Prüfbericht-Nr.: *Test Report No.:*	**50270134 001**	**Auftrags-Nr.:** *Order No.:*	168115191	Seite 1 von 28 *Page 1 of 28*
Kunden-Referenz-Nr.: *Client Reference No.:*	695821	**Auftragsdatum:** *Order date.:*	13 May. 2019	
Auftraggeber: *Client:*	FOSHAN KAICHENG LIGHTING CO.,LTD NO.235 Lianjiang First Road, Chancheng District, Foshan, Guangdong 528000, P. R. China			
Prüfgegenstand: *Test item:*	LED Street Light			
Bezeichnung / Typ-Nr.: *Identification / Type No.:*	SL-50W, SL-100W, SL-150W, SL-200W			
Auftrags-Inhalt: *Order content:*	TUV Rheinland - EMC service			
Prüfgrundlage: *Test specification:*	EN 55015:2013+A1 EN 61000-3-2:2014 EN 61000-3-3:2013 EN 61547:2009			
Wareneingangsdatum: *Date of receipt:*	13 May 2019			
Prüfmuster-Nr.: *Test sample No.:*	WSCT-R&E-19050028A			
Prüfzeitraum: *Testing period:*	Refer to test report			
Ort der Prüfung: *Place of testing:*	Refer to section 2.1			
Prüflaboratorium: *Testing laboratory:*	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: *Test result*:*	Pass			

geprüft von / *tested by:*

02.08.2019 | Dylan Yang, Senior Project Engineer | Dylan Yang

Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

kontrolliert von / *reviewed by:*

02.08.2019 | Tongle Lee, Technical Certifier | Tongle Lee

Datum *Date*	**Name/Stellung** *Name/Position*	**Unterschrift** *Signature*

Sonstiges / *Other:*

Zustand des Prüfgegenstandes bei Anlieferung: *Condition of the test item at delivery:* — Prüfmuster vollständig und unbeschädigt / Test item complete and undamaged

* Legende:	1 = sehr gut	2 = gut	3 = befriedigend	4 = ausreichend	5 = mangelhalt
	P(ass) = entspricht o.g. Prüfgrundlage(n)		F(ail) = entspricht nicht o.g. Prüfgrundlage(n)	N/A = nicht anwendbar	N/T = nicht getestet
Legend:	1 = very good	2 = good	3 = satisfactory	4 = sufficient	5 = poor
	P(ass) = passed a.m. test specifications(s)		F(ail) = failed a.m. test specifications(s)	N/A = not applicable	N/T = not tested

TEST SUMMARY

5.1.1 HARMONICS ON AC MAINS
RESULT: *Pass*

5.1.2 VOLTAGE FLUCTUATIONS ON AC MAINS
RESULT: *Pass*

5.1.3 DISTURBANCE VOLTAGE ON AC MAINS
RESULT: *Pass*

5.1.4 RADIATED ELECTROMAGNETIC DISTURBANCES (9 KHZ – 30MHZ)
RESULT: *Pass*

5.2.1 RADIATED ELECTROMAGNETIC DISTURBANCES (30-300MHZ)
RESULT: *Pass*

6.2.1 RADIO FREQUENCY ELECTROMAGNETIC FIELDS SUSCEPTIBILITY (RS)
RESULT: *Pass*

6.2.2 INJECTED CURRENTS / CONDUCTED SUSCEPTIBILITY (CS)
RESULT: *Pass*

6.3.1 ELECTRICAL FAST TRANSIENTS (EFT)
RESULT: *Pass*

6.3.2 SURGE
RESULT: *Pass*

6.3.3 ELECTROSTATIC DISCHARGES (ESD)
RESULT: *Pass*

6.4.1 VOLTAGE DIPS AND INTERRUPTIONS
RESULT: *Pass*

Contents

1. General Remarks

1.1 Complementary Materials

All attachments are integral parts of this test report. This applies especially to the following appendix:

Appendix 1: Test Result
Appendix 2: Measurement Uncertainties

2. Test Sites

2.1 Test Facilities

World Standardization Certification & Testing (Shenzhen) Co., Ltd.
Building A, Baoshi Science & Technology Park, Baoshi Road,
Bao'an District, Shenzhen, Guangdong, China.
&

Guangzhou GRG Metrology & Test (Shenzhen) Co., Ltd.
NO.12, Qinghua Road, Longhua District, Shenzhen, Guangdong, China.

The tests at the test sites have been conducted under the supervision of a TÜV engineer.

2.2 List of Test and Measurement Instruments

Table 1: List of Test and Measurement Equipment

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Disturbance Voltage (WSCT)				
Shielding room	/	8*4*3	WSCT-E-083	2020-06-01
EMI Test Receiver	R&S	ESCI	WSCT-E-074	2019-10-28
LISN	AFJ	LS16	WSCT-E-075	2019-10-28
EMI test software	Farad	EZ_EMC	WSCT-E-088	/
10dB attenuator	rflight	BAT-6H	WSCT-E-091	2019-10-28
Coaxial line	N/A	1m cable	WSCT-E-089	2019-10-28
Probe voltage divider	Schwarzbeck	TK 9420	WSCT-E-084	2019-10-28
High pressure probe	Schwarzbeck	TK 9420	WSCT-E-078	2019-10-28
Radiated Electromagnetic Disturbances (9k-30MHz)(WSCT)				
Shielding room	/	8*4*3	WSCT-E-083	2020-06-01
EMI Test Receiver	R&S	ESCI	WSCT-E-074	2019-10-28
Coaxial line	WSCT	7.8m cable	WSCT-E-090	2019-10-28
EMI test software	Farad	EZ_EMC	WSCT-E-088	/
Trid loop antenna	EVERFINE	LLA-2	WSCT-E-080	2019-10-28
Hygrothermograph	Anymetre	TH101B	WSCT-E-145	2019-10-28
Radiated Electromagnetic Disturbances 30-300MHz (WSCT)				
Chamber	/	9*6*6	WSCT-E-092	2020-06-01
EMI Test Receiver	R&S	ESPI	WSCT-E-094	2019-10-28
Positioning-Controller	UC	CC-C-IF	WSCT-E-093	2019-10-28
Pre-amplifier	H.P.	HP8447E	WSCT-E-095	2019-10-28
EMI Test Software	/	EZ_EMC	WSCT-E-116	/
Low frequency broadband antenna	sunol sciences corp	JB3	WSCT-E-105	2019-10-28
ESD (WSCT)				
Electrostatic Discharge Generator	Haefely	ONYX30	WSCT-E-131	2019-10-28
Radio-Frequency Radiated Electromagnetic Disturbances (GRG)				
Signal Generator	Agilent	N5181A	N/A	2020-05-19
RF Power Meter. Dual Channel	BOONTON	4232A	N/A	2020-05-19
50ohm Diode Power sensor	BOONTON	51011EMC	N/A	2020-05-19
Field Strength Meter	DARE	RSS1006A	N/A	2020-05-19
Power Amplifier	MILMEGA	80RF1000-175	N/A	2020-05-19
Power Amplifier	MILMEGA	AS0102-55	N/A	2020-05-19

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
Power Amplifier	MILMEGA	AS1860-50	N/A	2020-05-19
Low frequency broadband antenna	sunol sciences corp	JB3	N/A	2020-05-19
Broad-Band Horn Attenna	SCHWARZBECK	STLP9149	N/A	2020-05-19
Multifunction interface system	DARE	CTR1009B	N/A	2020-05-19
Automatic switch Group	DARE	RSW1004A	N/A	2020-05-19
EFT, Surge (WSCT)				
EMC PARTNER TRANSIENT 2000	EMC PARTNER	TRANSIENT2000	WSCT-E-122	2019-10-28
EMS capacitive coupling clip	HALL	H3C	WSCT-E-121	2019-10-28
Voltage Dips and Interruptions (GRG)				
EMC Partner Transient 2000	EMC Partner	Transient 2000	N/A	2020-05-19
Radio-Frequency Continuous Conducted (WSCT)				
Integrated conduction sensitivity test system	FRANKONIA	CIT-10	WSCT-E-125	2019-10-28
CDN	CDSI	CDN M2/M3	WSCT-E-126	2019-10-28
CDN	CDSI	CDN M5/32	WSCT-E-127	2019-10-28
Electromagnetic Injection Clamp	CDSI	EMCL-22	WSCT-E-128	2019-10-28
Harmonics (WSCT)				
Harmonic & Flicker Tester	Laplace	AC2000A	WSCT-E-129	2019-10-28
AC Power Source	MToni	PHF-5010	WSCT-E-130	2019-10-28
Harmonic testing software	HA-PC	3.01	WSCT-E-138	/

3. General Product Information

3.1 Product Function and Intended Use

The EUTs are LED Street Lights for illumination purpose.

Model list:

Model Name	Input voltage	Frequency	Input current	Power
SL-50W	AC 220-240V	50/60Hz	0.25A Max.	50W
SL-100W			0.5A Max.	100W
SL-150W			0.75A Max.	150W
SL--200W			1.0A Max.	200W

For more information refer to the circuit diagram & instruction manual.

3.2 Ratings and System Details

System input voltage: AC 220-240V
Frequency: 50/60Hz
Rated power: Refer to section 3.1
Protection class: I

3.3 Independent Operation Modes

The basic operation modes are:

A. On, lighting
B. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the Circuit Diagram.

3.5 Submitted Documents

- Circuit Diagram
- PCB Layout
- Bill of Material
- Rating Label
- Instruction Manual

4. Test Set-up and Operation Modes

4.1 Principle of Configuration Selection

Emission: The equipment under test (EUT) was configured to measure its highest possible radiation level. The test modes were adapted accordingly in reference to the instructions for use.

Immunity: The equipment under test (EUT) was configured to have its highest possible susceptibility against the tested phenomena. The test modes were adapted accordingly in reference to the instructions for use.

4.2 Test Operation and Test Software

Test operation refers to test setup in chapter 5 and 6.
Pre-test was carried out at all operation modes & different voltages to find out the worst case for compliance test.

4.3 Special Accessories and Auxiliary Equipment

None.

4.4 Countermeasures to achieve EMC Compliance

The test samples which have been tested, contained the noise suppression parts as described in the Constructional Data Form or the Technical Construction File. No additional measures were employed to achieve compliance.

5. Test Results EMISSION

5.1 Emission in the Frequency Range up to 30 MHz

5.1.1 Harmonics on AC Mains

RESULT: **Pass**

Date of testing	:	2019-05-29
Test procedure	:	EN 61000-3-2:2014
Class	:	C
Limit	:	Table 2
Measuredharmonics	:	1 – 40

Test setup

Input Voltage	:	AC 230V±2%, 50Hz
Operation Condition	:	According to Annex C.5
Operation mode	:	A
Earthing	:	Connected

Refer to attached Appendix 1.

5.1.2 Voltage Fluctuations on AC Mains

RESULT: **Pass**

Test procedure	:	EN 61000-3-3:2013
Limit	:	Clause 5
Frequency range	:	0 - 2kHz

The max. rated power of the EUTs is 200W only, which unlikely to produce significant voltage fluctuation. Therefore no test was applied.

See clause 6.1***

*** EN 61000-3-3:2013, clause 6.1:" ... Tests need not be made on equipment which is unlikely to produce significant voltage fluctuations or flicker...."

5.1.3 Disturbance Voltage on AC Mains

RESULT: **Pass**

Date of testing	:	2019-05-17, 2019-06-03
Test standard	:	EN 55015:2013+A1
Frequency range	:	0.009 - 30MHz
Limits	:	Table 2a
Kind of test site	:	Shielded room

Test setup

Input Voltage	:	AC 220-240V, 50/60Hz
Operation Condition	:	According to Clause 6, 8.1.1 & 8.2
Operation mode	:	A
Artificial Hand	:	Not applied
Earthing	:	Connected

Refer to attached Appendix 1.

5.1.4 Radiated Electromagnetic Disturbances (9 kHz – 30MHz)

RESULT: **Pass**

Date of testing	:	2019-05-31
Test standard	:	EN 55015:2013+A1
Frequency range	:	0.009 – 30MHz
Limits	:	Table 3a
Kind of test site	:	Shielded room

Test setup

Input Voltage	:	AC 220-240V, 50/60Hz
Operation Condition	:	According to Clause 6, 9.1
Operation mode	:	A
Earthing	:	Connected

Refer to attached Appendix 1.

5.2 Emission in the Frequency Range above 30 MHz

5.2.1 Radiated Electromagnetic Disturbances (30-300MHz)

RESULT: **Pass**

Date of testing	:	2019-06-03
Test standard	:	EN 55015:2013+A1
Frequency range	:	30 – 300MHz
Limits	:	Table 3b
Kind of test site	:	3m semi-anechoic chamber

Test setup:

Input Voltage	:	AC 220-240V, 50/60Hz
Operation Condition	:	According to clause 6 & 9.2
Operation mode	:	A
Earthing	:	Connected

Refer to attached Appendix 1.

6. Test Results IMMUNITY

6.1 Classification of apparatus

According to EN 61547:2009, the EUTs belong to luminaires, and shall be tested in accordance with clause 5 and comply with the performance criterion of table 15.

Continuous Disturbance

Radio-Frequency Electromagnetic Fields (RS)	**Criterion A**
Injected Currents / Conducted Susceptibility (CS)	**Criterion A**
Power Frequency Magnetic Fields *	**Criterion A**

Transient Disturbance

Fast Transient (EFT)	**Criterion B**
Surge	**Criterion C**
Electrostatic Discharges (ESD)	**Criterion B**

Power supply Alterations

Voltage Dips and Interruptions 30% Voltage Reduction, 10 Periods	**Criterion C**
100% Voltage Reduction, 0.5 Periods	**Criterion B**

"*": The EUTs do not contain devices susceptible to magnetic fields; therefore the Power-Frequency Magnetic Fields test is not necessary.

6.2 Continuous Disturbances

6.2.1 Radio Frequency Electromagnetic Fields Susceptibility (RS)

RESULT: **Pass**

Date of Testing	:	2019-06-26
Test Specification	:	EN 61547:2009, Table 2
Basic Standard	:	IEC 61000-4-3:2006+A1
Criterion	:	A
Frequency Range	:	80 – 1,000MHz
Test Level	:	3V/m (Unmodulated, rms)
Modulation	:	80% AM, 1kHz
Test Port	:	Enclosure

Test setup

Input Voltage	:	AC 220-240V, 50/60Hz
Operation Mode	:	A
Earthing	:	Connected
Ambient Temperature	:	Refer to Appendix 1
Relative Humidity	:	Refer to Appendix 1
Atmospheric Pressure	:	Refer to Appendix 1

Refer to attached Appendix 1.

6.2.2 Injected Currents / Conducted Susceptibility (CS)

RESULT: **Pass**

Date of testing	:	2019-06-03
Test Specification	:	EN 61547:2009, table 9
Basic Standard	:	IEC 61000-4-6:2008
Criterion	:	A
Frequency range	:	0.15 – 80MHz
Source impedance	:	150Ω
Test level	:	3V (unmodulated, rms.)
Modulation	:	AM 80%, 1kHz sine-wave
Sweep mode	:	automatic
Sweep rate	:	< 1.5×10^{-3} decade / sec.

Test setup

Input Voltage	:	AC 220-240V, 50/60Hz
Operation Mode	:	A
Earthing	:	Connected
Ambient temperature	:	Refer to Appendix 1
Relative humidity	:	Refer to Appendix 1
Atmospheric pressure	:	Refer to Appendix 1

Refer to attached Appendix 1.

6.3 Transient Disturbances

6.3.1 Electrical Fast Transients (EFT)

RESULT: **Pass**

Date of testing	:	2019-06-03
Test Specification	:	EN 61547:2009, table 6
Basic Standard	:	IEC 61000-4-4:2004
Criterion	:	B
Test level	:	±1kV
Test duration	:	≥60sec
Rise time	:	5/50ns
Repetition frequency	:	5 kHz

Test setup

Input Voltage	:	AC 220-240V, 50/60Hz
Operation Mode	:	A
Earthing	:	Connected
Ambient temperature	:	Refer to Appendix 1
Relative humidity	:	Refer to Appendix 1
Atmospheric pressure	:	Refer to Appendix 1

Refer to attached Appendix 1.

6.3.2 Surge

RESULT: **Pass**

Date of testing	:	2019-06-03
Test Specification	:	EN 61547:2009, table 10
Basic Standard	:	IEC 61000-4-5:2005
Criterion	:	C
Source impedance	:	2Ω, 12Ω
Test level	:	±1kV (Line to Line) ±2kV (Line to Ground)
Coupling phases	:	π/2, 3π/2
Number of surges	:	5 (for each combination of parameters)
Repetition rate	:	Max. 1/min

Test Setup

Input Voltage	:	AC 220-240V, 50/60Hz
Operation Mode	:	A
Earthing	:	Connected
Ambient temperature	:	Refer to Appendix 1
Relative humidity	:	Refer to Appendix 1
Atmospheric pressure	:	Refer to Appendix 1

Refer to attached Appendix 1.

6.3.3 Electrostatic Discharges (ESD)

RESULT: **Pass**

Date of testing	:	2019-06-03
Test Specification	:	EN 61547:2009, table 1
Basic Standard	:	IEC 61000-4-2:2008
Criterion	:	B
Discharge voltage	:	±8.0kV (air discharge) ±4.0kV (contact discharge)
Number of discharges	:	>10
Test Port	:	Enclosure

Test Setup

Input Voltage	:	AC 220-240V, 50/60Hz
Operation Mode	:	A
Earthing	:	Connected
Ambient temperature	:	Refer to Appendix 1
Relative humidity	:	Refer to Appendix 1
Atmospheric pressure	:	Refer to Appendix 1

Refer to attached Appendix 1.

6.4 Power Supply Alterations

6.4.1 Voltage Dips and Interruptions

RESULT: **Pass**

Date of testing	:	2019-06-26
Test Specification	:	EN 61547:2009, table 11 & 12
Basic Standard	:	IEC 61000-4-11:2004
Criterion	:	C - table 11 B - table 12
Test Port	:	AC Mains

Test Setup

Input Voltage	:	AC 220-240V, 50/60Hz
Operation Mode	:	A
Earthing	:	Connected
Ambient temperature	:	Refer to Appendix 1
Relative humidity	:	Refer to Appendix 1
Atmospheric pressure	:	Refer to Appendix 1

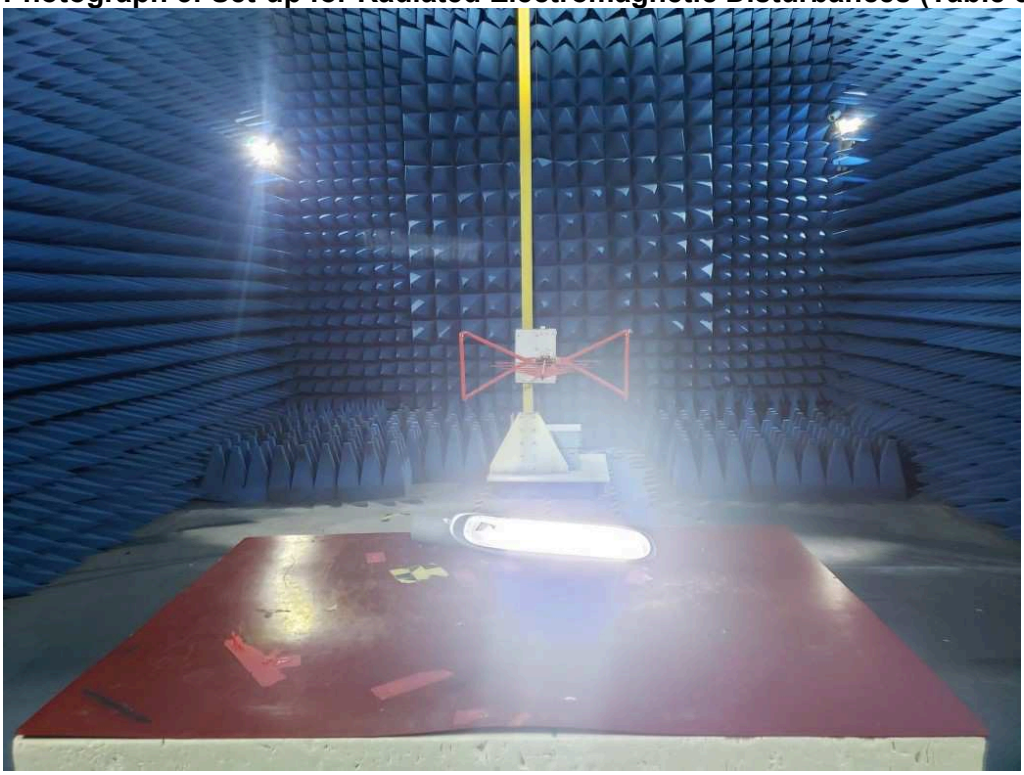
Refer to attached Appendix 1.

7. Photographs of the Test Set-Up

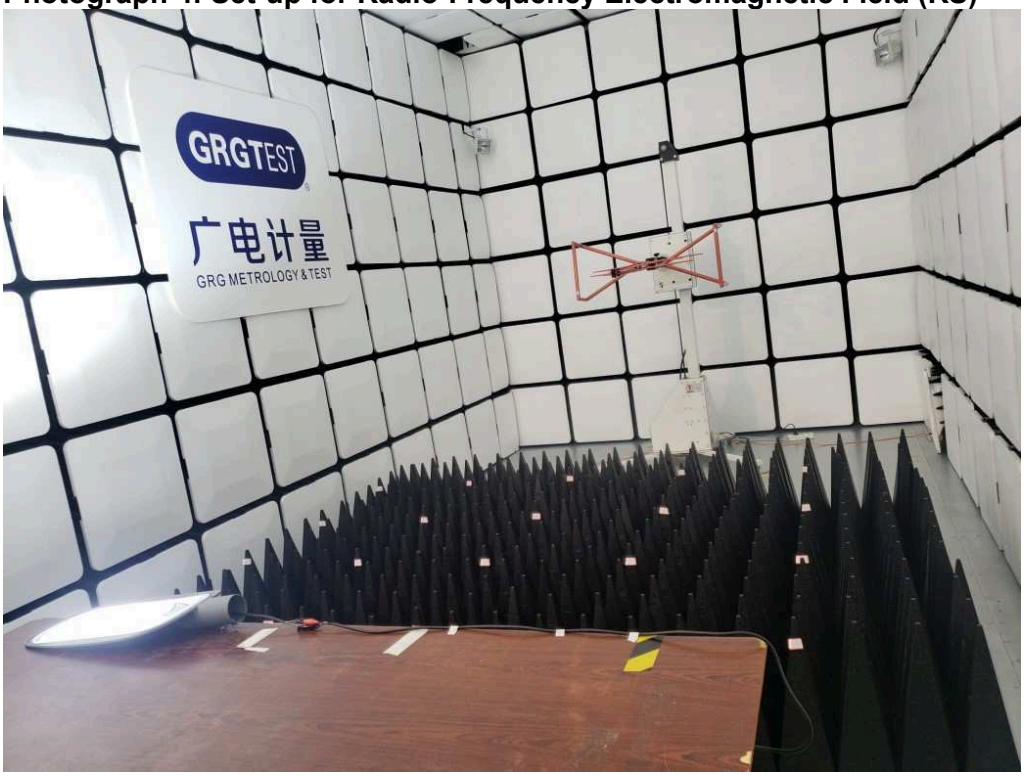
Photograph 1: Set-up for Disturbance Voltage

Photograph 2: Set-up for Radiated Electromagnetic Disturbances (Table 3a)

Photograph 3: Set-up for Radiated Electromagnetic Disturbances (Table 3b)



Photograph 4: Set-up for Radio-Frequency Electromagnetic Field (RS)



Photograph 5: Set-up for Injected Currents (CS)

Photograph 6: Set-up for EFT

Photograph 7: Set-up for Surge

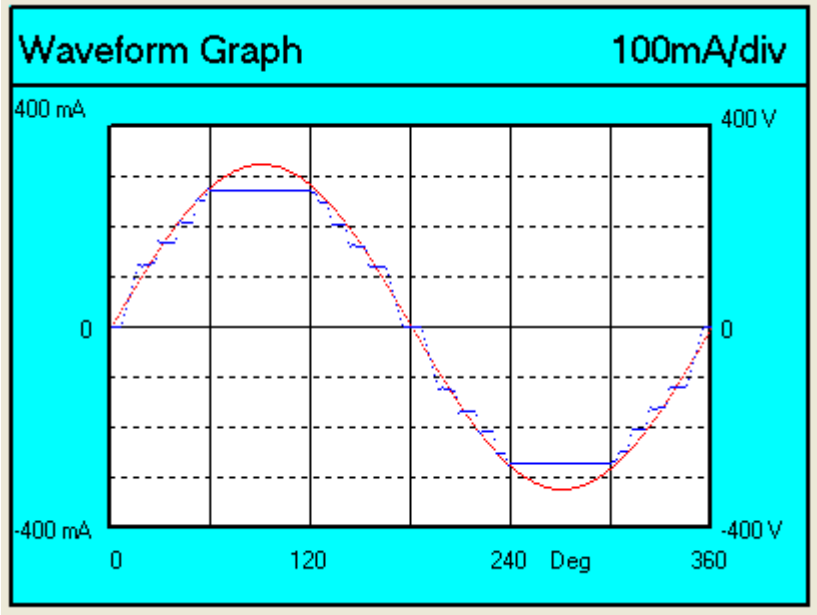
Photograph 8: Set-up for Voltage Dips and Interruptions

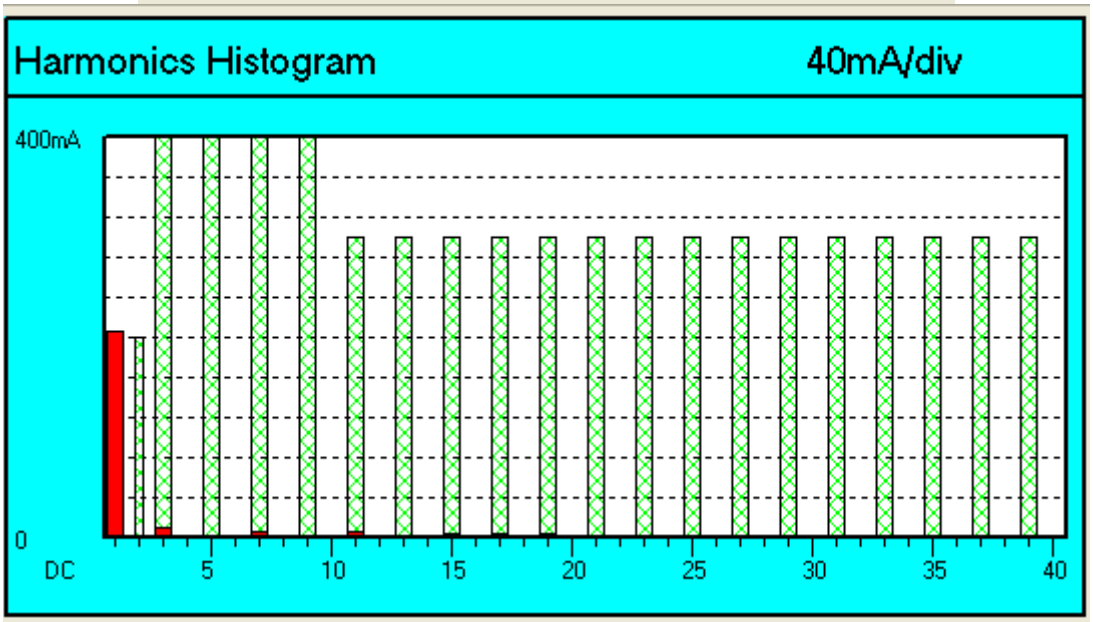
Photograph 9: Set-up for Electrostatic Discharges (ESD)

Photograph 10: Set-up for Harmonic

8. List of Tables

9. List of Photographs


Waveform Graph
100mA/div
400 mA
400 V
0
0
-400 mA
-400 V
0
120
240
Deg
360


Harmonics Histogram
40mA/div
400mA
0
DC
5
10
15
20
25
30
35
40

50W H.TXT

HA-PC Link Plus. Software v3.01. Firmware v3.02
Report Number : 130
Tested On : MAY 29, 2019 11:49 for 150 Seconds.
Equipment Under Test : LED Street light
Serial Number : 50W
Tested by : yuan yuxiang

Supply Voltage : 229.0 Vrms @ 323.4 Vpk Frequency : 49.99 Hz
Supply Meets EN Requirements

Load Power : 47.350 W 47.50 VA Power Factor 0.997
Load Current : 207.4 mArms 272.2 mApk Crest Factor 1.312

Measurement Standard : EN61000-4-7:2002+A1:2009
Limits Applied : EN61000-3-2:2014 Class C Limits >25W for 10.000A at 0.900 PF.

Harmonic Number	Limit Current mA	Average (filtered) mA	% Limit	max. Value (Filtered) mA	% Limit	Assessment
Fundamental :		207.0				
2 :	200.0	0.1	0.1	0.12	0.1	Pass
3 :	2700.2	9.6	0.4	9.74	0.4	Pass
4 :	-	0.1	-	0.07	-	-
5 :	1000.0	2.1	0.2	2.19	0.2	Pass
6 :	-	0.0	-	0.05	-	-
7 :	700.0	6.5	0.9	6.51	0.9	Pass
8 :	-	0.0	-	0.04	-	-
9 :	500.0	0.8	0.2	0.85	0.2	Pass
10 :	-	0.0	-	0.05	-	-
11 :	300.0	5.1	1.7	5.12	1.7	Pass
12 :	-	0.0	-	0.04	-	-
13 :	300.0	2.5	0.8	2.51	0.8	Pass
14 :	-	0.0	-	0.03	-	-
15 :	300.0	3.2	1.1	3.22	1.1	Pass
16 :	-	0.0	-	0.03	-	-
17 :	300.0	4.9	1.6	4.86	1.6	Pass
18 :	-	0.0	-	0.03	-	-
19 :	300.0	3.5	1.2	3.49	1.2	Pass
20 :	-	0.0	-	0.04	-	-
21 :	300.0	2.7	0.9	2.76	0.9	Pass
22 :	-	0.0	-	0.04	-	-
23 :	300.0	2.6	0.9	2.65	0.9	Pass
24 :	-	0.0	-	0.04	-	-
25 :	300.0	0.4	0.1	0.40	0.1	Pass
26 :	-	0.0	-	0.05	-	-
27 :	300.0	2.5	0.8	2.56	0.9	Pass
28 :	-	0.0	-	0.05	-	-
29 :	300.0	2.6	0.9	2.60	0.9	Pass
30 :	-	0.0	-	0.06	-	-

Page 1

50W H.TXT

31 :	300.0	0.4	0.1	0.47	0.2	Pass
32 :	-	0.0	-	0.05	-	-
33 :	300.0	2.6	0.9	2.59	0.9	Pass
34 :	-	0.0	-	0.04	-	-
35 :	300.0	0.5	0.2	0.57	0.2	Pass
36 :	-	0.0	-	0.05	-	-
37 :	300.0	2.0	0.7	2.01	0.7	Pass
38 :	-	0.0	-	0.05	-	-
39 :	300.0	0.4	0.1	0.48	0.2	Pass
40 :	-	0.0	-	0.05	-	-
21 - 39 :	948.7	6.2	0.7	6.27	0.7	-

50W H_psq.txt

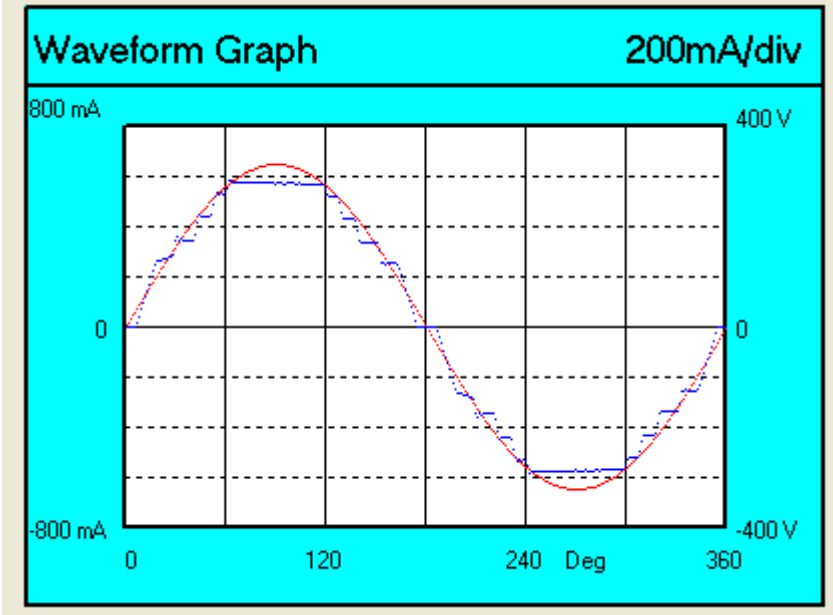
HA-PC Link Plus. Software v3.01. Firmware v3.02
Report Number : 130
Tested On : 29 ÎâÔÅ 2019 11:49 for 150 Seconds.
Equipment Under Test : LED Street light
Serial Number : 50W
Tested by : yuan yuxiang

	Nominal	Measured Low	Measured High	Deviation	Allowed Deviation	Result
Supply Voltage	: 230	228.98	229.21	-1.01	4.60	PASS
Supply Frequency	: 50	49.99	50.00	-0.01	0.25	PASS
Crest Phase	: 90.0	90.8	91.2	1.2	3.0	PASS
Crest Factor	: 1.414	1.412	1.412	-0.002	-0.014/+0.006	PASS
Fundamental Voltage	: 229.15	-	-	-	-	-

Harmonic	Harmonic Voltage	Harmonic Ratio	Limit	Result
2	0.09	0.056	0.20	PASS
3	0.03	0.015	0.90	PASS
4	0.01	0.012	0.20	PASS
5	0.09	0.041	0.40	PASS
6	0.01	0.009	0.20	PASS
7	0.07	0.033	0.30	PASS
8	0.01	0.004	0.20	PASS
9	0.03	0.021	0.20	PASS
10	0.00	0.005	0.10	PASS
11	0.03	0.016	0.10	PASS
12	0.00	0.005	0.10	PASS
13	0.00	0.003	0.10	PASS
14	0.01	0.003	0.10	PASS
15	0.07	0.036	0.10	PASS
16	0.00	0.003	0.10	PASS
17	0.00	0.003	0.10	PASS
18	0.01	0.003	0.10	PASS
19	0.04	0.020	0.10	PASS
20	0.00	0.003	0.10	PASS
21	0.04	0.021	0.10	PASS
22	0.00	0.003	0.10	PASS
23	0.00	0.003	0.10	PASS
24	0.00	0.003	0.10	PASS
25	0.03	0.019	0.10	PASS
26	0.00	0.003	0.10	PASS
27	0.04	0.021	0.10	PASS
28	0.00	0.003	0.10	PASS
29	0.01	0.003	0.10	PASS
30	0.00	0.003	0.10	PASS

50W H_psq.txt

31	0.00	0.005	0.10	PASS
32	0.00	0.003	0.10	PASS
33	0.01	0.008	0.10	PASS
34	0.01	0.003	0.10	PASS
35	0.00	0.004	0.10	PASS
36	0.00	0.003	0.10	PASS
37	0.04	0.021	0.10	PASS
38	0.00	0.003	0.10	PASS
39	0.04	0.021	0.10	PASS
40	0.00	0.003	0.10	PASS


Waveform Graph
200mA/div
800 mA
400 V
0
0
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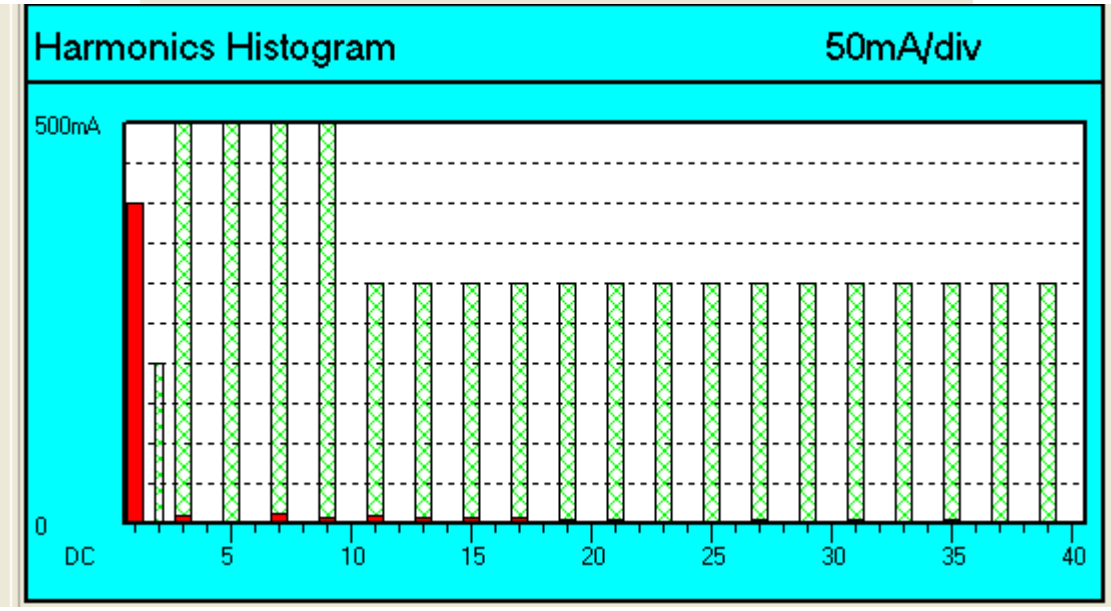
-400 V
0
120
240
Deg
360


Harmonics Histogram
50mA/div
500mA
0
DC
5
10
15
20
25
30
35
40

100W.TXT

HA-PC Link Plus. Software v3.01. Firmware v3.02
Report Number : 129
Tested On : MAY 29, 2019 11:58 for 150 Seconds.
Equipment Under Test :
Serial Number : 100W
Tested by : yuan yuxiang

Supply Voltage : 228.8 to 229.4 Vrms 324.1 Vpk Frequency : 49.98 to 50.00 Hz
Supply Meets EN Requirements

Load Power : 0.00 to 92.00 W 92.00 VA Power Factor 0.998
Load Current : 0.3 to 401.9 mArms 0.2 to 540.8 mApk Crest Factor 1.343

Measurement Standard : EN61000-4-7:2002+A1:2009
Limits Applied : EN61000-3-2:2014 Class C Limits >25W for 10.000A at 0.900 PF.

Harmonic Number	Limit Current mA	Average (filtered) mA	% Limit	max. Value (Filtered) mA	% Limit	Assessment
Fundamental :		401.2				
2 :	200.0	0.2	0.1	0.24	0.1	Pass
3 :	2700.2	10.2	0.4	10.38	0.4	Pass
4 :	-	0.1	-	0.15	-	-
5 :	1000.0	1.6	0.2	1.73	0.2	Pass
6 :	-	0.1	-	0.11	-	-
7 :	700.0	12.4	1.8	12.49	1.8	Pass
8 :	-	0.1	-	0.08	-	-
9 :	500.0	6.3	1.3	6.40	1.3	Pass
10 :	-	0.1	-	0.06	-	-
11 :	300.0	11.1	3.7	11.10	3.7	Pass
12 :	-	0.1	-	0.08	-	-
13 :	300.0	6.3	2.1	6.31	2.1	Pass
14 :	-	0.0	-	0.08	-	-
15 :	300.0	7.4	2.5	7.48	2.5	Pass
16 :	-	0.0	-	0.04	-	-
17 :	300.0	6.7	2.2	6.76	2.3	Pass
18 :	-	0.0	-	0.08	-	-
19 :	300.0	5.3	1.8	5.37	1.8	Pass
20 :	-	0.0	-	0.06	-	-
21 :	300.0	5.1	1.7	5.17	1.7	Pass
22 :	-	0.1	-	0.06	-	-
23 :	300.0	1.3	0.4	1.37	0.5	Pass
24 :	-	0.1	-	0.08	-	-
25 :	300.0	3.6	1.2	3.61	1.2	Pass
26 :	-	0.0	-	0.08	-	-
27 :	300.0	4.9	1.6	4.99	1.7	Pass
28 :	-	0.1	-	0.11	-	-
29 :	300.0	0.2	0.1	0.24	0.1	Pass

Page 1

100W.TXT

30 :	-	0.1	-	0.13	-	-
31 :	300.0	6.1	2.0	6.09	2.0	Pass
32 :	-	0.1	-	0.08	-	-
33 :	300.0	2.1	0.7	2.24	0.7	Pass
34 :	-	0.1	-	0.13	-	-
35 :	300.0	4.0	1.3	4.06	1.4	Pass
36 :	-	0.1	-	0.11	-	-
37 :	300.0	0.3	0.1	0.35	0.1	Pass
38 :	-	0.1	-	0.11	-	-
39 :	300.0	2.3	0.8	2.31	0.8	Pass
40 :	-	0.1	-	0.13	-	-
21 - 39 :	948.7	11.3	1.2	11.35	1.2	-

100W_psq.txt

HA-PC Link Plus. Software v3.01. Firmware v3.02
Report Number : 129
Tested On : MAY 29, 2019 11:58 for 150 Seconds.
Equipment Under Test :
Serial Number : 100W
Tested by : yuan yuxiang

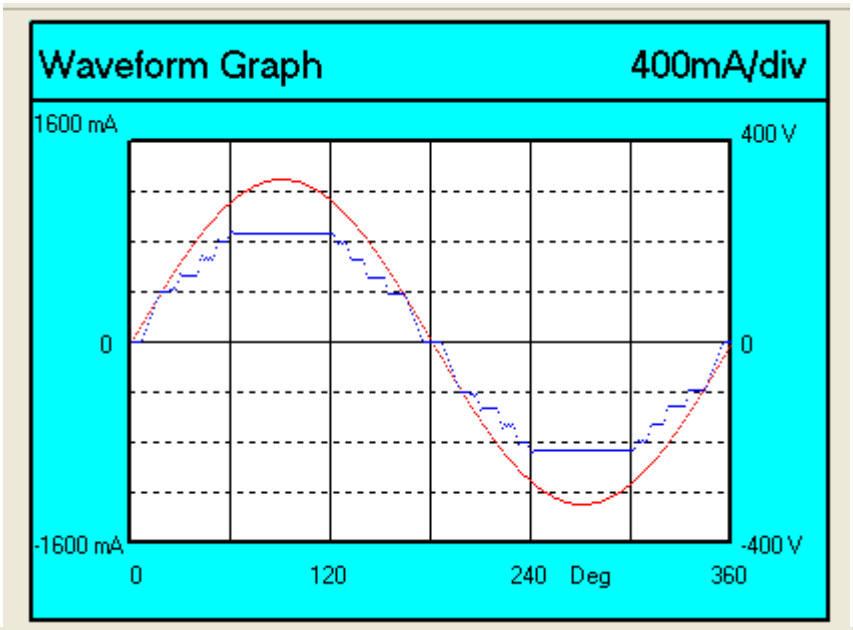
	Nominal	Measured Low	Measured High	Deviation	Allowed Deviation	Result
Supply Voltage :	230	229.08	229.33	-0.92	4.60	PASS
Supply Frequency :	50	49.99	50.00	-0.01	0.25	PASS
Crest Phase :	90.0	90.5	91.4	1.4	3.0	PASS
Crest Factor :	1.414	1.412	1.413	-0.002	-0.014/+0.006	PASS
Fundamental Voltage :	229.20	-	-	-	-	-

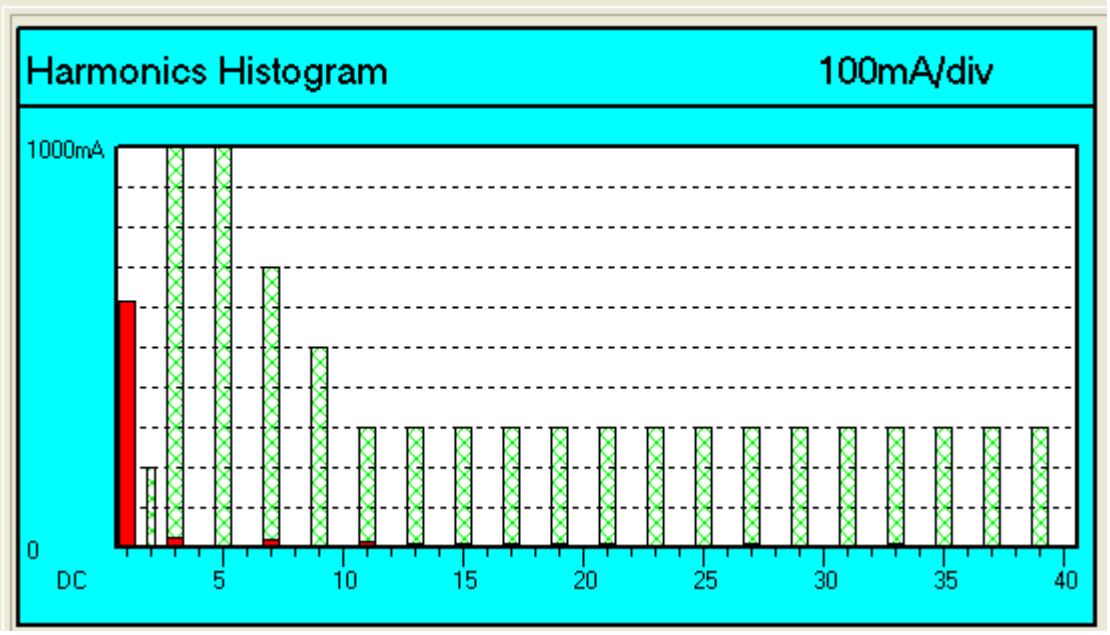
Harmonic	Harmonic Voltage	Harmonic Ratio	Limit	Result
2	0.11	0.071	0.20	PASS
3	0.02	0.014	0.90	PASS
4	0.01	0.011	0.20	PASS
5	0.08	0.042	0.40	PASS
6	0.01	0.009	0.20	PASS
7	0.07	0.031	0.30	PASS
8	0.01	0.004	0.20	PASS
9	0.03	0.020	0.20	PASS
10	0.00	0.004	0.10	PASS
11	0.03	0.017	0.10	PASS
12	0.00	0.003	0.10	PASS
13	0.00	0.003	0.10	PASS
14	0.00	0.003	0.10	PASS
15	0.05	0.031	0.10	PASS
16	0.00	0.003	0.10	PASS
17	0.00	0.003	0.10	PASS
18	0.01	0.003	0.10	PASS
19	0.03	0.021	0.10	PASS
20	0.00	0.003	0.10	PASS
21	0.04	0.021	0.10	PASS
22	0.00	0.003	0.10	PASS
23	0.01	0.004	0.10	PASS
24	0.00	0.003	0.10	PASS
25	0.03	0.019	0.10	PASS
26	0.00	0.003	0.10	PASS
27	0.04	0.024	0.10	PASS
28	0.01	0.003	0.10	PASS
29	0.01	0.003	0.10	PASS
30	0.01	0.003	0.10	PASS

Page 1

100W_psq.txt

31	0.00	0.005	0.10	PASS
32	0.00	0.001	0.10	PASS
33	0.01	0.004	0.10	PASS
34	0.00	0.003	0.10	PASS
35	0.00	0.004	0.10	PASS
36	0.00	0.003	0.10	PASS
37	0.04	0.021	0.10	PASS
38	0.00	0.003	0.10	PASS
39	0.04	0.019	0.10	PASS
40	0.00	0.003	0.10	PASS


Waveform Graph
400mA/div
1600 mA
400 V
0
0
-1600 mA
-400 V
0
120
240
Deg
360


Harmonics Histogram
100mA/div
1000mA
0
DC
5
10
15
20
25
30
35
40

150W.TXT

HA-PC Link Plus. Software v3.01. Firmware v3.02
Report Number : 130
Tested On :MAY 29, 2019 13:54 for 150 Seconds.
Equipment Under Test : LED Street light
Serial Number : 150W
Tested by : yuan yuxiang

Supply Voltage : 228.2 to 229.0 Vrms 323.3 Vpk Frequency : 50.00 Hz
Supply Meets EN Requirements

Load Power : 139.82 to 140.62 W 141.00 VA Power Factor 0.997
Load Current : 614.0 to 616.0 mArms 813.3 to 815.0 mApk Crest Factor 1.322

Measurement Standard : EN61000-4-7:2002+A1:2009
Limits Applied : EN61000-3-2:2014 Class C Limits >25W for 10.000A at 0.900 PF.

Harmonic Number	Limit Current mA	Average (filtered) mA	% Limit	max. Value (Filtered) mA	% Limit	Assessment
Fundamental :		615.4				
2 :	200.0	0.2	0.1	0.3	0.2	Pass
3 :	2700.2	23.1	0.9	23.4	0.9	Pass
4 :	-	0.1	-	0.2	-	-
5 :	1000.0	5.7	0.6	6.0	0.6	Pass
6 :	-	0.1	-	0.1	-	-
7 :	700.0	19.5	2.8	19.5	2.8	Pass
8 :	-	0.1	-	0.1	-	-
9 :	500.0	4.9	1.0	5.0	1.0	Pass
10 :	-	0.1	-	0.1	-	-
11 :	300.0	17.0	5.7	17.0	5.7	Pass
12 :	-	0.1	-	0.0	-	-
13 :	300.0	9.9	3.3	9.9	3.3	Pass
14 :	-	0.1	-	0.1	-	-
15 :	300.0	10.7	3.6	10.8	3.6	Pass
16 :	-	0.0	-	0.0	-	-
17 :	300.0	11.8	3.9	11.8	3.9	Pass
18 :	-	0.1	-	0.1	-	-
19 :	300.0	8.7	2.9	8.7	2.9	Pass
20 :	-	0.1	-	0.1	-	-
21 :	300.0	8.4	2.8	8.4	2.8	Pass
22 :	-	0.1	-	0.1	-	-
23 :	300.0	5.0	1.7	5.0	1.7	Pass
24 :	-	0.1	-	0.1	-	-
25 :	300.0	3.0	1.0	3.1	1.0	Pass
26 :	-	0.1	-	0.1	-	-
27 :	300.0	7.8	2.6	7.8	2.6	Pass
28 :	-	0.1	-	0.1	-	-
29 :	300.0	4.7	1.6	4.8	1.6	Pass

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150W.TXT

30 :	-	0.1	-	0.2	-	-
31 :	300.0	5.0	1.7	5.1	1.7	Pass
32 :	-	0.1	-	0.1	-	-
33 :	300.0	7.9	2.6	8.0	2.7	Pass
34 :	-	0.1	-	0.1	-	-
35 :	300.0	2.2	0.7	2.4	0.8	Pass
36 :	-	0.1	-	0.1	-	-
37 :	300.0	5.8	1.9	5.9	2.0	Pass
38 :	-	0.1	-	0.2	-	-
39 :	300.0	2.5	0.8	2.7	0.9	Pass
40 :	-	0.1	-	0.1	-	-
21 - 39 :	948.7	17.9	1.9	17.9	1.9	-

150W_psq.txt

HA-PC Link Plus. Software v3.01. Firmware v3.02
Report Number : 130
Tested On : MAY 29, 2019 13:54 for 150 Seconds.
Equipment Under Test : LED Street light
Serial Number : 150W
Tested by : yuan yuxiang

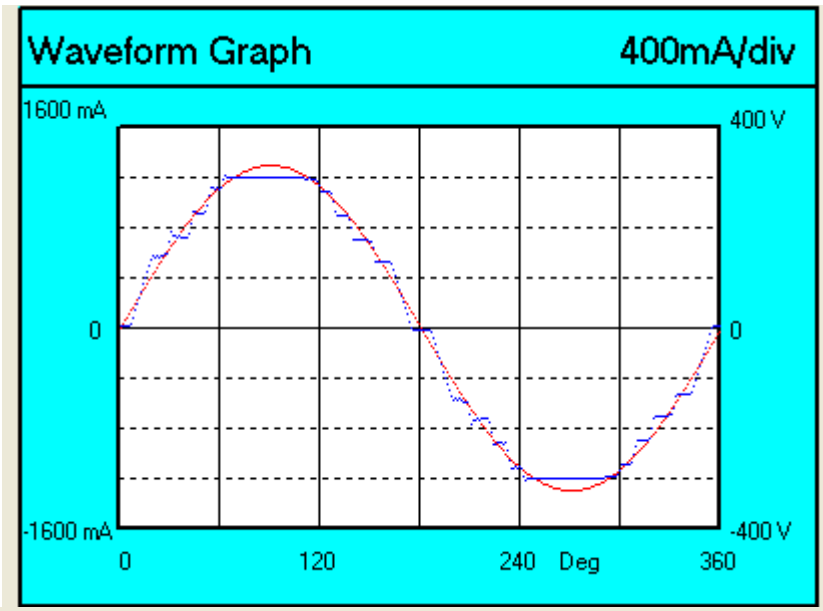
	Nominal	Measured Low	Measured High	Deviation	Allowed Deviation	Result
Supply Voltage :	230	228.88	229.22	-1.11	4.60	PASS
Supply Frequency :	50	49.99	50.00	-0.01	0.25	PASS
Crest Phase :	90.0	89.6	91.3	1.3	3.0	PASS
Crest Factor :	1.414	1.412	1.413	-0.002	-0.014/+0.006	PASS
Fundamental Voltage :	229.13	-	-	-	-	-

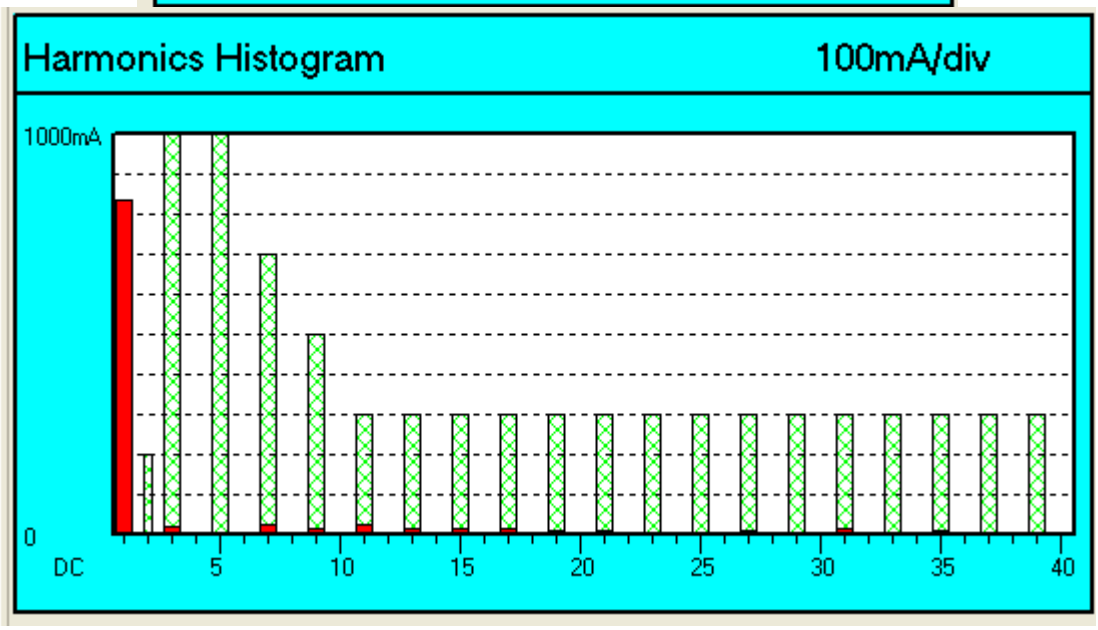
Harmonic	Harmonic Voltage	Harmonic Ratio	Limit	Result
2	0.11	0.067	0.20	PASS
3	0.02	0.020	0.90	PASS
4	0.01	0.019	0.20	PASS
5	0.08	0.047	0.40	PASS
6	0.01	0.011	0.20	PASS
7	0.07	0.034	0.30	PASS
8	0.01	0.008	0.20	PASS
9	0.03	0.019	0.20	PASS
10	0.01	0.004	0.10	PASS
11	0.03	0.017	0.10	PASS
12	0.00	0.005	0.10	PASS
13	0.00	0.004	0.10	PASS
14	0.00	0.004	0.10	PASS
15	0.05	0.029	0.10	PASS
16	0.00	0.003	0.10	PASS
17	0.01	0.008	0.10	PASS
18	0.01	0.005	0.10	PASS
19	0.04	0.024	0.10	PASS
20	0.01	0.004	0.10	PASS
21	0.03	0.021	0.10	PASS
22	0.01	0.003	0.10	PASS
23	0.01	0.008	0.10	PASS
24	0.00	0.003	0.10	PASS
25	0.03	0.019	0.10	PASS
26	0.00	0.003	0.10	PASS
27	0.04	0.024	0.10	PASS
28	0.00	0.003	0.10	PASS
29	0.01	0.006	0.10	PASS
30	0.01	0.005	0.10	PASS

Page 1

150W_psq.txt

31	0.01	0.008	0.10	PASS
32	0.00	0.003	0.10	PASS
33	0.01	0.010	0.10	PASS
34	0.00	0.003	0.10	PASS
35	0.00	0.004	0.10	PASS
36	0.00	0.003	0.10	PASS
37	0.04	0.025	0.10	PASS
38	0.00	0.003	0.10	PASS
39	0.04	0.024	0.10	PASS
40	0.00	0.003	0.10	PASS


Waveform Graph
400mA/div
1600 mA
400 V
0
0
-1600 mA
-400 V
0
120
240
Deg
360


Harmonics Histogram
100mA/div
1000mA
0
DC
5
10
15
20
25
30
35
40

200W H.TXT

HA-PC Link Plus. Software v3.01. Firmware v3.02
Report Number : 131
Tested On : MAY 29, 2019 13:55 for 150 Seconds.
Equipment Under Test : LED Street light
Serial Number : 200W
Tested by : yuan yuxiang

Supply Voltage : 228.9 to 229.5 Vrms 324.0 Vpk Frequency : 50.00 Hz
Supply Meets EN Requirements

Load Power : 0.01 to 190.70 W 191.11 VA Power Factor 0.998
Load Current : 0.2 to 833.8 mArms 0.2 to 1126.2 mApk Crest Factor 1.351

Measurement Standard : EN61000-4-7:2002+A1:2009
Limits Applied : EN61000-3-2:2014 Class C Limits >25W for 10.000A at 0.900 PF.

Harmonic Number	Limit Current mA	Average (filtered) mA	% Limit	max. Value (Filtered) mA	% Limit	Assessment
Fundamental :		833.4				
2 :	200.0	0.3	0.2	0.5	0.3	Pass
3 :	2700.2	18.3	0.7	18.8	0.7	Pass
4 :	-	0.2	-	0.3	-	-
5 :	1000.0	2.5	0.3	2.7	0.3	Pass
6 :	-	0.1	-	0.1	-	-
7 :	700.0	24.2	3.5	24.2	3.5	Pass
8 :	-	0.1	-	0.1	-	-
9 :	500.0	15.7	3.1	15.9	3.2	Pass
10 :	-	0.1	-	0.1	-	-
11 :	300.0	22.8	7.6	23.0	7.7	Pass
12 :	-	0.1	-	0.1	-	-
13 :	300.0	13.0	4.3	13.0	4.3	Pass
14 :	-	0.1	-	0.1	-	-
15 :	300.0	15.3	5.1	15.4	5.1	Pass
16 :	-	0.1	-	0.1	-	-
17 :	300.0	12.8	4.3	12.8	4.3	Pass
18 :	-	0.1	-	0.2	-	-
19 :	300.0	10.5	3.5	10.6	3.5	Pass
20 :	-	0.1	-	0.1	-	-
21 :	300.0	9.7	3.2	9.7	3.2	Pass
22 :	-	0.1	-	0.1	-	-
23 :	300.0	1.6	0.5	1.7	0.6	Pass
24 :	-	0.1	-	0.1	-	-
25 :	300.0	7.7	2.6	7.8	2.6	Pass
26 :	-	0.1	-	0.1	-	-
27 :	300.0	9.9	3.3	9.9	3.3	Pass
28 :	-	0.2	-	0.2	-	-
29 :	300.0	2.2	0.7	2.5	0.8	Pass

Page 1

200W H.TXT

30 :	-	0.1	-	0.2	-	-
31 :	300.0	13.8	4.6	13.8	4.6	Pass
32 :	-	0.1	-	0.2	-	-
33 :	300.0	2.0	0.7	2.6	0.9	Pass
34 :	-	0.2	-	0.2	-	-
35 :	300.0	8.5	2.8	8.5	2.8	Pass
36 :	-	0.1	-	0.3	-	-
37 :	300.0	2.1	0.7	2.6	0.9	Pass
38 :	-	0.1	-	0.2	-	-
39 :	300.0	2.8	0.9	3.1	1.0	Pass
40 :	-	0.1	-	0.2	-	-
21 - 39 :	948.7	23.2	2.4	23.2	2.4	-

200W H_psq.txt

HA-PC Link Plus. Software v3.01. Firmware v3.02
Report Number : 131
Tested On : MAY 29, 2019 13:55 for 150 Seconds.
Equipment Under Test : LED Street light
Serial Number : 200W
Tested by : yuan yuxiang

	Nominal	Measured Low	Measured High	Deviation	Allowed Deviation	Result
Supply Voltage	: 230	228.96	229.39	-1.03	4.60	PASS
Supply Frequency	: 50	49.99	50.00	-0.01	0.25	PASS
Crest Phase	: 90.0	88.9	91.2	1.2	3.0	PASS
Crest Factor	: 1.414	1.412	1.413	-0.002	-0.014/+0.006	PASS
Fundamental Voltage	: 229.33	-	-	-	-	-

Harmonic	Harmonic Voltage	Harmonic Ratio	Limit	Result
2	0.10	0.077	0.20	PASS
3	0.03	0.038	0.90	PASS
4	0.01	0.014	0.20	PASS
5	0.08	0.045	0.40	PASS
6	0.01	0.010	0.20	PASS
7	0.07	0.040	0.30	PASS
8	0.00	0.008	0.20	PASS
9	0.03	0.019	0.20	PASS
10	0.00	0.004	0.10	PASS
11	0.03	0.018	0.10	PASS
12	0.00	0.003	0.10	PASS
13	0.01	0.008	0.10	PASS
14	0.00	0.003	0.10	PASS
15	0.05	0.028	0.10	PASS
16	0.00	0.003	0.10	PASS
17	0.01	0.010	0.10	PASS
18	0.01	0.003	0.10	PASS
19	0.04	0.024	0.10	PASS
20	0.00	0.003	0.10	PASS
21	0.04	0.023	0.10	PASS
22	0.00	0.003	0.10	PASS
23	0.00	0.010	0.10	PASS
24	0.01	0.005	0.10	PASS
25	0.03	0.020	0.10	PASS
26	0.00	0.005	0.10	PASS
27	0.04	0.024	0.10	PASS
28	0.00	0.003	0.10	PASS
29	0.01	0.005	0.10	PASS
30	0.00	0.003	0.10	PASS

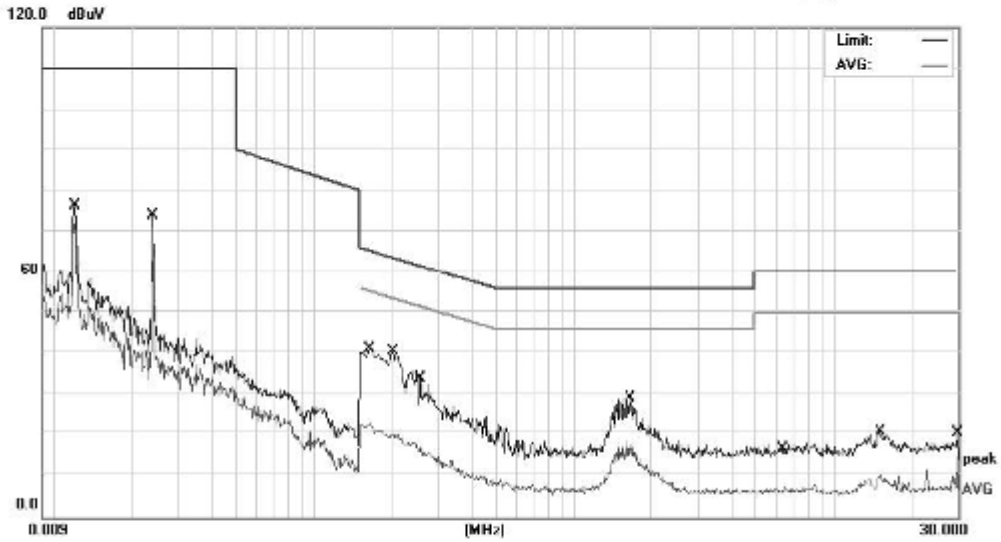
200W H_psq.txt

31	0.01	0.010	0.10	PASS
32	0.00	0.003	0.10	PASS
33	0.01	0.008	0.10	PASS
34	0.00	0.003	0.10	PASS
35	0.00	0.004	0.10	PASS
36	0.00	0.003	0.10	PASS
37	0.04	0.021	0.10	PASS
38	0.00	0.003	0.10	PASS
39	0.04	0.024	0.10	PASS
40	0.00	0.003	0.10	PASS

Address:World Standrd Certification&Testing Co., LTD
Tel:+86-755-26996192
Fax:+86-755-86376605

Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#1 Date: 2019/05/17 Time: 上午 10:33:16



Site site #1 Phase: N Temperature: 22
Limit: EN55015 Conduction(QP) Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-50W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.0120	65.60	10.78	76.38	110.0	-33.62	QP	
2		0.0240	63.18	10.74	73.92	110.0	-36.08	QP	
3		0.1620	30.84	10.45	41.29	65.36	-24.07	QP	
4		0.1620	12.50	10.45	22.95	55.36	-32.41	AVG	
5	*	0.2020	30.25	10.45	40.70	63.52	-22.82	QP	
6		0.2587	6.18	10.46	16.64	51.47	-34.83	AVG	
7		1.6460	18.64	10.65	29.29	56.00	-26.71	QP	
8		1.6460	6.95	10.65	17.60	46.00	-28.40	AVG	
9		6.5180	-3.45	10.77	7.32	50.00	-42.68	AVG	
10		15.1060	9.62	11.20	20.82	60.00	-39.18	QP	
11		15.2660	-0.70	11.19	10.49	50.00	-39.51	AVG	
12		29.7660	3.63	11.21	14.84	50.00	-35.16	AVG	

*Maximum data x Over limit !over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#1 *Page: 1* Engineer Signature:

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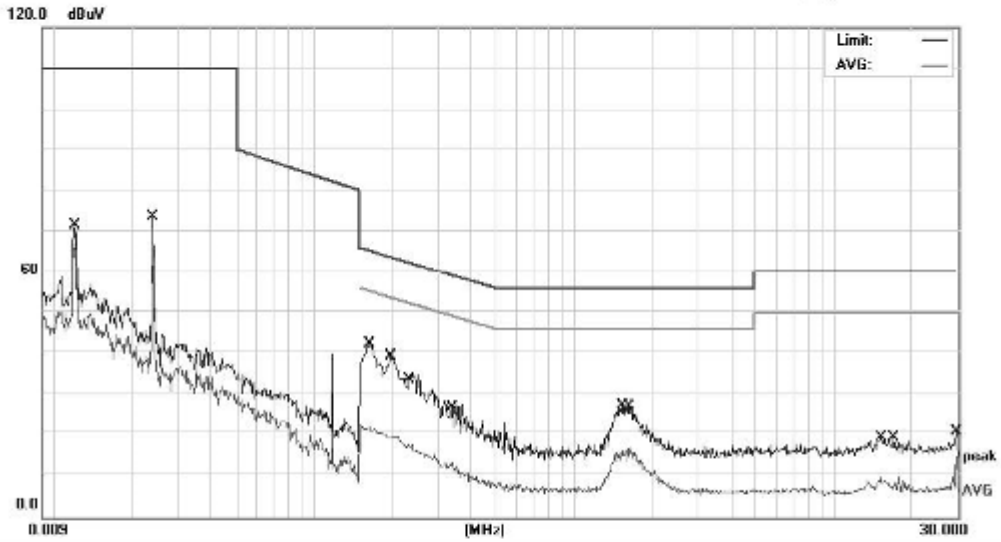
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#2 Date: 2019/05/17 Time: 上午 10:41:11



Site site #1 Phase: L1 Temperature: 22
Limit: EN55015 Conduction(QP) Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-50W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.0120	60.89	10.78	71.67	110.0	-38.33	QP	
2		0.0240	62.82	10.74	73.56	110.0	-36.44	QP	
3	*	0.1620	32.05	10.45	42.50	65.36	-22.86	QP	
4		0.1620	11.47	10.45	21.92	55.36	-33.44	AVG	
5		0.1980	28.88	10.45	39.33	63.69	-24.36	QP	
6		0.2300	7.29	10.48	17.75	52.45	-34.70	AVG	
7		0.3379	2.87	10.48	13.35	49.25	-35.90	AVG	
8		1.5260	16.92	10.63	27.55	56.00	-28.45	QP	
9		1.6460	6.38	10.65	17.03	46.00	-28.97	AVG	
10		15.1860	-1.37	11.19	9.82	50.00	-40.18	AVG	
11		17.0380	8.25	11.14	19.39	60.00	-40.61	QP	
12		29.7500	3.60	11.21	14.81	50.00	-35.19	AVG	

*Maximum data x Over limit !over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#2 *Page: 1* Engineer Signature:

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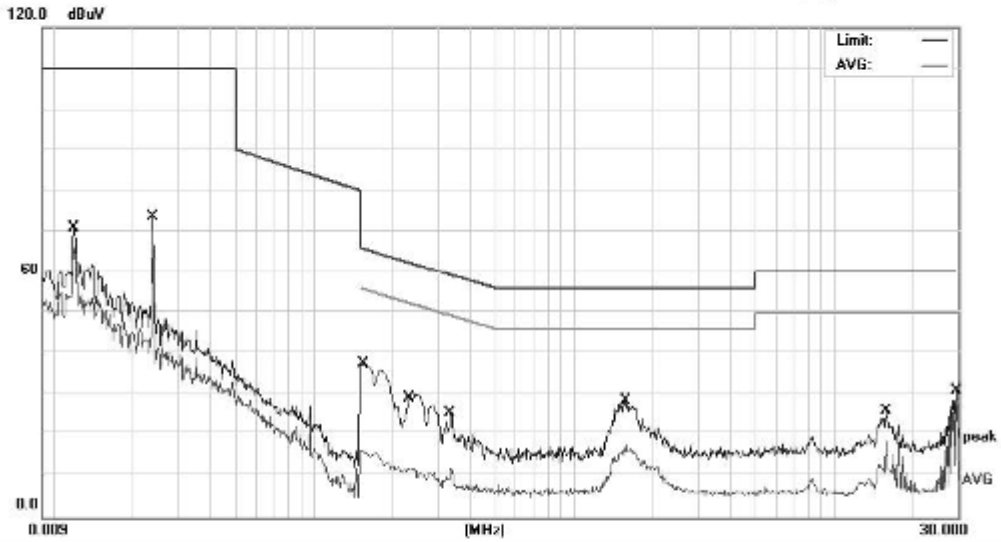
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#11 Date: 2019/06/03 Time: 上午 10:22:38



Site site #1 Phase: L1 Temperature: 22
Limit: EN55015 Conduction(QP) Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-100W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.0120	60.09	10.78	70.87	110.0	-39.13	QP	
2		0.0240	63.02	10.74	73.76	110.0	-36.24	QP	
3		0.1539	27.08	10.45	37.53	65.78	-28.25	QP	
4		0.1552	5.37	10.45	15.82	55.71	-39.89	AVG	
5		0.2300	1.49	10.46	11.95	52.45	-40.50	AVG	
6		0.3339	1.34	10.48	11.82	49.35	-37.53	AVG	
7		1.5740	6.79	10.64	17.43	46.00	-28.57	AVG	
8		1.5859	18.16	10.64	28.80	56.00	-27.20	QP	
9		15.9700	14.85	11.17	26.02	60.00	-33.98	QP	
10		15.9700	7.31	11.17	18.48	50.00	-31.52	AVG	
11		29.6660	19.73	11.20	30.93	60.00	-29.07	QP	
12	*	29.6660	16.84	11.20	28.04	50.00	-21.96	AVG	

*Maximum data x Over limit !over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#11 *Page: 1* Engineer Signature:

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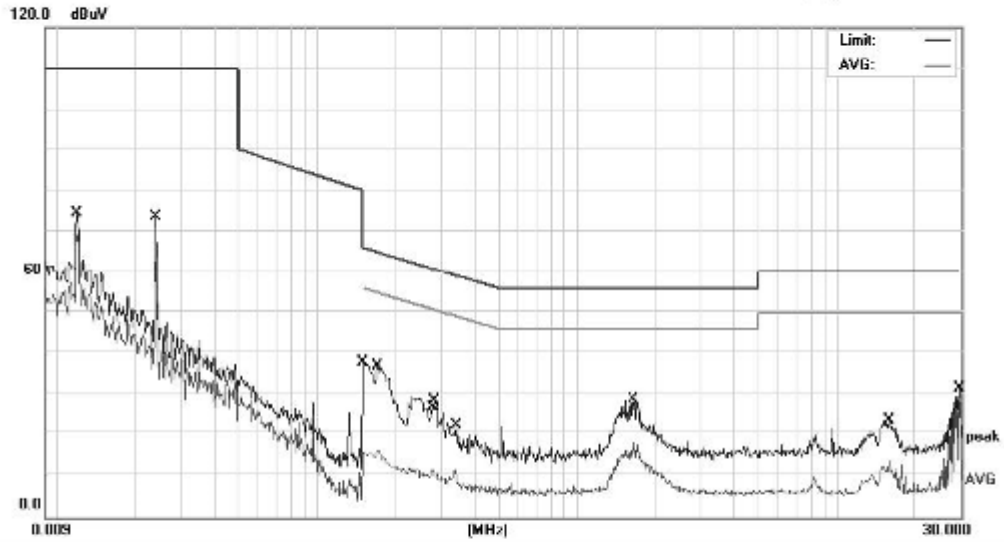
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#12 Date: 2019/06/03 Time: 上午 10:28:18



Site site #1 Phase: N Temperature: 22
Limit: EN55015 Conduction(QP) Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-100W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.0120	63.70	10.78	74.48	110.0	-35.52	QP	
2		0.0240	62.93	10.74	73.67	110.0	-36.33	QP	
3		0.1500	27.62	10.45	38.07	65.99	-27.92	QP	
4		0.1700	5.67	10.45	16.12	54.96	-38.84	AVG	
5		0.2779	1.22	10.47	11.69	50.88	-39.19	AVG	
6		0.2819	18.10	10.47	28.57	60.76	-32.19	QP	
7		0.3379	1.00	10.48	11.48	49.25	-37.77	AVG	
8		1.6460	18.17	10.65	28.82	56.00	-27.18	QP	
9		1.6700	7.50	10.68	18.16	46.00	-27.84	AVG	
10		15.9700	2.40	11.17	13.57	50.00	-36.43	AVG	
11		29.6660	20.48	11.20	31.68	60.00	-28.32	QP	
12	*	29.6660	17.98	11.20	29.18	50.00	-20.82	AVG	

*Maximum data x Over limit !over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#12 *Page: 1* Engineer Signature:

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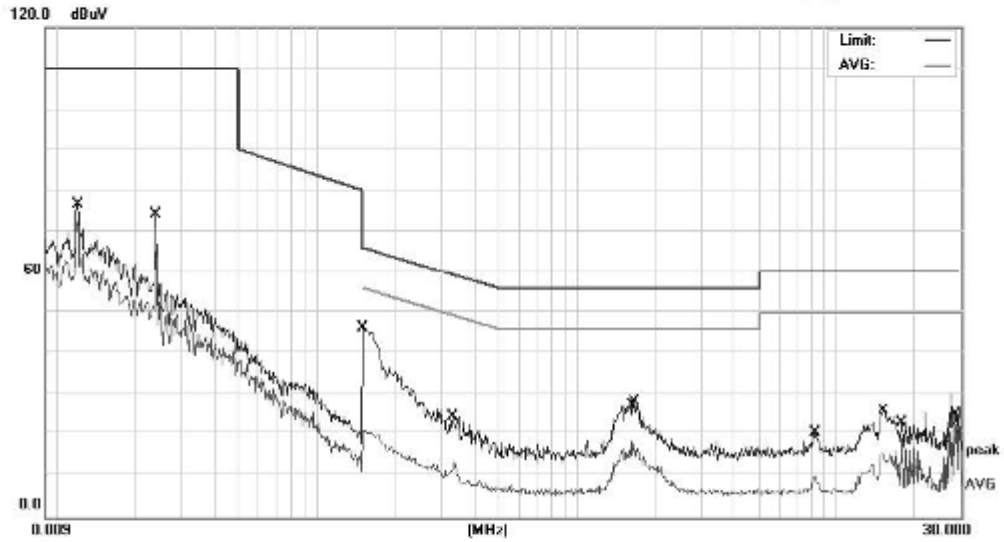
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#13 Date: 2019/06/03 Time: 上午 10:31:21



Site site #1 Phase: N Temperature: 22
Limit: EN55015 Conduction(QP) Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-150W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.0120	65.92	10.78	76.70	110.0	-33.30	QP	
2		0.0240	63.49	10.74	74.23	110.0	-35.77	QP	
3	*	0.1500	35.85	10.45	46.30	65.99	-19.69	QP	
4		0.1500	10.83	10.45	21.28	55.99	-34.71	AVG	
5		0.3339	2.61	10.48	13.09	49.35	-36.26	AVG	
6		1.6220	7.74	10.65	18.39	46.00	-27.61	AVG	
7		1.6700	17.57	10.66	28.23	56.00	-27.77	QP	
8		8.2180	-0.64	10.80	10.16	50.00	-39.84	AVG	
9		8.3260	9.77	10.80	20.57	60.00	-39.43	QP	
10		15.1660	14.68	11.19	25.87	60.00	-34.13	QP	
11		17.7260	7.97	11.12	19.09	50.00	-30.91	AVG	
12		26.6780	11.06	11.19	22.25	50.00	-27.75	AVG	

*Maximum data x Over limit !over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#13 *Page: 1* Engineer Signature:

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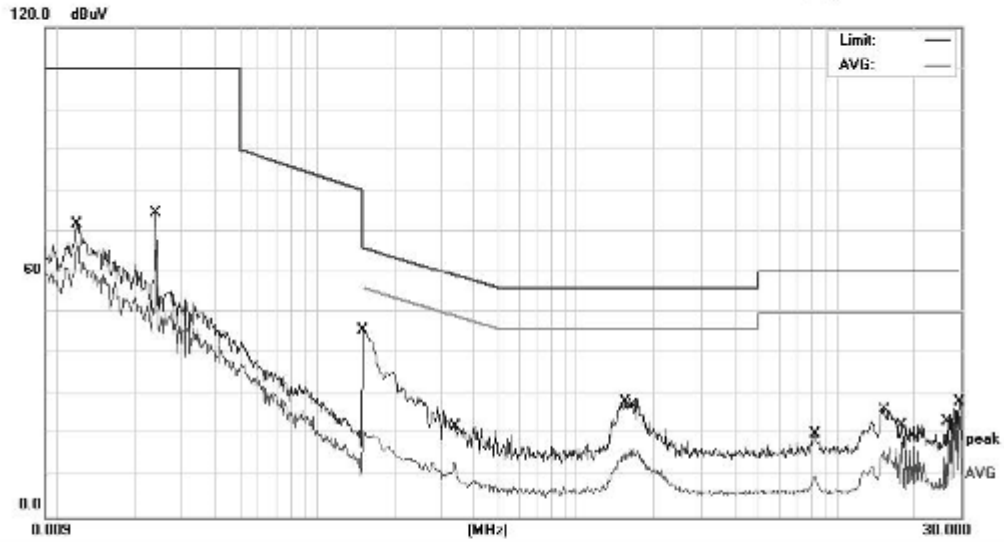
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#14 Date: 2019/06/03 Time: 上午 10:37:21



Site site #1 Phase: L1 Temperature: 22
Limit: EN55015 Conduction(QP) Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-150W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.0120	60.95	10.78	71.73	110.0	-38.27	QP	
2		0.0240	63.70	10.74	74.44	110.0	-35.56	QP	
3	*	0.1500	35.21	10.45	45.66	65.99	-20.33	QP	
4		0.1500	10.50	10.45	20.95	55.99	-35.04	AVG	
5		0.3339	2.93	10.48	13.41	49.35	-35.94	AVG	
6		1.5300	17.77	10.63	28.40	56.00	-27.60	QP	
7		1.6500	6.13	10.65	16.78	46.00	-29.22	AVG	
8		8.2180	-0.72	10.80	10.08	50.00	-39.92	AVG	
9		15.2060	14.96	11.19	26.15	60.00	-33.85	QP	
10		17.7099	7.09	11.12	18.21	50.00	-31.79	AVG	
11		26.4060	12.23	11.15	23.38	60.00	-36.62	QP	
12		29.6300	13.39	11.20	24.59	50.00	-25.41	AVG	

*Maximum data x Over limit !over margin (Reference Only

 Engineer Signature:

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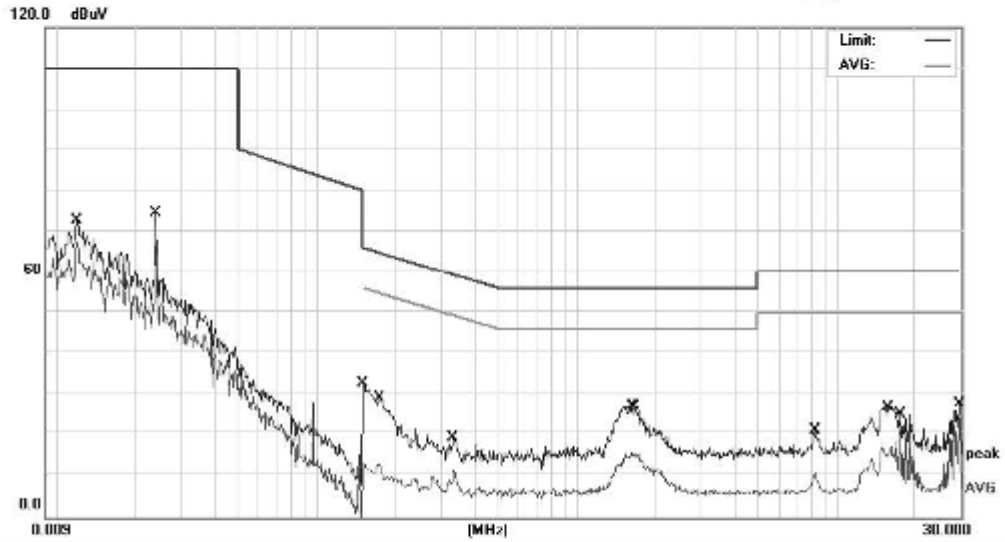
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#15 Date: 2019/06/03 Time: 上午 10:41:13



Site site #1 Phase: L1 Temperature: 22
Limit: EN55015 Conduction(QP) Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-200W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.0120	62.05	10.78	72.83	110.0	-37.17	QP	
2		0.0240	63.86	10.74	74.60	110.0	-35.40	QP	
3		0.1500	22.47	10.45	32.92	65.99	-33.07	QP	
4		0.1740	2.71	10.45	13.16	54.76	-41.60	AVG	
5		0.3339	1.07	10.48	11.55	49.35	-37.80	AVG	
6		1.6260	4.99	10.65	15.64	46.00	-30.36	AVG	
7		1.6620	16.54	10.66	27.20	56.00	-28.80	QP	
8		8.2220	0.30	10.80	11.10	50.00	-38.90	AVG	
9		15.9220	15.79	11.17	26.96	60.00	-33.04	QP	
10		17.7020	9.88	11.12	21.00	50.00	-29.00	AVG	
11		29.6020	16.50	11.20	27.70	60.00	-32.30	QP	
12	*	29.6020	13.03	11.20	24.23	50.00	-25.77	AVG	

*Maximum data x Over limit !over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#15 *Page: 1* Engineer Signature:

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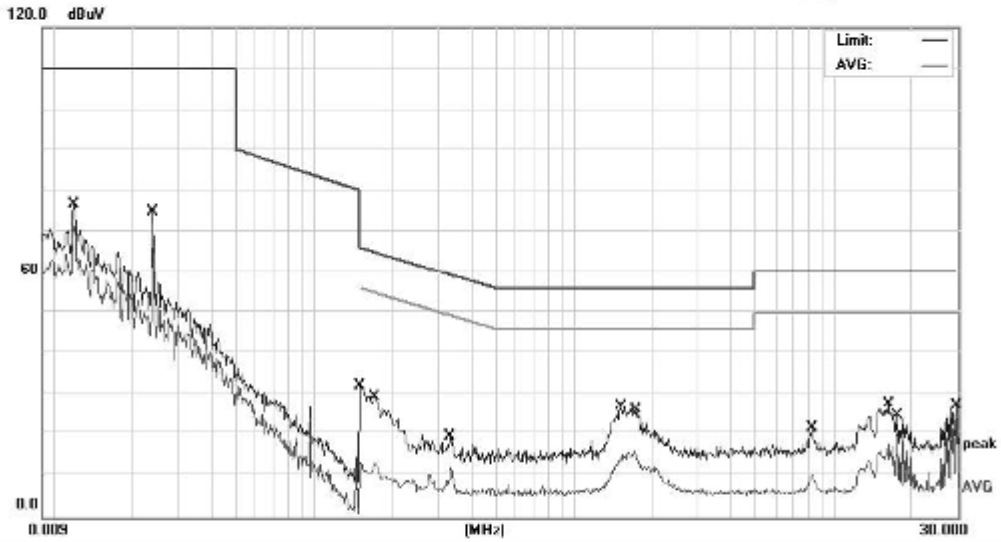
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#16 Date: 2019/06/03 Time: 上午 10:48:03



Site site #1 Phase: N Temperature: 22
Limit: EN55015 Conduction(QP) Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-200W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuV	dB	dBuV	dBuV	dB	Detector	Comment
1		0.0120	65.74	10.78	76.52	110.0	-33.48	QP	
2		0.0240	64.06	10.74	74.80	110.0	-35.20	QP	
3		0.1500	21.68	10.45	32.13	65.99	-33.86	QP	
4		0.1700	2.50	10.45	12.95	54.96	-42.01	AVG	
5		0.3339	1.69	10.48	12.17	49.35	-37.18	AVG	
6		1.5080	16.58	10.63	27.21	56.00	-28.79	QP	
7		1.7220	5.49	10.67	16.16	46.00	-29.84	AVG	
8		8.2340	-0.51	10.80	10.29	50.00	-39.71	AVG	
9		16.3020	16.62	11.16	27.78	60.00	-32.22	QP	
10		17.6940	9.09	11.12	20.21	50.00	-29.79	AVG	
11		29.5900	16.34	11.20	27.54	60.00	-32.46	QP	
12	*	29.5900	13.47	11.20	24.67	50.00	-25.33	AVG	

*Maximum data x Over limit !over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#16 *Page: 1* Engineer Signature:

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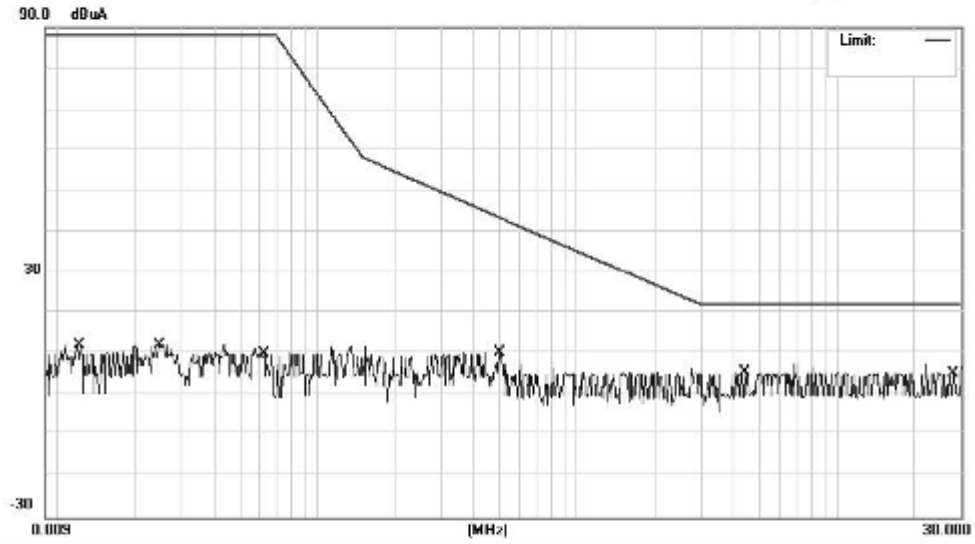
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#17 Date: 2019/05/31 Time: 下午 03:55:00



Site site #1 Phase: X Temperature: 22
Limit: EN55015 RADIATED ELECTROMAGNETIC Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-50W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuA	dB	dBuA	dBuA	dB	Detector	Comment
1		0.0122	12.09	0.07	12.16	88.00	-75.84	QP	
2		0.0249	12.04	0.06	12.10	88.00	-75.90	QP	
3		0.0628	10.01	0.06	10.07	88.00	-77.93	QP	
4		0.5020	10.09	0.15	10.24	43.48	-33.24	QP	
5	*	4.4020	5.47	0.14	5.61	22.00	-16.39	QP	
6		28.0940	4.93	0.30	5.23	22.00	-16.77	QP	

*Maximum data x Over limit l over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#17 *Page: 1* Engineer Signature: QIN

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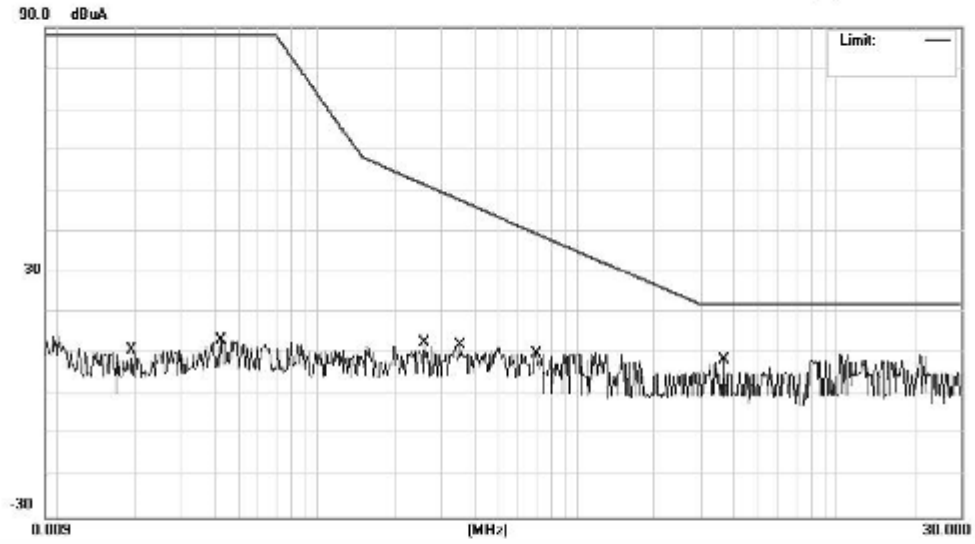
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#18 Date: 2019/05/31 Time: 下午 04:03:09



Site site #1 Phase: Y Temperature: 22
Limit: EN55015 RADIATED ELECTROMAGNETIC Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-50W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuA	dB	dBuA	dBuA	dB	Detector	Comment
1		0.0193	10.83	0.07	10.90	88.00	-77.10	QP	
2		0.0425	13.40	0.05	13.45	88.00	-74.55	QP	
3		0.2584	12.60	0.13	12.73	51.46	-38.73	QP	
4		0.3548	11.88	0.14	12.02	47.65	-35.63	QP	
5		0.6980	9.99	0.17	10.16	39.52	-29.36	QP	
6	*	3.6500	8.38	0.15	8.53	22.00	-13.47	QP	

*Maximum data x Over limit l over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#18 Page: 1 Engineer Signature: QIN

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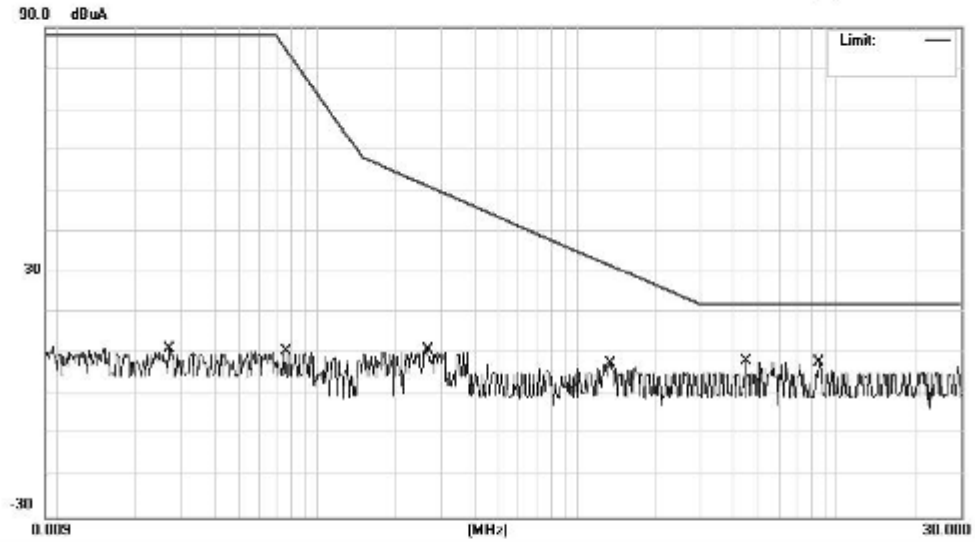
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#19 Date: 2019/05/31 Time: 下午 04:08:10



Site site #1 Phase: Z Temperature: 22
Limit: EN55015 RADIATED ELECTROMAGNETIC Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-50W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuA	dB	dBuA	dBuA	dB	Detector	Comment
1		0.0269	11.21	0.06	11.27	88.00	-76.73	QP	
2		0.0764	10.51	0.06	10.57	84.55	-73.98	QP	
3		0.2671	10.94	0.13	11.07	51.06	-39.99	QP	
4		1.3420	7.43	0.17	7.60	31.67	-24.07	QP	
5	*	4.4540	8.20	0.14	8.34	22.00	-13.66	QP	
6		8.5579	7.78	0.20	7.98	22.00	-14.02	QP	

*Maximum data x Over limit l over margin (Reference Only

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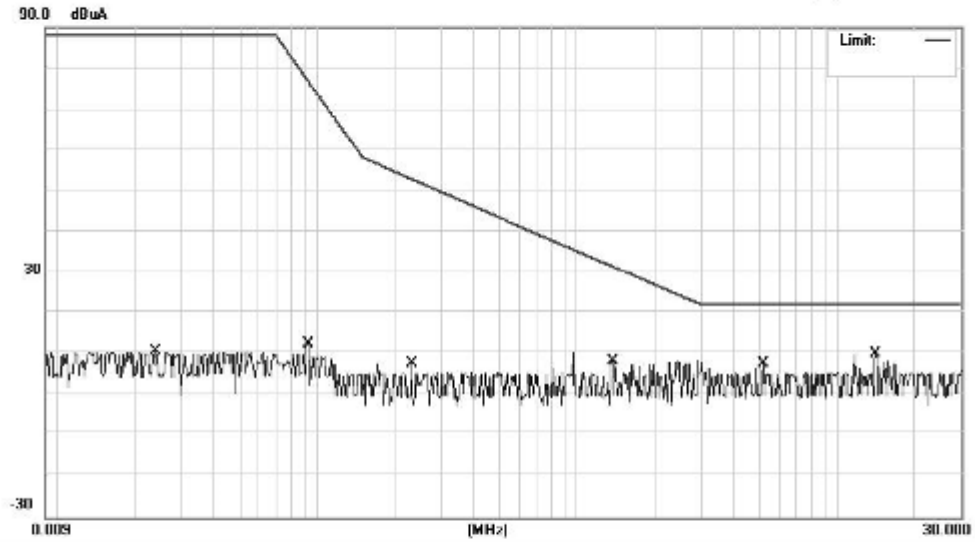
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#20 Date: 2019/05/31 Time: 下午 04:15:00



Site site #1 Phase: X Temperature: 22
Limit: EN55015 RADIATED ELECTROMAGNETIC Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-100W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuA	dB	dBuA	dBuA	dB	Detector	Comment
1		0.0240	10.49	0.06	10.55	88.00	-77.45	QP	
2		0.0929	12.30	0.07	12.37	76.85	-64.48	QP	
3		0.2308	7.54	0.13	7.67	52.81	-45.14	QP	
4		1.3700	8.22	0.17	8.39	31.42	-23.03	QP	
5		5.2259	7.56	0.14	7.70	22.00	-14.30	QP	
6	*	14.0780	9.80	0.23	10.03	22.00	-11.97	QP	

*Maximum data x Over limit l over margin (Reference Only

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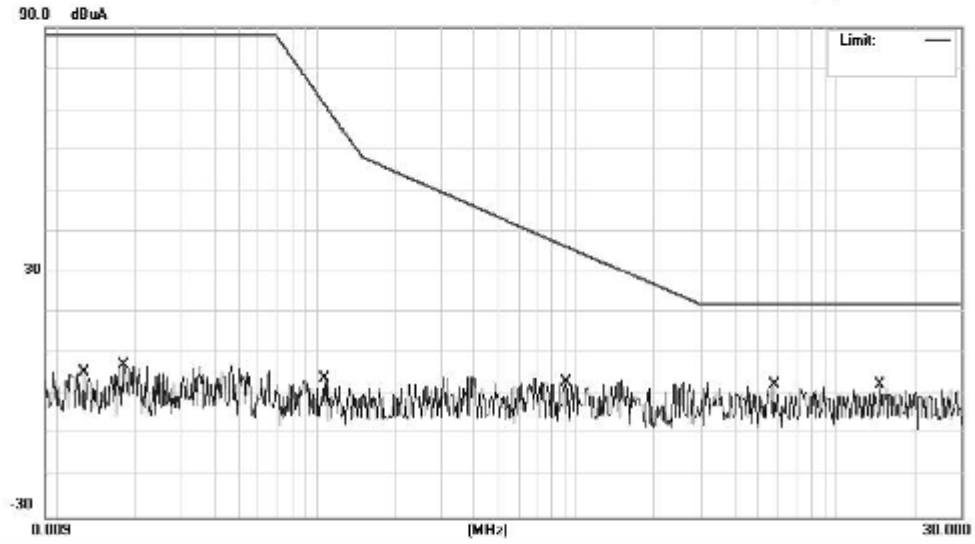
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#21 Date: 2019/05/31 Time: 下午 04:23:09



Site site #1 Phase: Y Temperature: 22
Limit: EN55015 RADIATED ELECTROMAGNETIC Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-100W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuA	dB	dBuA	dBuA	dB	Detector	Comment
1		0.0126	5.45	0.07	5.52	88.00	-82.48	QP	
2		0.0177	7.17	0.07	7.24	88.00	-80.76	QP	
3		0.1060	3.94	0.08	4.02	71.65	-67.63	QP	
4		0.9060	3.02	0.17	3.19	36.39	-33.20	QP	
5		5.7660	2.26	0.16	2.42	22.00	-19.58	QP	
6	*	14.6059	2.28	0.24	2.52	22.00	-19.48	QP	

*Maximum data x Over limit l over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#21 *Page: 1* Engineer Signature: QIN

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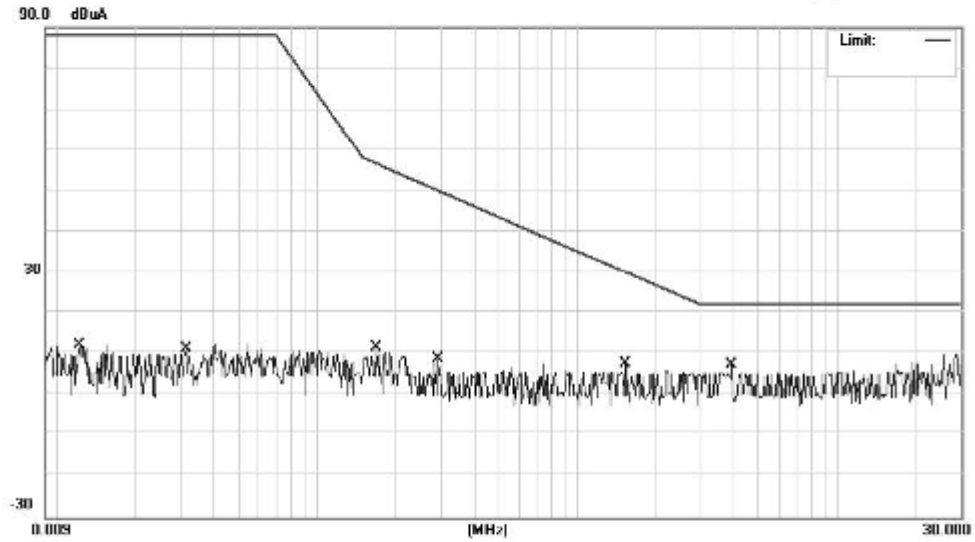
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#22 Date: 2019/05/31 Time: 下午 04:38:03



Site site #1 Phase: Z Temperature: 22
Limit: EN55015 RADIATED ELECTROMAGNETIC Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-100W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuA	dB	dBuA	dBuA	dB	Detector	Comment
1		0.0122	12.22	0.07	12.29	88.00	-75.71	QP	
2		0.0314	11.32	0.06	11.38	88.00	-76.62	QP	
3		0.1668	11.29	0.11	11.40	56.72	-45.32	QP	
4		0.2940	8.59	0.14	8.73	49.91	-41.18	QP	
5		1.5180	7.55	0.16	7.71	30.18	-22.47	QP	
6	*	3.9380	7.07	0.15	7.22	22.00	-14.78	QP	

*Maximum data x Over limit l over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#22 *Page: 1* Engineer Signature: QIN

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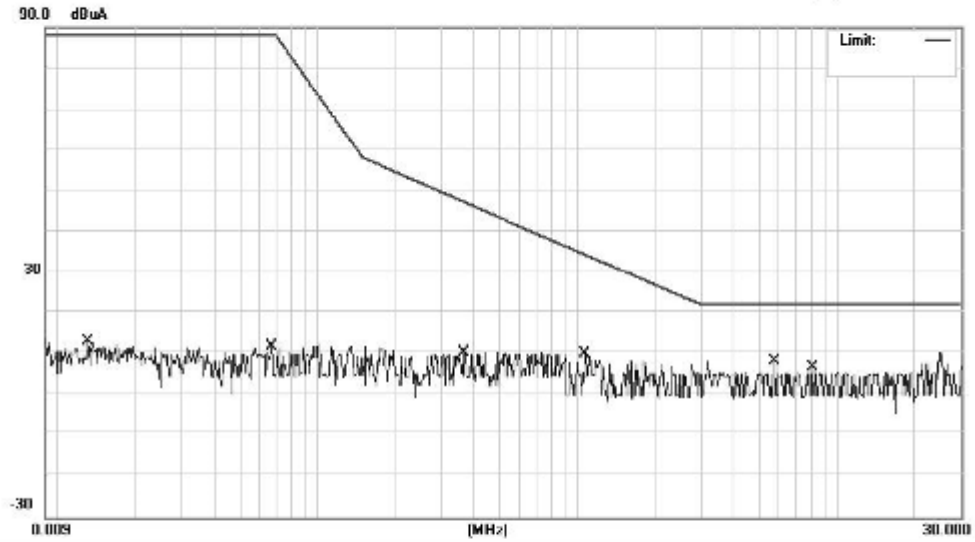
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#23 Date: 2019/05/31 Time: 下午 04:46:01



Site site #1 Phase: X Temperature: 22
Limit: EN55015 RADIATED ELECTROMAGNETIC Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-150W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuA	dB	dBuA	dBuA	dB	Detector	Comment
1		0.0131	13.02	0.07	13.09	88.00	-74.91	QP	
2		0.0670	11.70	0.06	11.76	88.00	-76.24	QP	
3		0.3659	10.30	0.14	10.44	47.28	-36.84	QP	
4		1.0780	9.87	0.17	10.04	34.30	-24.26	QP	
5	*	5.7940	7.95	0.16	8.11	22.00	-13.89	QP	
6		8.0899	6.53	0.19	6.72	22.00	-15.28	QP	

*Maximum data x Over limit !over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#23 *Page: 1* Engineer Signature: QIN

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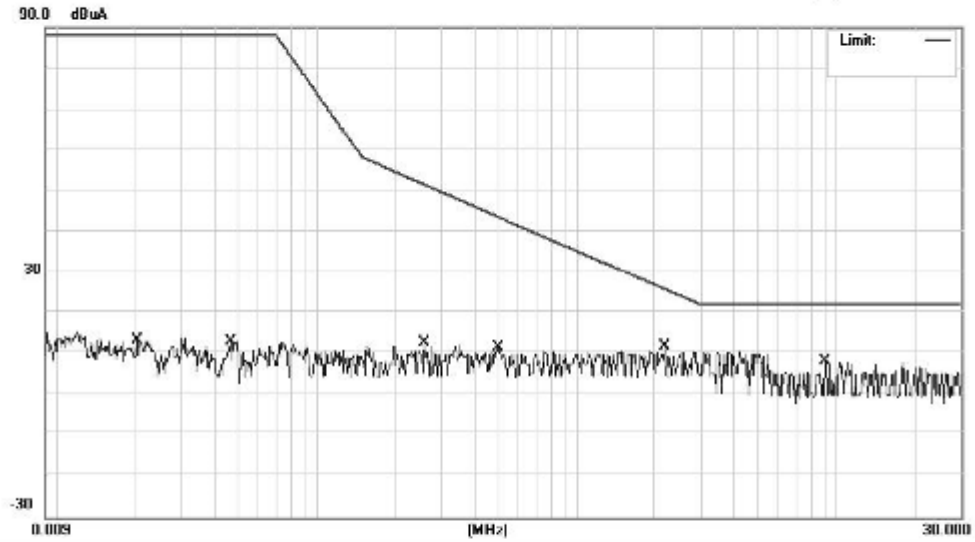
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#24 Date: 2019/05/31 Time: 下午 04:54:23



Site site #1 Phase: Y Temperature: 22
Limit: EN55015 RADIATED ELECTROMAGNETIC Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-150W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuA	dB	dBuA	dBuA	dB	Detector	Comment
1		0.0203	13.28	0.06	13.34	88.00	-74.66	QP	
2		0.0464	13.09	0.05	13.14	88.00	-74.86	QP	
3		0.2584	12.60	0.13	12.73	51.46	-38.73	QP	
4		0.4979	11.41	0.15	11.56	43.58	-32.02	QP	
5		2.1819	11.73	0.16	11.89	25.83	-13.94	QP	
6	*	8.9819	8.13	0.20	8.33	22.00	-13.67	QP	

*Maximum data x Over limit !over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#24 Page: 1 Engineer Signature: QIN

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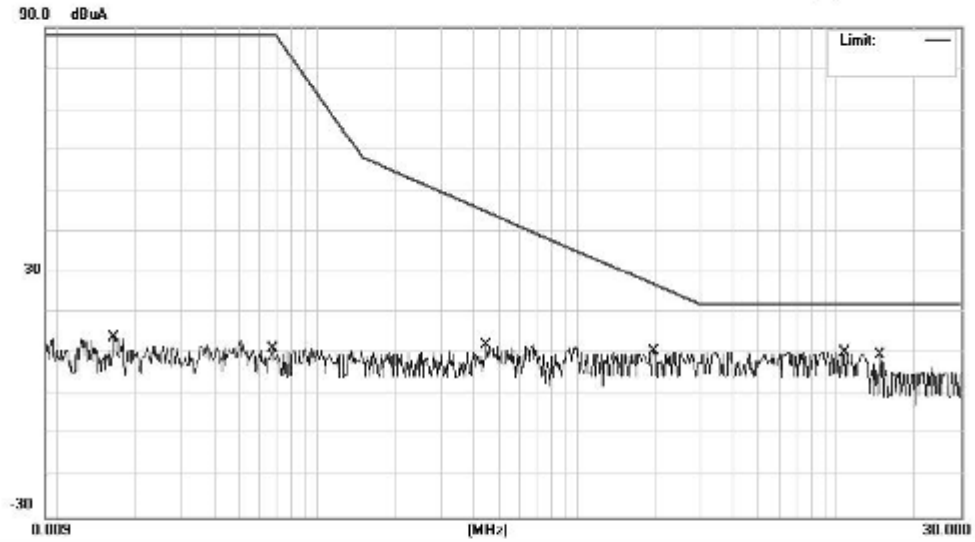
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#25 Date: 2019/05/31 Time: 下午 05:02:54



Site site #1 Phase: Z Temperature: 22
Limit: EN55015 RADIATED ELECTROMAGNETIC Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-150W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuA	dB	dBuA	dBuA	dB	Detector	Comment
1		0.0164	13.78	0.07	13.85	88.00	-74.15	QP	
2		0.0677	11.26	0.06	11.32	88.00	-76.68	QP	
3		0.4420	12.13	0.15	12.28	45.01	-32.73	QP	
4		1.9660	10.35	0.16	10.51	27.08	-16.57	QP	
5	*	10.7179	10.25	0.21	10.46	22.00	-11.54	QP	
6		14.6059	9.60	0.24	9.84	22.00	-12.16	QP	

*Maximum data x Over limit l over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#25 *Page: 1* Engineer Signature: QIN

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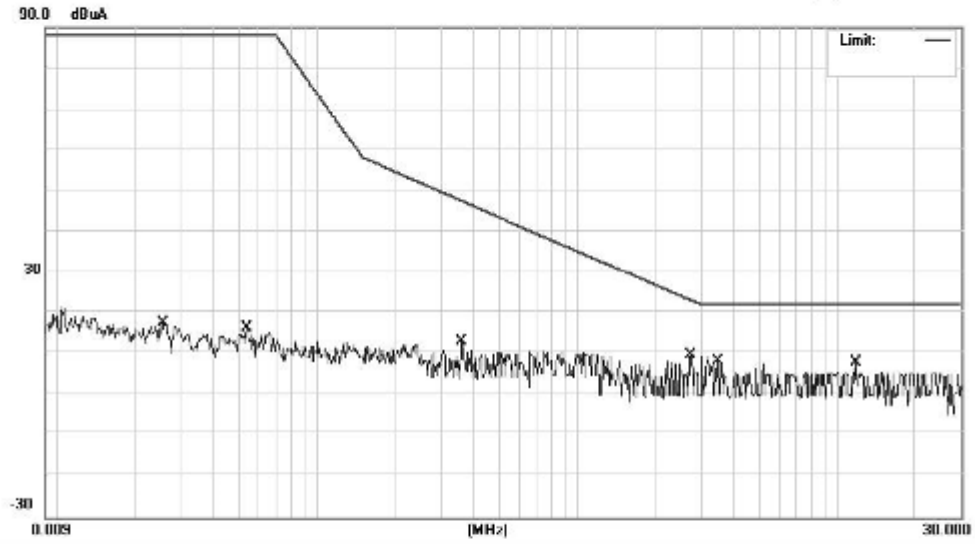
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#26 Date: 2019/05/31 Time: 下午 05:08:46



Site site #1 Phase: X Temperature: 22
Limit: EN55015 RADIATED ELECTROMAGNETIC Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-200W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuA	dB	dBuA	dBuA	dB	Detector	Comment
1		0.0253	17.58	0.06	17.64	88.00	-70.36	QP	
2		0.0532	16.32	0.05	16.37	88.00	-71.63	QP	
3		0.3580	13.00	0.14	13.14	47.54	-34.40	QP	
4	*	2.7500	9.48	0.15	9.63	23.05	-13.42	QP	
5		3.4820	8.16	0.15	8.31	22.00	-13.69	QP	
6		11.7980	7.65	0.22	7.87	22.00	-14.13	QP	

*Maximum data x Over limit l over margin (Reference Only

File :WSCT-r&e-19050028a\Data :#26 *Page: 1* Engineer Signature: QIN

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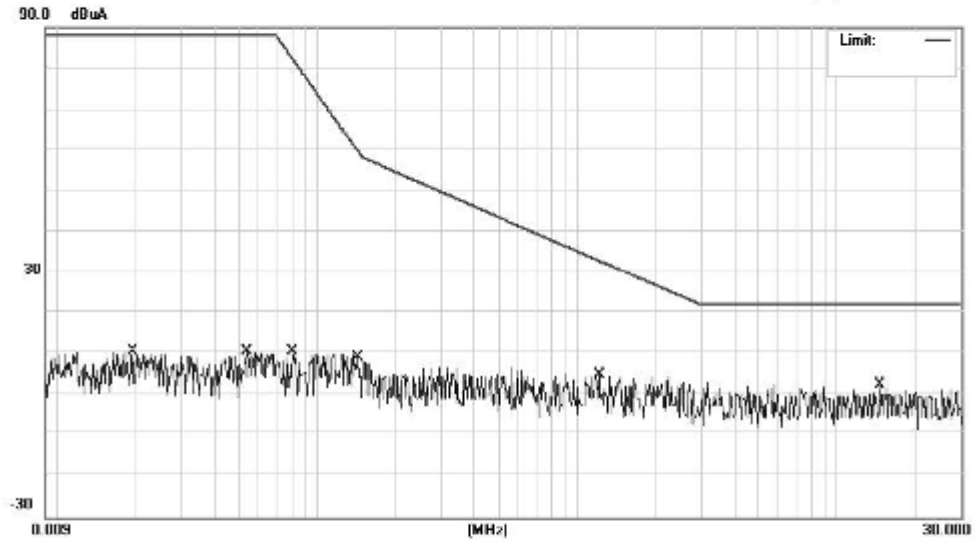
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#27 Date: 2019/05/31 Time: 下午 05:15:42



Site site #1 Phase: Y Temperature: 22
Limit: EN55015 RADIATED ELECTROMAGNETIC Power: AC 230V/50Hz Humidity: 56 %
EUT: LED Street light
M/N: SL-200W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuA	dB	dBuA	dBuA	dB	Detector	Comment
1		0.0194	10.48	0.07	10.55	88.00	-77.45	QP	
2		0.0533	10.45	0.05	10.50	88.00	-77.50	QP	
3		0.0810	10.44	0.07	10.51	82.25	-71.74	QP	
4		0.1431	9.00	0.10	9.10	59.83	-50.73	QP	
5		1.2137	4.66	0.17	4.83	32.87	-28.04	QP	
6	*	14.6059	2.28	0.24	2.52	22.00	-19.48	QP	

*Maximum data x Over limit l over margin (Reference Only

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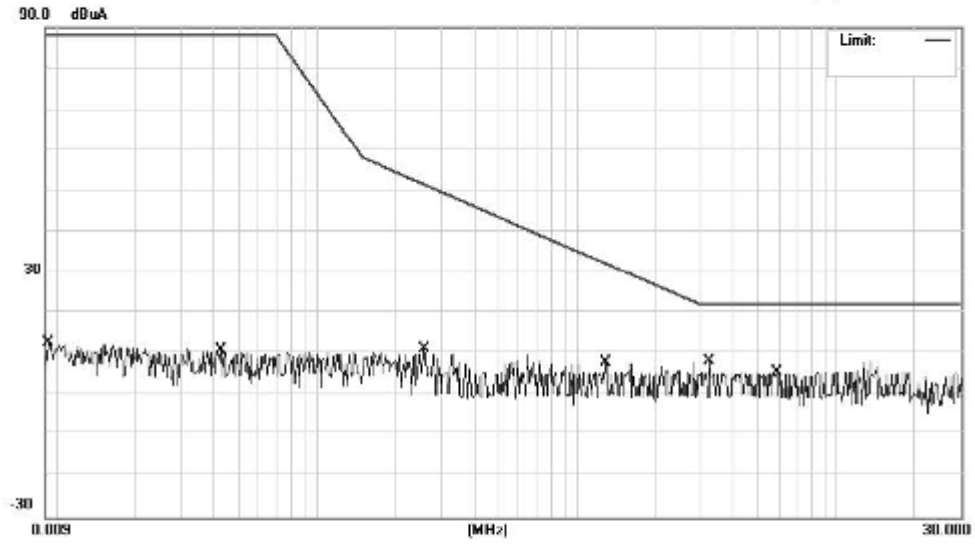
Conducted Emission Measurement

File :WSCT-r&e-19050028a Data :#28 Date: 2019/05/31 Time: 下午 05:22:35



Site site #1 Phase: Z Temperature: 22
Limit: EN55015 RADIATED ELECTROMAGNETIC Power: AC 230V/50Hz Humidity: 56 %
EUT LED Street light
M/N: SL-200W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		
		MHz	dBuA	dB	dBuA	dBuA	dB	Detector	Comment
1		0.0091	12.86	0.03	12.89	88.00	-75.11	QP	
2		0.0425	10.97	0.05	11.02	88.00	-76.98	QP	
3		0.2584	11.22	0.13	11.35	51.46	-40.11	QP	
4		1.2820	7.72	0.17	7.89	32.21	-24.32	QP	
5	*	3.2259	8.01	0.15	8.16	22.00	-13.84	QP	
6		5.8859	5.32	0.18	5.48	22.00	-16.52	QP	

*Maximum data x Over limit !over margin (Reference Only

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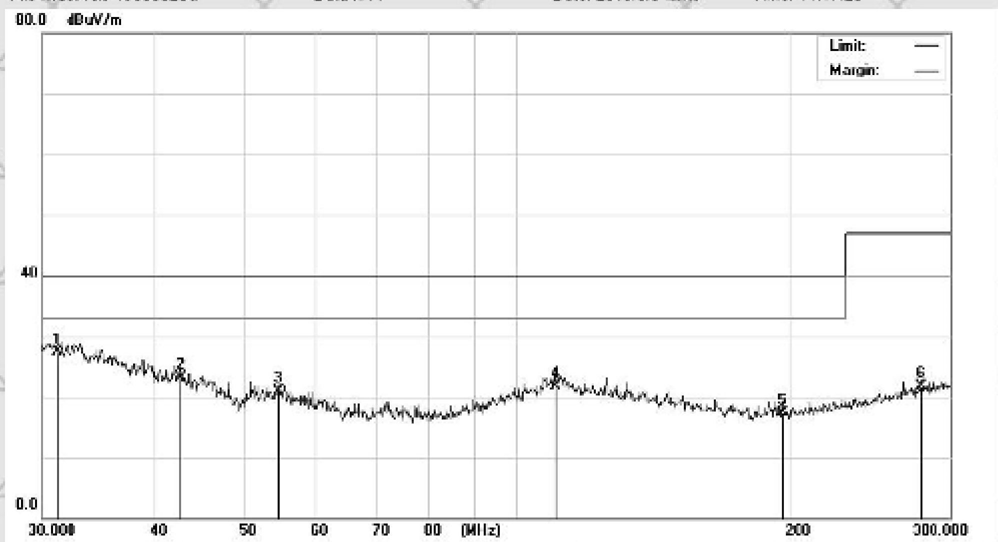
Radiated Emission Measurement

File :wsct-r&e-19050028a   Data :#11   Date: 2019/6/3   Time: 11:17:20



Site: site #1
Limit: EN55015 3M Radiation
EUT: LED Street Light
M/N: SL-50W
Mode: Lighting
Note:

Polarization: *Vertical*
Power: AC 230V/50Hz
Distance: 3m

Temparature: 23
Humidity: 53 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		cm	degree	
1	*	31.1976	22.97	4.33	27.30	40.00	-12.70	QP			
2		42.5717	24.24	-1.08	23.16	40.00	-16.84	QP			
3		54.5910	26.54	-5.57	20.97	40.00	-19.03	QP			
4		110.4387	23.61	-1.91	21.70	40.00	-18.30	QP			
5		195.9391	24.33	-7.08	17.25	40.00	-22.75	QP			
6		278.0489	25.03	-3.30	21.73	47.00	-25.27	QP			

*:Maximum data   x:Over limit   !:over margin   (Reference Only

File: wsct-r&e-19050028a Data :#11   *Page: 1*   Engineer Signature:

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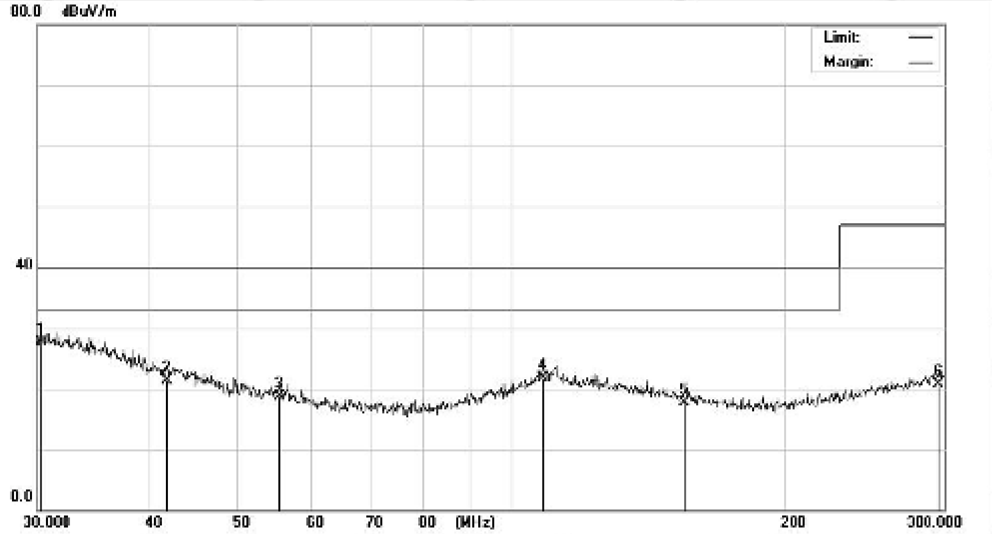
Radiated Emission Measurement

File :wsct-r&e-19050028a Data :#12 Date: 2019/6/3 Time: 11:25:27



Site: site #1 Polarization: *Horizontal* Temperature: 23
Limit: EN55015 3M Radiation Power: AC 230V/50Hz Humidity: 53 %
EUT: LED Street Light Distance: 3m
M/N: SL-50W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	30.2776	22.97	4.68	27.65	40.00	-12.35	QP			
2		41.6986	22.10	-0.74	21.36	40.00	-18.64	QP			
3		55.4781	24.34	-5.67	18.67	40.00	-21.33	QP			
4		108.4230	23.90	-2.18	21.72	40.00	-18.28	QP			
5		155.2820	23.02	-5.38	17.64	40.00	-22.36	QP			
6		295.8838	23.17	-2.44	20.73	47.00	-26.27	QP			

*:Maximum data x:Over limit !:over margin (Reference Only

File: wsct-r&e-19050028a\Data :#12 *Page: 1* Engineer Signature:

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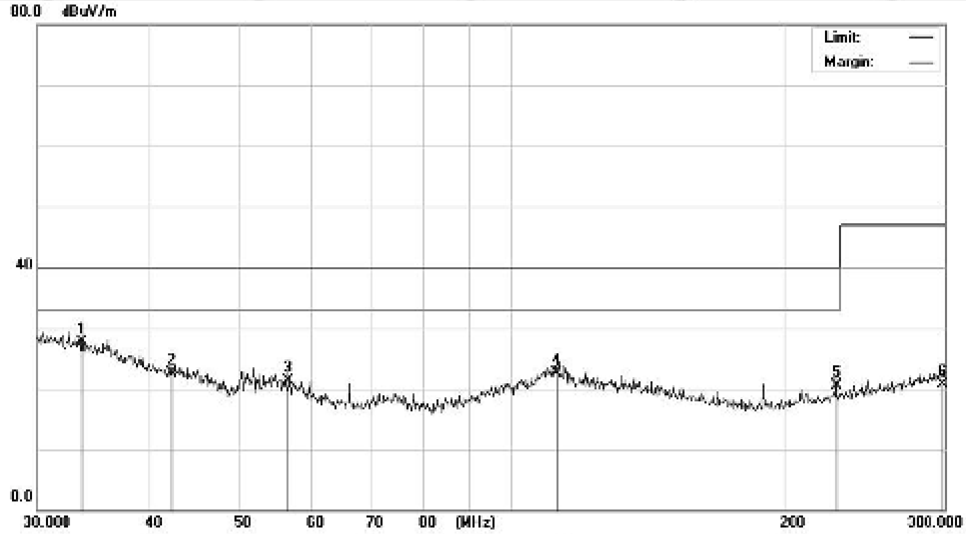
Radiated Emission Measurement

File :wsct-r&e-19050028a   Data :#9   Date: 2019/6/3   Time: 11:38:42



Site: site #1   Polarization: *Horizontal*   Temperature: 23
Limit: EN55015 3M Radiation   Power: AC 230V/50Hz   Humidity: 53 %
EUT: LED Street Light   Distance: 3m
M/N: SL-100W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	33.6606	24.32	3.40	27.72	40.00	-12.28	QP			
2		42.1814	23.36	-0.93	22.43	40.00	-17.57	QP			
3		56.7703	27.15	-5.83	21.32	40.00	-18.68	QP			
4		111.9750	24.52	-2.06	22.46	40.00	-17.54	QP			
5		227.5733	26.16	-5.74	20.42	40.00	-19.58	QP			
6		298.6216	23.07	-2.31	20.76	47.00	-26.24	QP			

*:Maximum data   x:Over limit   !:over margin   (Reference Only

File: wsct-r&e-19050028a Data :#9   Page: 1   Engineer Signature:

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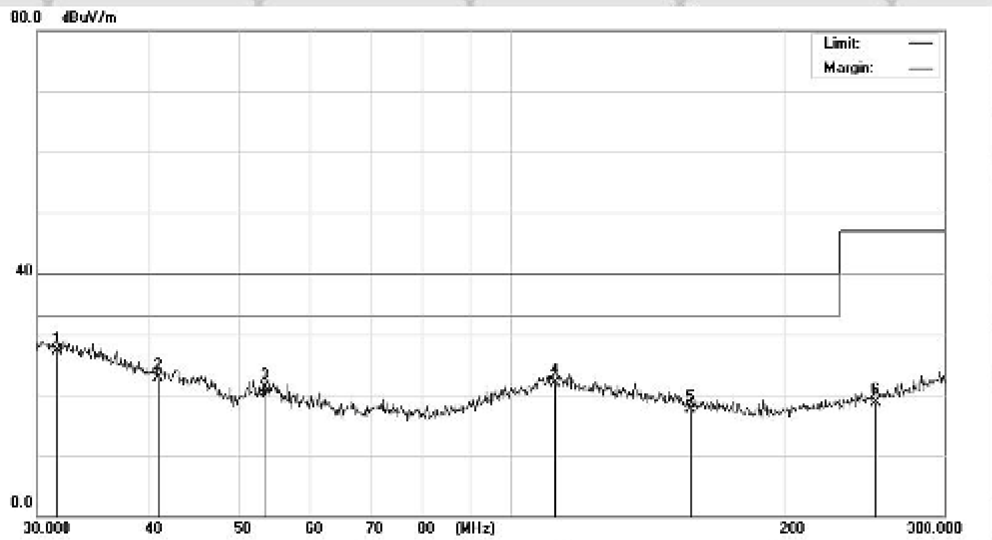
Radiated Emission Measurement

File :wsct-r&e-19050028a   Data :#10   Date: 2019/6/3 星期   Time: 11:44:42



Site: site #1   Polarization: *Vertical*   Temperature: 23
Limit: EN55015 3M Radiation   Power: AC 230V/50Hz   Humidity: 53 %
EUT: LED Street Light   Distance: 3m
M/N: SL-100W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over		Antenna Height	Table Degree	
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	31.5589	22.88	4.20	27.08	40.00	-12.92	QP			
2		40.8433	23.15	-0.41	22.74	40.00	-17.26	QP			
3		53.4714	26.48	-5.44	21.04	40.00	-18.96	QP			
4		111.7175	23.89	-2.03	21.86	40.00	-18.14	QP			
5		157.4422	23.00	-5.57	17.43	40.00	-22.57	QP			
6		252.4185	23.34	-4.61	18.73	47.00	-28.27	QP			

*:Maximum data   x:Over limit   !:over margin   (Reference Only

File: wsct-r&e-19050028a Data :#10   *Page: 1*   Engineer Signature:

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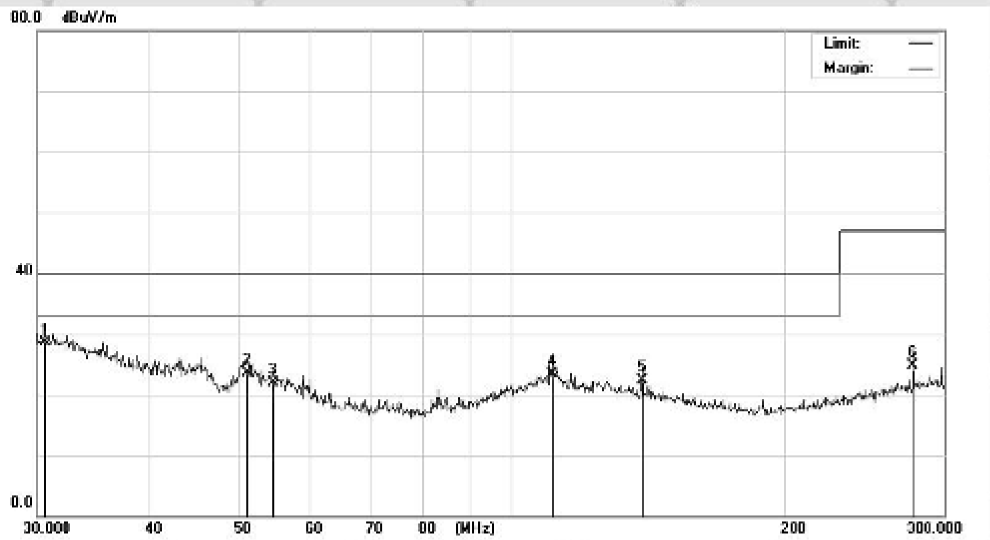
Radiated Emission Measurement

File :wsct-r&e-19050028a Data :#7 Date: 2019/6/3 Time: 13:35:31



Site: site #1 Polarization: *Vertical* Temperature: 23
Limit: EN55015 3M Radiation Power: AC 230V/50Hz Humidity: 53 %
EUT: LED Street Light Distance: 3m
M/N: SL-150W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		cm	degree	
1	*	30.5577	23.86	4.58	28.44	40.00	-11.56	QP			
2		51.0648	28.60	-5.15	23.45	40.00	-16.55	QP			
3		54.7169	27.56	-5.58	21.98	40.00	-18.02	QP			
4		110.9485	25.26	-1.96	23.30	40.00	-16.70	QP			
5		139.3546	26.66	-4.27	22.39	40.00	-17.61	QP			
6		276.7714	28.01	-3.38	24.65	47.00	-22.35	QP			

*:Maximum data x:Over limit !:over margin (Reference Only

File: wsct-r&e-19050028a Data :#7 *Page: 1* Engineer Signature:

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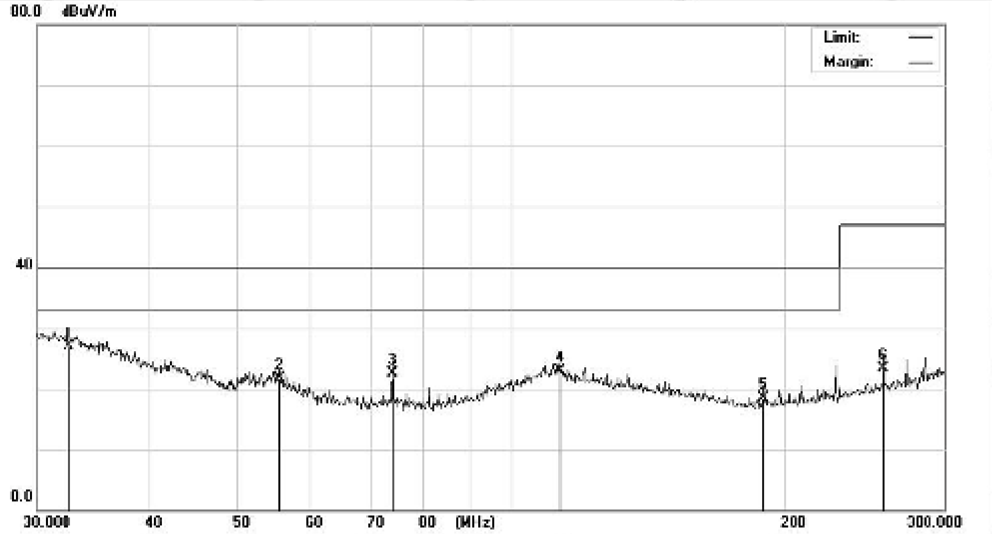
Radiated Emission Measurement

File :wsct-r&e-19050028a Data :#8 Date: 2019/6/3 星期 Time: 13:47:05



Site: site #1 Polarization: *Horizontal* Temparature: 23
Limit: EN55015 3M Radiation Power: AC 230V/50Hz Humidity: 53 %
EUT: LED Street Light Distance: 3m
M/N: SL-150W
Mode: Lighting
Note:

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB	Detector	cm	degree	Comment
1	*	32.5178	23.04	3.83	26.87	40.00	-13.13	QP			
2		55.4781	27.39	-5.67	21.72	40.00	-18.28	QP			
3		73.8110	29.52	-7.07	22.45	40.00	-17.55	QP			
4		113.0111	25.01	-2.17	22.84	40.00	-17.16	QP			
5		189.7235	25.67	-7.19	18.48	40.00	-21.52	QP			
6		257.1114	27.71	-4.38	23.35	47.00	-23.65	QP			

*:Maximum data x:Over limit !:over margin (Reference Only

File: wsct-r&e-19050028a Data :#8 Page: 1 Engineer Signature:

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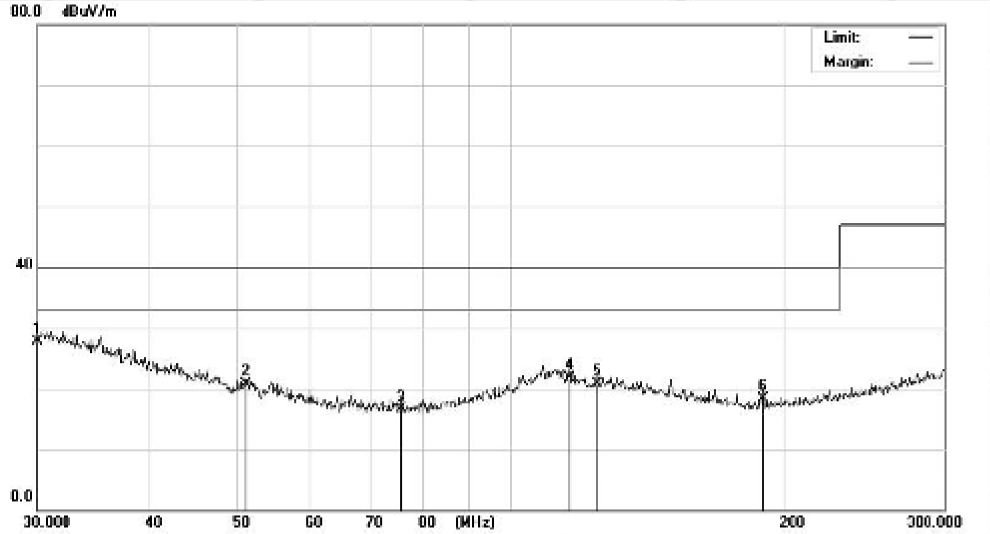
Radiated Emission Measurement

File :wsct-r&e-19050028a   Data :#5   Date: 2019/6/3   Time: 13:56:31



Site: site #1
Limit: EN55015 3M Radiation
EUT: LED Street Light
M/N: SL-200W
Mode: Lighting
Note:

Polarization: *Horizontal*
Power: AC 230V/50Hz
Distance: 3m

Temperature: 23
Humidity: 53 %

No.	Mk.	Freq.	Reading Level	Correct Factor	Measure-ment	Limit	Over	Detector	Antenna Height	Table Degree	Comment
		MHz	dBuV	dB	dBuV/m	dBuV/m	dB		cm	degree	
1	*	30.0692	22.88	4.76	27.64	40.00	-12.36	QP			
2		50.9473	25.74	-5.13	20.61	40.00	-19.39	QP			
3		75.7044	23.61	-7.10	16.51	40.00	-23.49	QP			
4		115.9101	24.19	-2.44	21.75	40.00	-18.25	QP			
5		124.4862	23.76	-3.15	20.61	40.00	-19.39	QP			
6		189.2872	25.48	-7.18	18.30	40.00	-21.70	QP			

*:Maximum data   x:Over limit   !:over margin   (Reference Only

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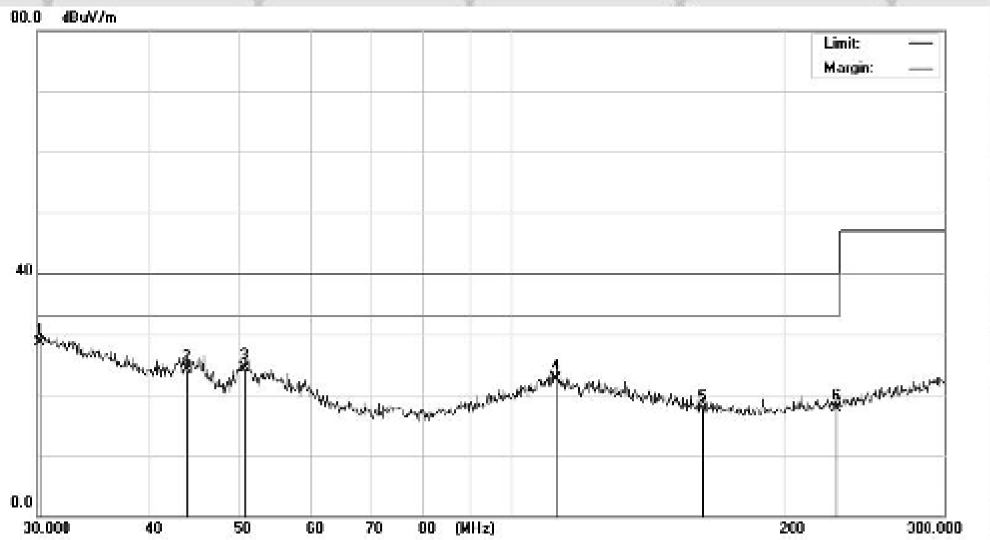
World Standardization Testing & Certification Group Co.,Ltd

Radiated Emission Measurement

File :wsct-r&e-19050028a Data :#6 Date: 2019/6/3 Time: 14:02:55



Site: site #1
Limit: EN55015 3M Radiation
EUT: LED Street Light
M/N: SL-200W
Mode: Lighting
Note:

Polarization: *Vertical*
Power: AC 230V/50Hz
Distance: 3m

Temperature: 23
Humidity: 53 %

No.	Mk.	Freq. (MHz)	Reading Level (dBuV)	Correct Factor (dB)	Measure-ment (dBuV/m)	Limit (dBuV/m)	Over (dB)	Detector	Antenna Height (cm)	Table Degree (degree)	Comment
1	*	30.2080	23.88	4.71	28.59	40.00	-11.41	QP			
2		43.7644	25.62	-1.55	24.07	40.00	-15.93	QP			
3		50.8301	29.47	-5.12	24.35	40.00	-15.65	QP			
4		112.2332	24.65	-2.09	22.56	40.00	-17.44	QP			
5		162.6003	23.39	-5.96	17.43	40.00	-22.57	QP			
6		227.5733	23.37	-5.74	17.63	40.00	-22.37	QP			

*:Maximum data x:Over limit !:over margin (Reference Only

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WSCT WORLD STANDARDIZATION CERTIFICATION & TESTING

Electrostatic Discharge Test Data

Standard	☒ IEC 61000-4-2	☐	
Applicant	FOSHAN KAICHENG LIGHTING CO.,LTD		
EUT	LED Street light	M/N	SL-50W/SL-100W SL-150W/SL-200W
Power Supply	☒ AC 230V/50Hz	☐ DC 12V	☐
Ambient condition	22 ℃	56 %RH	101.2 kPa
Air Discharge :	☒ ±8KV	☐ ± KV	☐ ± KV
Contact Discharge:	☒ ±4KV	☐ ± KV	☐ ± KV
Acceptance Criteria:	☐ A	☒ B	☐
Operation Mode:	Lighting		

Location	Actual Phenomenon Level				Results	
☒ HCP	☒ A	☐ B	☐ C	☐ D	☒ Pass	☐ Fail
☒ VCP	☒ A	☐ B	☐ C	☐ D	☒ Pass	☐ Fail
☒ Slot	☒ A	☐ B	☐ C	☐ D	☒ Pass	☐ Fail
☒ Shell	☒ A	☐ B	☐ C	☐ D	☒ Pass	☐ Fail
☒ Screws	☒ A	☐ B	☐ C	☐ D	☒ Pass	☐ Fail
☒ Metals Appearance	☒ A	☐ B	☐ C	☐ D	☒ Pass	☐ Fail
☐	☐ A	☐ B	☐ C	☐ D	☐ Pass	☐ Fail
☐	☐ A	☐ B	☐ C	☐ D	☐ Pass	☐ Fail
☐	☐ A	☐ B	☐ C	☐ D	☐ Pass	☐ Fail
☐	☐ A	☐ B	☐ C	☐ D	☐ Pass	☐ Fail
☐	☐ A	☐ B	☐ C	☐ D	☐ Pass	☐ Fail
☐	☐ A	☐ B	☐ C	☐ D	☐ Pass	☐ Fail
☐	☐ A	☐ B	☐ C	☐ D	☐ Pass	☐ Fail

Note : No observable change			
Test Equipment :	ONYX HAEFELY TEST AG		
Test Result :	☒ Pass	☐ Fail	
Tested By :	Yuan Yuxiang	Date :	2019.06.03

RS Immunity Test Data

Standard:	☒ IEC 61000-4-3				☐			
Applicant:	FOSHAN KAICHENG LIGHTING CO.,LTD							
EUT:	LED Street light			M/N	SL-50W/SL-100W SL-150W/SL-200W			
Input Voltage:	☒ AC 230V/50Hz		☐ DC 12V		☐			
Ambient Condition:	21 ℃		55 %RH		101.3 kPa			
Field Strength:	☒ 3 V/m	☐ V/m	Criterion:		☒A	☐		
Modulation:	☐ None	☐ Pulse	☒ AM	1KHz	80%			
Operation Mode:	Lighting							

	☒Frequency Range:		80 to 1000 MHz		☐Frequency Range:			
	Horizontal		Vertical		Horizontal		Vertical	
Front	☒ Pass	☐ Fail	☒ Pass	☐ Fail	☐ Pass	☐ Fail	☐ Pass	☐ Fail
Right	☒ Pass	☐ Fail	☒ Pass	☐ Fail	☐ Pass	☐ Fail	☐ Pass	☐ Fail
Rear	☒ Pass	☐ Fail	☒ Pass	☐ Fail	☐ Pass	☐ Fail	☐ Pass	☐ Fail
Left	☒ Pass	☐ Fail	☒ Pass	☐ Fail	☐ Pass	☐ Fail	☐ Pass	☐ Fail

	☐Frequency Range:				☐Frequency Range:			
	Horizontal		Vertical		Horizontal		Vertical	
Front	☐ Pass	☐ Fail	☐ Pass	☐ Fail	☐ Pass	☐ Fail	☐ Pass	☐ Fail
Right	☐ Pass	☐ Fail	☐ Pass	☐ Fail	☐ Pass	☐ Fail	☐ Pass	☐ Fail
Rear	☐ Pass	☐ Fail	☐ Pass	☐ Fail	☐ Pass	☐ Fail	☐ Pass	☐ Fail
Left	☐ Pass	☐ Fail	☐ Pass	☐ Fail	☐ Pass	☐ Fail	☐ Pass	☐ Fail

Note: No observable change, level of the test result is A.

Test Result :	☒ Pass	☐ Fail	
Tested By :	Yuan Yuxiang	Date :	2019.06.26

WSCT WORLD STANDARDIZATION CERTIFICATION & TESTING

Electrical Fast Transient/Burst Test Data

Standard	☒ IEC 61000-4-4		☐						
Applicant:	FOSHAN KAICHENG LIGHTING CO.,LTD								
EUT:	LED Street light		M/N		SL-50W/SL-100W SL-150W/SL-200W				
Power Supply:	☒ AC 230V/50Hz		☐ DC 12V		☐				
Ambient condition:	22 ℃		56%RH		101.2 kPa				
Operation Mode:	Lighting								
Test Time : 120 s									
Line	Test Voltage		Performance Criterion		Test Criterion		Result (±)		
L	☐500V	☒ 1K V	☒ B	☐	☒ A	☐	☒ Pass	☐ Fail	
N	☐500V	☒ 1K V	☒ B	☐	☒ A	☐	☒ Pass	☐ Fail	
PE	☐500V	☒ 1K V	☒ B	☐	☒ A	☐	☒ Pass	☐ Fail	
L、N	☐500V	☒ 1K V	☒ B	☐	☒ A	☐	☒ Pass	☐ Fail	
L、PE	☐500V	☒ 1K V	☒ B	☐	☒ A	☐	☒ Pass	☐ Fail	
N、PE	☐500V	☒ 1K V	☒ B	☐	☒ A	☐	☒ Pass	☐ Fail	
L、N、PE	☐500V	☒ 1K V	☒ B	☐	☒ A	☐	☒ Pass	☐ Fail	
Signal Cable	☐500V	☐ V	☐ B	☐	☐ A	☐	☐ Pass	☐ Fail	
DC Cable	☐500V	☐ V	☐ B	☐	☐ A	☐	☐ Pass	☐ Fail	
	☐500V	☐ V	☐ B	☐	☐ A	☐	☐ Pass	☐ Fail	
	☐500V	☐ V	☐ B	☐	☐ A	☐	☐ Pass	☐ Fail	
Note : No observable change									
Test Equipment	TRANSIENT 2000(EMC PARTNER)								
Test Result :	☒ Pass		☐ Fail						
Tested By :	Yuan Yuxiang		Date :		2019.06.03				

WSCT WORLD STANDARDIZATION CERTIFICATION & TESTING

Surge Test Data

Standard:	☒ IEC 61000-4-5	☐	
Applicant:	FOSHAN KAICHENG LIGHTING CO.,LTD		
EUT:	LED Street light	M/N	SL-50W/SL-100W SL-150W/SL-200W
Power Supply:	☒ AC 230V/50Hz	☐ DC 12V	☐
Performance Criterion:	☐ A	☐ B	☒ C
Ambient Condition:	22 ℃	56%RH	101.2 kPa
Operation Mode:	Lighting		

Line : ☒ AC Mains ☐ DC Mains ☐ Signal : _____

Location	Results									
L-N	☐ 500V		☒ 1KV		☐ 2KV		☐		☐	
	☐Pass	☐Fail	☒Pass	☐Fail	☐Pass	☐Fail	☐Pass	☐Fail	☐Pass	☐Fail
L-PE	☐ 500V		☐ 1KV		☒ 2KV		☐		☐	
	☐Pass	☐Fail	☐Pass	☐Fail	☒Pass	☐Fail	☐Pass	☐Fail	☐Pass	☐Fail
N-PE	☐ 500V		☐ 1KV		☒ 2KV		☐		☐	
	☐Pass	☐Fail	☐Pass	☐Fail	☒Pass	☐Fail	☐Pass	☐Fail	☐Pass	☐Fail
L、N-PE	☐ 500V		☐ 1KV		☐2KV		☐		☐	
	☐Pass	☐Fail	☐Pass	☐Fail	☐Pass	☐Fail	☐Pass	☐Fail	☐Pass	☐Fail
DC Supply	☐ 500V		☐ 1KV		☐2KV		☐		☐	
	☐Pass	☐Fail	☐Pass	☐Fail	☐Pass	☐Fail	☐Pass	☐Fail	☐Pass	☐Fail
Signal	☐ 500V		☐ 1KV		☐2KV		☐		☐	
	☐Pass	☐Fail	☐Pass	☐Fail	☐Pass	☐Fail	☐Pass	☐Fail	☐Pass	☐Fail

Note :EUT has a flashing phenomenon during the test, level of the test result is B, The surge test phase is positive 90° and negative 270° .

Test Equipments	TRANSIENT 2000(EMC PARTNER)		
Test Result :	☒ Pass	☐ Fail	
Tested By :	Yuan Yuxiang	Date :	2019.06.03

WSCT WORLD STANDARDIZATION CERTIFICATION & TESTING

C/S Immunity Test Data

Standard	☒ IEC 61000-4-6	☐	
Applicant:	FOSHAN KAICHENG LIGHTING CO.,LTD		
EUT:	LED Street light	M/N	SL-50W/SL-100W SL-150W/SL-200W
Input Voltage:	☒ AC 230V/50Hz	☐	☐
Ambient Condition:	22 ℃	56%RH	101.2 kPa
Modulation:	☐ None	☐ Pulse	☒ AM 1kHz 80%

Operation Mode: Lighting

Frequency Range	Injected Position	Strength (unmodulated)		Criterion	Performance Criterion		Result
0.15~80MHz	☒ AC Mains	☒ 3V	☐ V	A	☒ A	☐	☒ Pass ☐ Fail
	☐	☐ 3V	☐ V		☐ A	☐	☐ Pass ☐ Fail
	☐	☐ 3V	☐ V		☐ A	☐	☐ Pass ☐ Fail
Operation Mode:							
	☐	☐ 3V	☐ V		☐ A	☐	☐ Pass ☐ Fail
	☐	☐ 3V	☐ V		☐ A	☐	☐ Pass ☐ Fail
	☐	☐ 3V	☐ V		☐ A	☐	☐ Pass ☐ Fail

Note: No observable change

Test Result :	☒ Pass	☐ Fail	
Tested By :	Yuan Yuxiang	Date :	2019.06.03

Voltage Dips & Short Interruptions Immunity Test Data

Standard	☒ IEC 61000-4-11	☐	
Applicant	FOSHAN KAICHENG LIGHTING CO.,LTD		
EUT	LED Street light	M/N	SL-50W/SL-100W SL-150W/SL-200W
Input Voltage	☒ AC 230V/50Hz	☐ DC 12V	☐
Ambient Condition	22 ℃	56 %RH	101.2 kPa
Operation Mode:	Lighting		

Test Level %UT	Voltage Dips & Short Interruptions %UT	Duration (In Periods)		Performance Criterion		Test Criterion		Result	
< 5%	> 95% 0.5cycle	☒3	☐	☒ B	☐	☒ A	☐	☒ Pass	☐ Fail
70	30 10cycle	☒3	☐	☒ C	☐	☐ A	☒ B	☒ Pass	☐ Fail
		☐3	☐	☐ C	☐	☐ A	☐	☐ Pass	☐ Fail
		☐3	☐	☐	☐	☐	☐	☐ Pass	☐ Fail

Operation Mode:

Test Level %UT	Voltage Dips & Short Interruptions %UT	Duration (In Periods)		Criterion		Test Criterion		Result	
		☐3	☐	☐ B	☐	☐ A	☐	☐ Pass	☐ Fail
		☐3	☐	☐ C	☐	☐ A	☐	☐ Pass	☐ Fail
		☐3	☐	☐ C	☐	☐ A	☐	☐ Pass	☐ Fail
		☐3	☐	☐	☐	☐	☐	☐ Pass	☐ Fail

Note : EUT donot operated at level 70% of dips until the test voltage return to normal.

Test Result :	☒ Pass	☐ Fail	
Tested By :	Yuan Yuxiang	Date :	2019.06.26

Measurement Uncertainties

Where relevant, the following measurement uncertainty levels have been estimated for tests performed on the apparatus.

The reported expanded uncertainty of measurement is stated as the standard uncertainty of measurement multiplied by the coverage factor of k=2, which for a normal distribution corresponds to a coverage probability of approximately 95%.

Table 1: Measurement Uncertainty levels

Test	Parameters	Expanded uncertainty (U_{lab})	Expanded uncertainty (U_{cispr})
Conducted Emission (WSCT)	Level accuracy (9kHz to 150kHz) (150kHz to 30MHz)	± 3.20 dB ± 3.20 dB	± 3.8 dB ± 3.4 dB
Electromagnetic Radiated Emission (3-loop)(WSCT)	Level accuracy (9kHz to 30MHz)	± 3.46 dB	N/A
Radiated Emission (WSCT)	Level accuracy (30MHz to 1000MHz)	± 5.0 dB	± 6.3 dB

As U_{lab} in all applicable tests listed above are less than U_{cispr} according to CISPR 16-4-2:2011,

- compliance is deemed to occur if no measured disturbance exceeds the disturbance limit;
- non-compliance is deemed to occur if any measured disturbance exceeds the disturbance limit.