):	0.144	Crest Factor:	1.646
Power (Watts):	31.3	Power Factor:	0.935

Harm#	Harmonics V-rms	Limit V-rms	% of Limit	Status
2	0.059	0.460	12.76	OK
3	0.526	2.071	25.40	OK
4	0.070	0.460	15.22	OK
5	0.045	0.921	4.90	OK
6	0.033	0.460	7.18	OK
7	0.035	0.690	5.10	OK
8	0.012	0.460	2.54	OK
9	0.020	0.460	4.28	OK
10	0.013	0.460	2.77	OK
11	0.013	0.230	5.68	OK
12	0.014	0.230	6.01	OK
13	0.013	0.230	5.74	OK
14	0.006	0.230	2.60	OK
15	0.012	0.230	5.34	OK
16	0.013	0.230	5.81	OK
17	0.009	0.230	4.10	OK
18	0.014	0.230	5.90	OK
19	0.010	0.230	4.17	OK
20	0.021	0.230	9.10	OK
21	0.010	0.230	4.20	OK
22	0.004	0.230	1.83	OK
23	0.007	0.230	3.16	OK
24	0.005	0.230	1.96	OK
25	0.007	0.230	2.94	OK
26	0.005	0.230	2.33	OK
27	0.007	0.230	3.08	OK
28	0.003	0.230	1.16	OK
29	0.008	0.230	3.29	OK
30	0.005	0.230	2.14	OK
31	0.006	0.230	2.76	OK
32	0.005	0.230	1.98	OK
33	0.005	0.230	2.01	OK
34	0.003	0.230	1.44	OK
35	0.005	0.230	2.19	OK
36	0.003	0.230	1.30	OK
37	0.004	0.230	1.69	OK
38	0.004	0.230	1.53	OK
39	0.006	0.230	2.49	OK
40	0.009	0.230	4.02	OK



6 Immunity Test Results

6.1 Performance Criteria

Performance criterion A: During the test, no change of the luminous intensity shall be observed and the regulating control, if any, shall operate during the test as intended.

Performance criterion B: During the test, the luminous intensity may change to any value. After the test, the luminous intensity shall be restored to its initial value within 1 min. Regulating controls need not function during the test, but after the test, the mode of the control shall be the same as before the test provided that during the test no mode changing commands were given.

Performance criterion C: During and after the test, any change of the luminous intensity is allowed and the lamp(s) may be extinguished. After the test, within 30 min, all functions shall return to normal, if necessary by temporary interruption of the mains supply and/or operating the regulating control.

6.2 Electrostatic Discharge (ESD)

Test Requirement	:	EN 61547
Test Method	:	IEC 61000-4-2
Test Result	:	Pass
Discharge Impedance	:	330Ω / 150pF
Discharge Voltage	:	Air Discharge: ±8kV Contact Discharge: ±4kV HCP & VCP: ±4kV
Polarity	:	Positive & Negative
Number of Discharge	:	Minimum 10 times at each test point
Discharge Mode	:	Single Discharge
Discharge Period	:	1 second minimum

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6.2.1 E.U.T. Operation

Operating Environment:

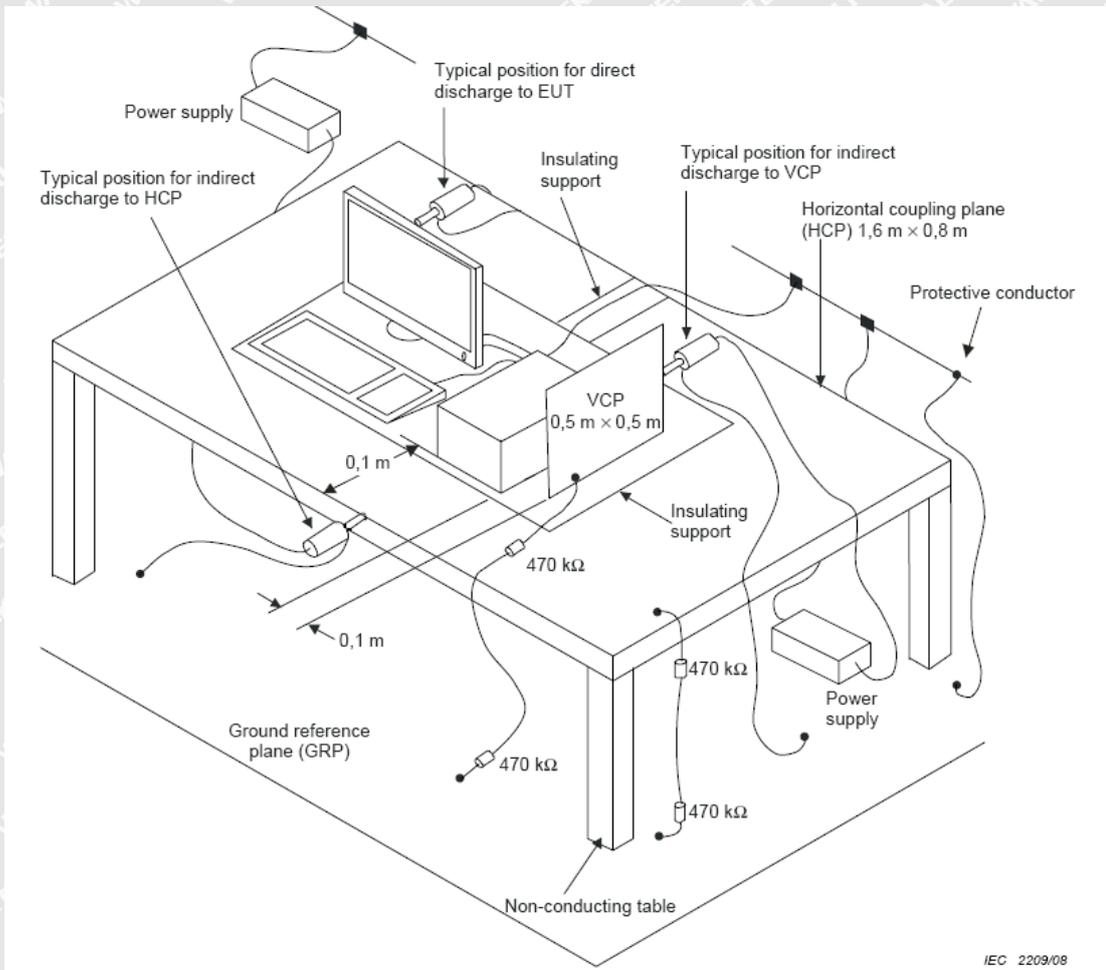
- Temperature : 22.1°C
- Humidity : 58.4%RH
- Barometric Pressure : 100.8kPa

EUT Operation:

- Input Voltage..... : AC 230V/50Hz
- Operating Mode..... : On mode

6.2.2 Block Diagram of Setup

The ESD test was performed in accordance with the IEC 61000-4-2.





6.3.1E.U.T. Operation

Operating Environment:

Temperature : 22.1°C

Humidity..... : 58.4% RH

Barometric Pressure..... : 100.8kPa

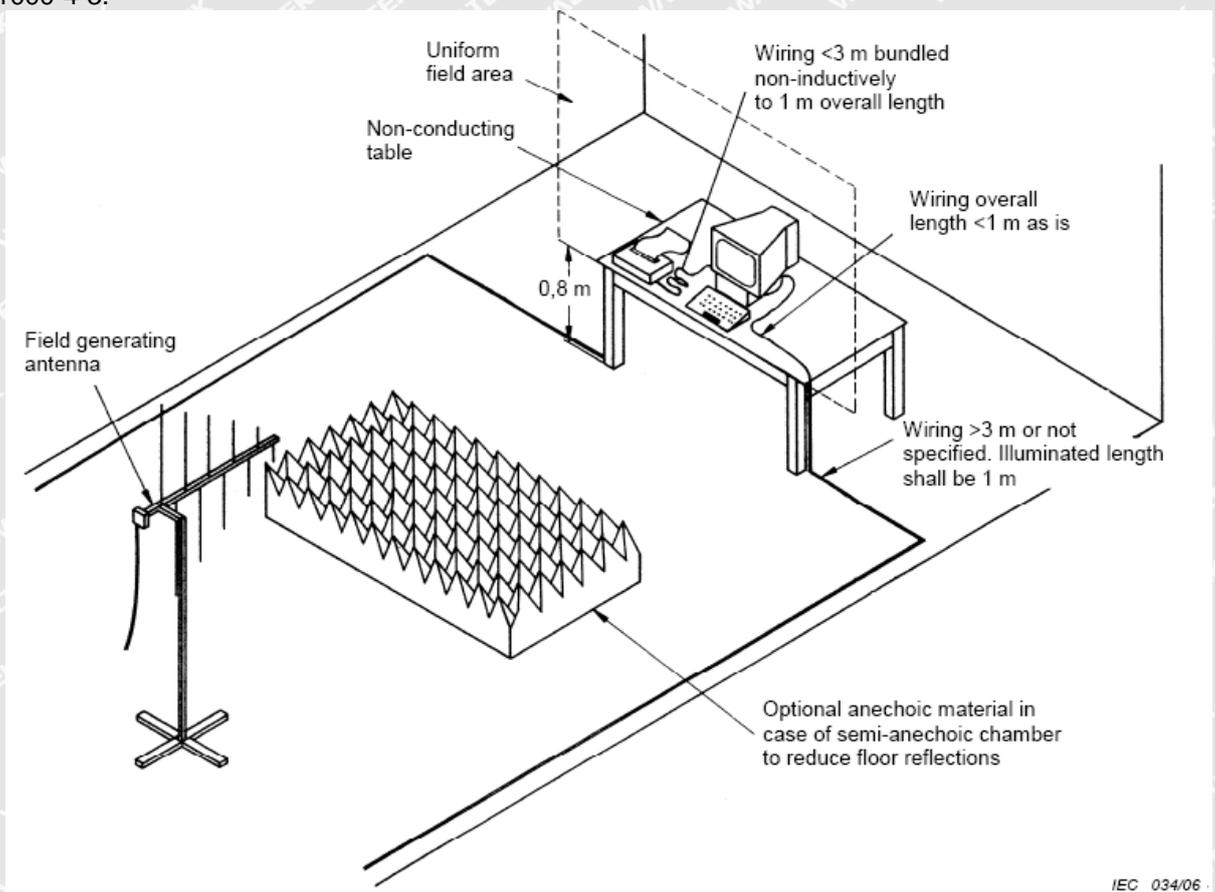
EUT Operation:

Input Voltage : AC 230V/50Hz

Operating Mode..... : On mode

6.3.2 Block Diagram of Setup

The Radio-frequency electromagnetic fields Immunity test was performed in accordance with the IEC 61000-4-3.





6.3.3 Test Results

Frequency	Face of EUT	Antenna polarisation	Test Level	Step Size	Dwell Time	Performance Criterion	Result
80 to 1000MHz	Front, Back, Left, Right	Horizontal	3V/m	1%	1s	A	Pass*
80 to 1000MHz	Front, Back, Left, Right	Vertical	3V/m	1%	1s	A	Pass*

Remark:

* During the test no deviation was detected to the selected operation mode(s)

6.4 Electrical Fast Transients (EFT)

Test Requirement..... : EN 61547
Test Method..... : IEC 61000-4-4
Test Result..... : Pass
Test Level : 1.0kV on AC Mains
Polarity..... : Positive & Negative
Repetition Frequency : 5kHz
Burst Duration..... : 300ms
Test Duration..... : 2 minutes per level & polarity

6.4.1 E.U.T. Operation

Operating Environment:

Temperature : 22.1°C
Humidity..... : 58.4% RH
Barometric Pressure..... : 100.8kPa

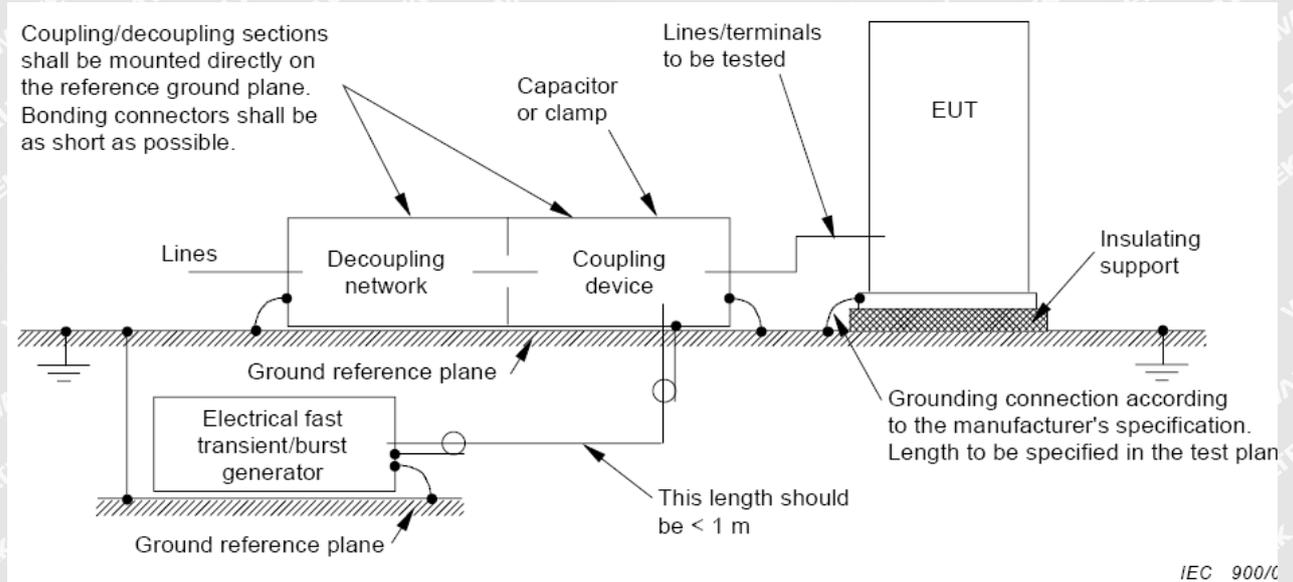
EUT Operation:

Input Voltage : AC 230V/50Hz
Operating Mode..... : On mode



6.4.2 Block Diagram of Setup

The Electrical Fast Transients Immunity test was performed in accordance with the IEC 61000-4-4.



6.4.3 Test Results

Test Port	Test Level(kV)	Performance Criterion	Result
Line-Neutral	±1.0	B	Pass*

Remark:

* During the test no deviation was detected to the selected operation mode(s)

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6.5 Surge

Test Requirement	:	EN 61547
Test Method	:	IEC 61000-4-5
Test Result	:	Pass
Test level	:	Table 10 of EN61547
Interval	:	60s between each surge
No. of surges	:	5 positive at 90°, 5 negative at 270°.

6.5.1 E.U.T. Operation

Operating Environment:

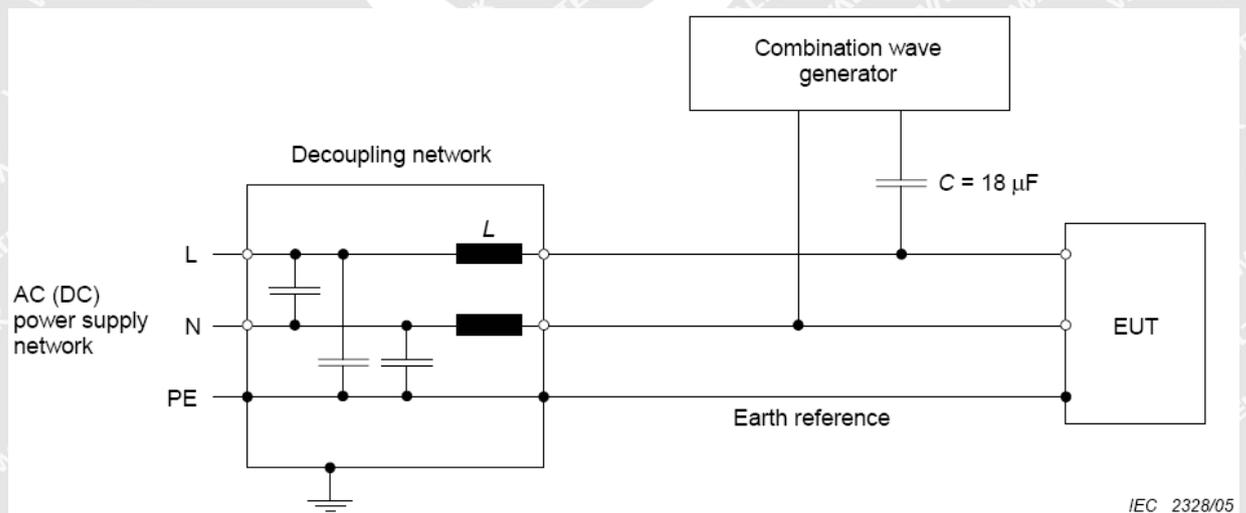
Temperature	:	22.1°C
Humidity	:	58.4% RH
Barometric Pressure	:	100.8kPa

EUT Operation:

Input Voltage	:	AC 230V/50Hz
Operating Mode	:	On mode

6.5.2 Block Diagram of Setup

The Surge Immunity test was performed in accordance with the IEC 61000-4-5.





6.5.3 Test Results

Test Port	Applied Voltage (kV)	Performance criterion	Result
Between Phase And Phase	± 1	C	N/A
Between Live And Neutral	± 0.5	C	Pass*
Between Live And Earth	± 2	C	N/A
Between Neutral And Earth	± 2	C	N/A

Remark:

- * During the test no deviation was detected to the selected operation mode(s)

6.6 Injected Currents Immunity 0.15MHz to 80MHz

Test Requirement.....	: EN 61547
Test Method.....	: IEC 61000-4-6
Test Result.....	: Pass
Frequency Range.....	: 0.15MHz to 80MHz
Test level.....	: 3V r.m.s. (unmodulated emf into 150 Ω)
Modulation.....	: 80%, 1kHz Amplitude Modulation.

6.6.1 E.U.T. Operation

Operating Environment:

Temperature.....	: 22.1°C
Humidity.....	: 58.4% RH
Barometric Pressure.....	: 100.8kPa

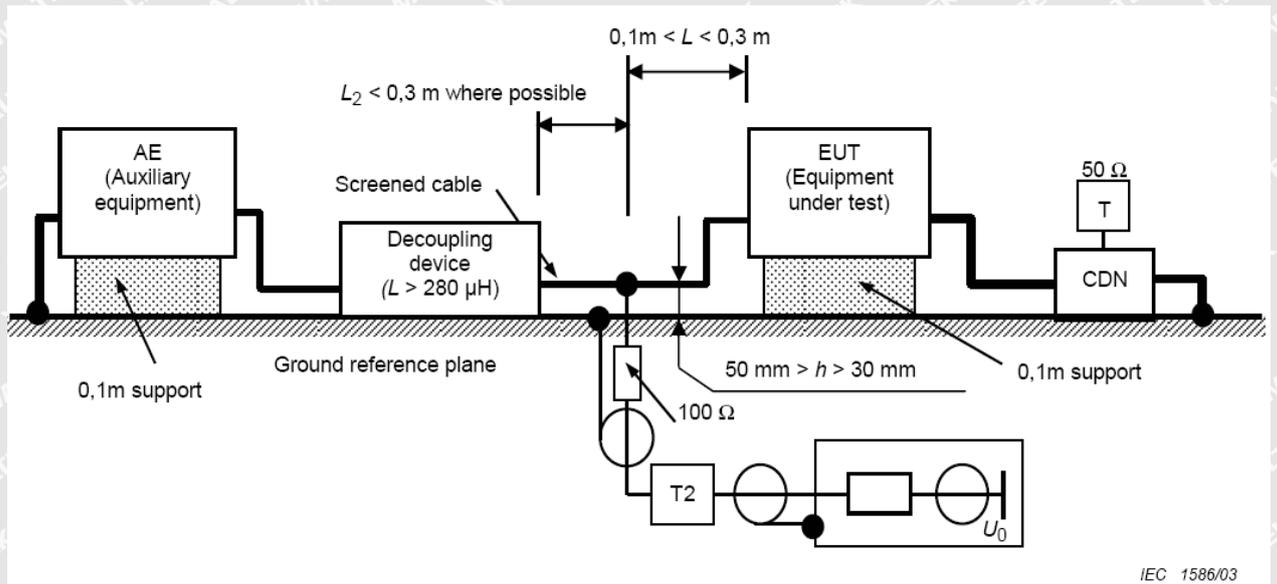
EUT Operation:

Input Voltage.....	: AC 230V/50Hz
Operating Mode.....	: On mode



6.6.2 Block Diagram of Setup

The Injected Currents Immunity test was performed in accordance with the IEC 61000-4-6.



6.6.3 Test Results

Frequency	Line	Test Level	Modulation	Step Size	Dwell Time	Performance Criterion	Result
0.15MHz to 80MHz	2 Wire AC Supply Cables	3Vr.m.s.	80%, 1kHz Amp. Mod.	1%	1s	A	Pass*

Remark:

* During the test no deviation was detected to the selected operation mode(s)



6.7 Voltage Dips and Interruptions

Test Requirement.....	EN 61547
Test Method.....	IEC 61000-4-11
Test Result.....	Pass
Test Level(Voltage reduction)	0%&70 % of U_T (Supply Voltage)
No. of Dips / Interruptions.....	1 per Level at 20ms intervals

6.7.1 E.U.T. Operation

Operating Environment:

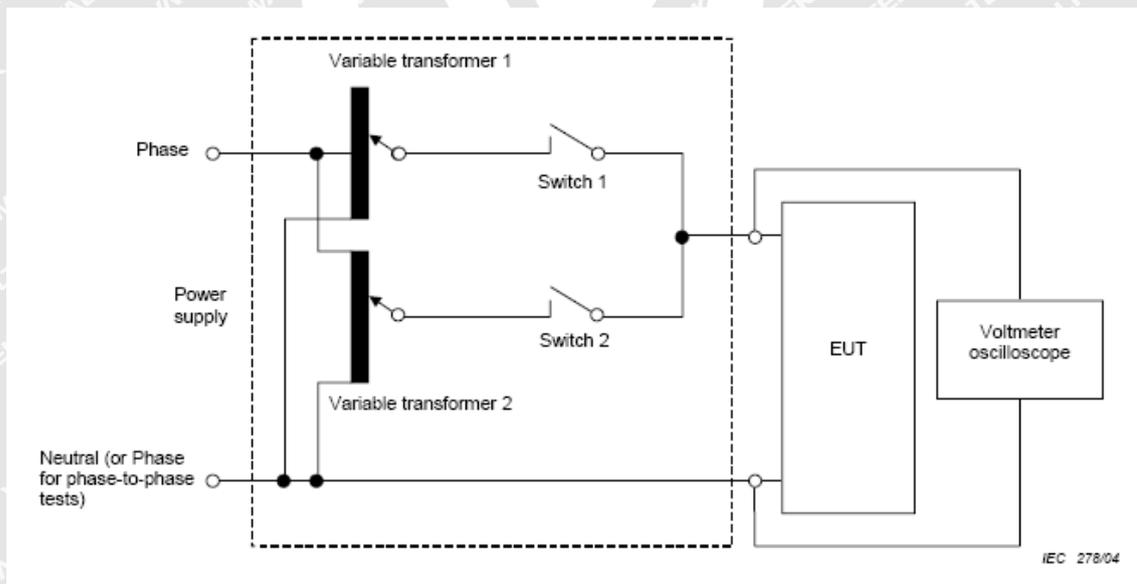
Temperature	22.1°C
Humidity.....	58.4% RH
Barometric Pressure.....	100.8kPa

EUT Operation:

Input Voltage	AC 230V/50Hz
Operating Mode.....	On mode

6.7.2 Block Diagram of Setup

The Voltage Dips and Interruptions Immunity test was performed in accordance with the IEC 61000-4-11.





6.7.3 Test Results

Test Level in %U _T	Phase	Performance criterion	Duration	Result
0	0°	B	0.5	Pass*
	180°			Pass*
70	0°	C	10	Pass*
	180°			Pass*

Remark:

- * The lamp was flickered during the test, it could be recovered automatically after tests.



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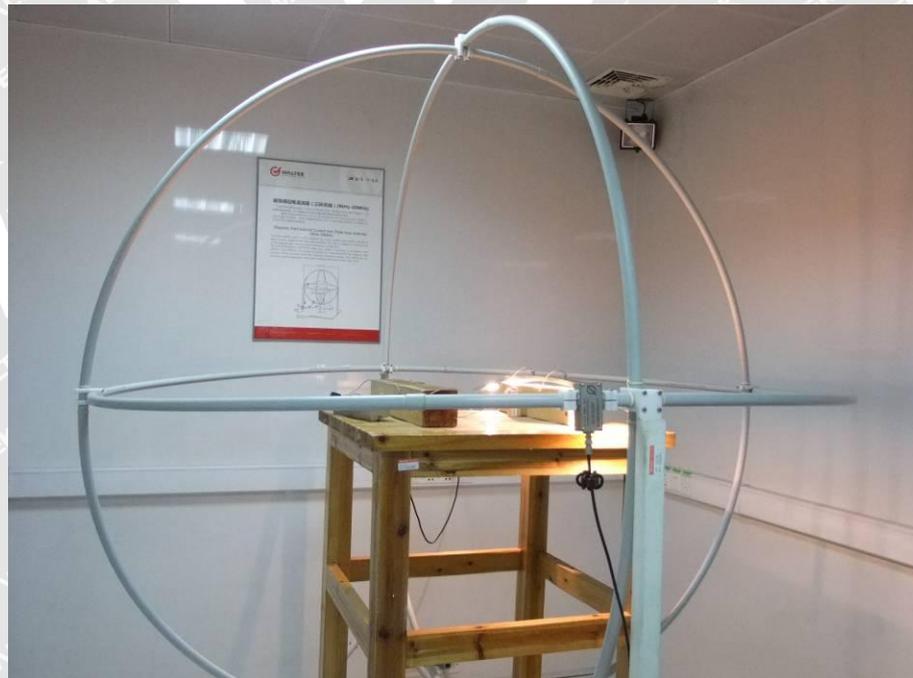


7 Photographs – Test Setup

7.1 Photograph – Mains Terminal Disturbance Voltage Test Setup

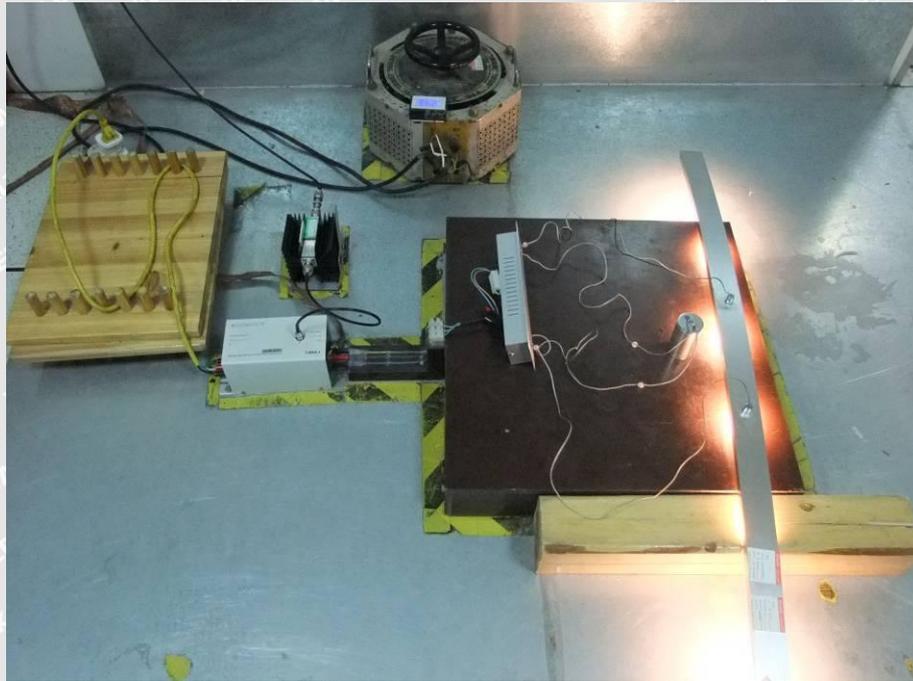


7.2 Photograph – Radiated electromagnetic disturbance Test Setup, 9kHz to 30MHz





7.3 Photograph – Radiated Emission(CDN method) Test Setup, 30MHz to 300MHz



7.4 Photograph – Harmonic Current and Voltage Fluctuation and Flicker Test Setup

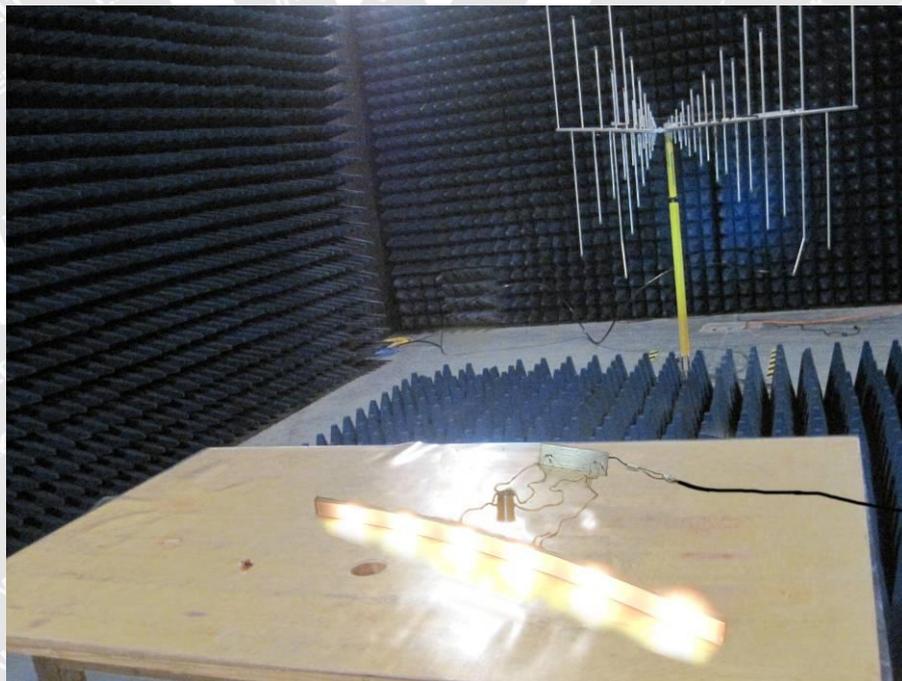




7.5 Photograph – ESD Immunity Test Setup



7.6 Photograph – Radio-frequency electromagnetic fields Immunity Test Setup





7.7 Photograph – EFT Immunity Test Setup



7.8 Photograph – Surge Immunity Test Setup





7.9 Photograph – Injected Currents Immunity Test Setup



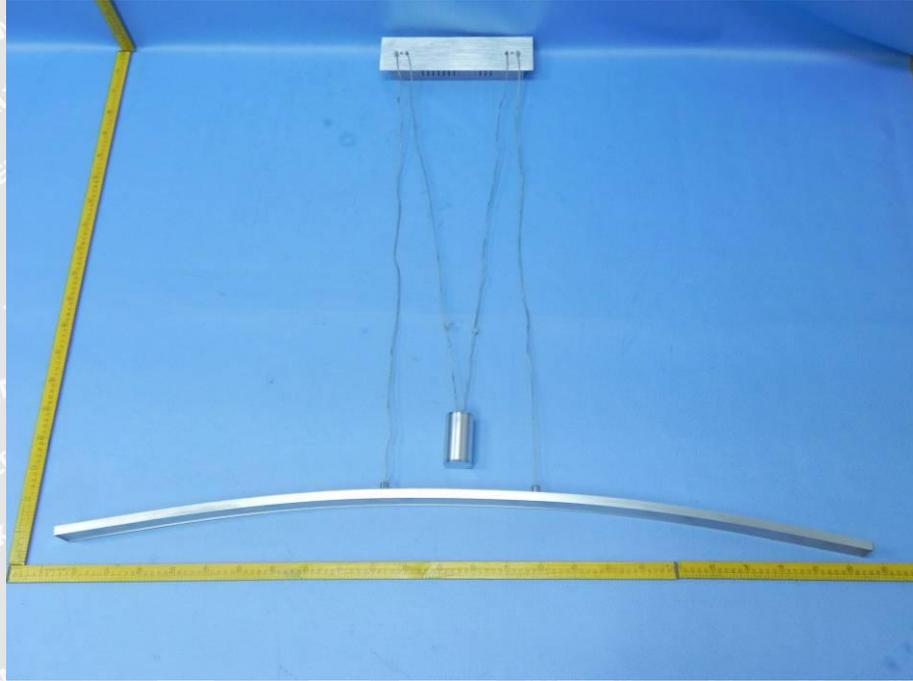
7.10 Photograph – Voltage Dips and Interruptions Immunity Test Setup



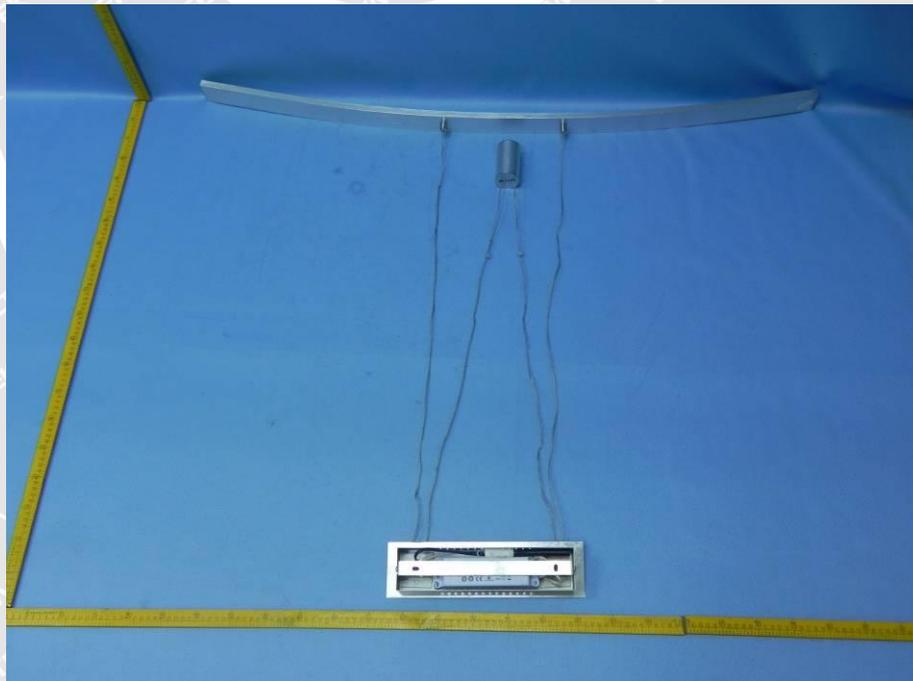


8 Photographs – Constructional Details

8.1 EUT – Front View



8.2 EUT – Back View



===== End of Report =====