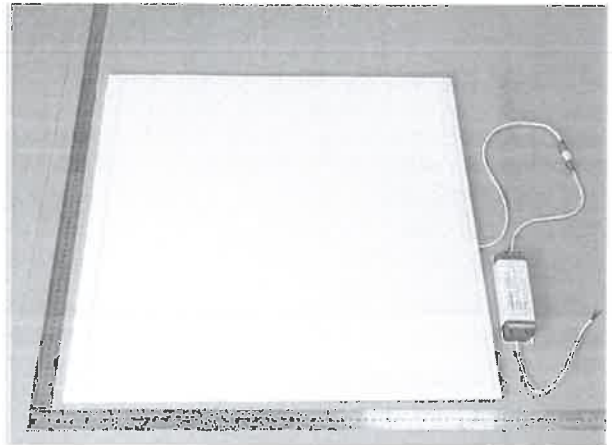


Prüfbericht-Nr.: <i>Test Report No.:</i>	50092339 001	Auftrags-Nr.: <i>Order No.:</i>	164095674	Seite 1 von 31 <i>Page 1 of 31</i>
Kunden-Referenz-Nr.: <i>Client Reference No.:</i>	494756	Auftragsdatum: <i>Order date.:</i>	05 Jun. 2017	
Auftraggeber: <i>Client:</i>	SHENZHEN SGSLIGHT TECHNOLOGY CO., LTD. Area B, 5/F, (Phase 2) Plant Yuxiu Electronic Co., Ltd., Baotian Industrial Park, Xixiang Street Bao'an Dist, Shenzhen, Guangdong P.R. China			
Prüfgegenstand: <i>Test item:</i>	LED Panel Light			
Bezeichnung / Typ-Nr.: <i>Identification / Type No.:</i>	Details refer to section 3.1			
Auftrags-Inhalt: <i>Order content:</i>	TUV Rheinland - EMC service			
Prüfgrundlage: <i>Test specification:</i>	EN 55015:2013 EN 61547:2009 EN 61000-3-2:2014 EN 61000-3-3:2013			
Wareneingangsdatum: <i>Date of receipt:</i>	10 October 2015			
Prüfmuster-Nr.: <i>Test sample No.:</i>	151680-151684			
Prüfzeitraum: <i>Testing period:</i>	Refer to test report			
Ort der Prüfung: <i>Place of testing:</i>	Refer to section 2.1			
Prüflaboratorium: <i>Testing laboratory:</i>	TÜV Rheinland (Shenzhen) Co., Ltd.			
Prüfergebnis*: <i>Test result*:</i>	Pass			
geprüft von / tested by:		kontrolliert von / reviewed by:		
15.08. 2017 Tiger Su Project Manager		15.08. 2017 Tongle Lee Technical Certifier		
Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>	Unterschrift <i>Signature</i>	Datum <i>Date</i>	Name/Stellung <i>Name/Position</i>
Sonstiges / Other:				
Zustand des Prüfgegenstandes bei Anlieferung: <i>Condition of the test item at delivery:</i>		Prüfmuster vollständig und unbeschädigt <i>Test item complete and undamaged</i>		
* Legende: 1 = sehr gut 2 = gut 3 = befriedigend 4 = ausreichend 5 = mangelhaft 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				
Dieser Prüfbericht bezieht sich nur auf das o.g. Prüfmuster und darf ohne Genehmigung der Prüfstelle nicht auszugsweise vervielfältigt werden. Dieser Bericht berechtigt nicht zur Verwendung eines Prüfzeichens. <i>This test report only relates to the a. m. test sample. Without permission of the test center this test report is not permitted to be duplicated in extracts. This test report does not entitle to carry any test mark.</i>				



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 – 30 MHz)***RESULT: Pass***5.2.1 RADIATED ELECTROMAGNETIC DISTURBANCES (30 MHz – 300 MHz)***RESULT: Pass***6.2.1 RADIO-FREQUENCY ELECTROMAGNETIC FIELDS SUSCEPTIBILITY (RS)***RESULT: Pass***6.2.2 RADIO-FREQUENCY CONTINUOUS CONDUCTED SUSCEPTIBILITY (CS)***RESULT: Pass***6.3.1 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 INTERRUPTION***RESULT: Pass*

Contents

1.	GENERAL REMARKS	5
1.1	COMPLEMENTARY MATERIALS	5
2.	TEST SITES.....	5
2.1	TEST FACILITIES.....	5
2.2	LIST OF TEST AND MEASUREMENT INSTRUMENTS	6
3.	GENERAL PRODUCT INFORMATION	8
3.1	PRODUCT FUNCTION AND INTENDED USE	8
3.2	RATINGS AND SYSTEM DETAILS	12
3.3	INDEPENDENT OPERATION MODES.....	12
3.4	NOISE GENERATING AND NOISE SUPPRESSING PARTS	12
3.5	SUBMITTED DOCUMENTS	12
4.	TEST SET-UP AND OPERATION MODES	13
4.1	PRINCIPLE OF CONFIGURATION SELECTION.....	13
4.2	TEST OPERATION AND TEST SOFTWARE	13
4.3	SPECIAL ACCESSORIES AND AUXILIARY EQUIPMENT.....	13
4.4	COUNTERMEASURES TO ACHIEVE EMC COMPLIANCE	13
5.	TEST RESULTS EMISSION	14
5.1	EMISSION IN THE FREQUENCY RANGE UP TO 30 MHz.....	14
5.1.1	<i>Harmonics on AC Mains</i>	<i>14</i>
5.1.2	<i>Voltage Fluctuations on AC Mains</i>	<i>15</i>
5.1.3	<i>Disturbance Voltage on AC Mains.....</i>	<i>16</i>
5.1.4	<i>Radiated Electromagnetic Disturbances (9 kHz – 30 MHz)</i>	<i>17</i>
5.2	EMISSION IN THE FREQUENCY RANGE ABOVE 30 MHz	18
5.2.1	<i>Radiated Electromagnetic Disturbances (30 MHz – 300 MHz).....</i>	<i>18</i>
6.	TEST RESULTS IMMUNITY	19
6.1	CLASSIFICATION OF APPARATUS	19
6.2	CONTINUOUS DISTURBANCES.....	20
6.2.1	<i>Radio-Frequency Electromagnetic Fields Susceptibility (RS).....</i>	<i>20</i>
6.2.2	<i>Radio-Frequency Continuous Conducted Susceptibility (CS).....</i>	<i>21</i>
6.3	TRANSIENT DISTURBANCES.....	22
6.3.1	<i>Fast Transients (EFT)</i>	<i>22</i>
6.3.2	<i>Surge</i>	<i>23</i>
6.3.3	<i>Electrostatic Discharges (ESD).....</i>	<i>24</i>
6.4	POWER SUPPLY ALTERATIONS	25

Prüfbericht - Nr.: 50092339 001
Test Report No.

Seite 4 von 31
Page 4 of 31

6.4.1	Voltage Dips and Interruption.....	25
7.	PHOTOGRAPHS OF THE TEST SET-UP	26
8.	LIST OF TABLES	31
9.	LIST OF PHOTOGRAPHS	31

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

(Remark: Model names 'PL-6060-48-YY-CCC-XXXX', 'PL-6060-60-YY-CCC-XXXX', 'PL-30120-24-YY-CCC-XXXX', 'PL-2060-12-YY-CCC-XXXX' & 'PL-6262-26-YY-CCC-XXXX' were shown in test results, which represented 'TLP-6060-48-CW-2835', 'TLP-6060-60-CW-2835', 'TLP-30120-24-CW-2835', 'TLP-2060-12-CW-2835' & 'TLP-6262-26-CW-2835' respectively)

2. Test Sites

2.1 Test Facilities

Alpha Product Testing Laboratory
Building B, East Area of Nanchang Second Industrial Zone, Gushu 2nd Road, Bao'an District, Shenzhen 518126, P.R. China

And

Waltek Services (ShenZhen) Co., Ltd.
1/F, Fukangtai Building, West Baima Rd., Songgang Street, Baoan District, Shenzhen 518105, 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 (Alpha)				
Test Receiver	Rohde & Schwarz	ESCI	100843	Oct.17, 2016
L.I.S.N.#1	Schwarzbeck	NSLK8126	8126466	Oct.17, 2016
L.I.S.N.#2	Kyoritsu	KNW-242C	8-1920-1	Oct.17, 2016
RF Cable	Schwarzbeck	9111505/200	5995-12-161-6890#	Apr.17, 2016
Coaxial Switch	Schwarzbeck	CX-210	N/A	N/A
Pulse Limiter	Schwarzbeck	VTSD9516F	9618	Oct.17, 2016
Radiated Electromagnetic Disturbance(9k-30MHz) (Alpha)				
Test Receiver	Rohde & Schwarz	ESCI	100843	Oct.17, 2016
Triple-loop Antenna	EVERFINE	LLA-2	11050002	Oct.17, 2016
RF Cable	MIYAZAKI	5D-2W	NO.1	Apr.17, 2016
Coaxial Switch	Schwarzbeck	CX-210	N/A	N/A
Radiated Electromagnetic Disturbance(30M-300MHz) (Alpha)				
Test Receiver	Rohde & Schwarz	ESCI	101165	Oct. 17, 2016
Amplifier	Schwarzbeck	BBV9743	9743-019	Oct. 17, 2016
Bilog Antenna	Schwarzbeck	VULB 9168	VULB9168-438	Feb.10, 2016
RF Cable	Schwarzbeck	AK9515E	95891-2m	Apr. 17, 2016
RF Cable	Schwarzbeck	AK9515E	95891-11m	Apr. 17, 2016
RF Cable	Schwarzbeck	AK9515E	95891-0.5m	Apr. 17, 2016
Electrostatic Discharge (Alpha)				
ESD Tester	HAEFLY	PESD1610	H310546	Oct. 17, 2016
Radio-Frequency Electromagnetic Field Amplitude Modulated (Waltek)				
RF Generator	R&S	SMB100A-B106	105942	Jan. 12, 2016
RF Power Amplifier	R&S	BLWA0830-160/100/40D	128740	Jan. 12, 2016
Logarithmic periodic antennas	R&S	STLP9128D	043	Jan. 12, 2016
Dynamometer	R&S	NRP2-2*Z91	102031	Jan. 12, 2016
Injected Current (Alpha)				
Conducted Immunity Test System	Frankonia	CIT-10/75	12681247/2013	Jan. 19, 2016
Fixed Coaxial Attenuator	CD	ATT-0675	120540086	Jan. 19, 2016

Prüfbericht - Nr.: 50092339 001
Test Report No.
Seite 7 von 31
Page 7 of 31

Kind of Equipment	Manufacturer	Type	S/N	Calibrated until
coupling-decoupling network (CDN)	CD	CDN M2/M3	2302	Jan. 19, 2016
Electromagnetic Injection Clamp (EMC-Clamp)	CD	EM-Clamp	0513A031201	Jan. 19, 2016
EFT (Alpha)				
Burst Tester	3ctest	EFT-4001G	EC0461015	Oct. 17, 2016
Capacitive Coupling Clamp	3ctest	EFTC	EC0441049	Oct. 17, 2016
Surge (Alpha)				
Surge CDN	3ctest	SGN-5010G	EC5591004	Oct. 17, 2016
Surge Generator	3ctest	SG-5006G	EC5581006	Oct. 17, 2016
Voltage Dips (Alpha)				
Main Interference Simulator	3ctest	VDG-1105G	EC0171002	Oct. 17, 2016
Harmonics (Alpha)				
Harmonics & Flicker Analyzer	Voltech	PM6000	200006700495	Aug.01, 2016

3. General Product Information

3.1 Product Function and Intended Use

The EUTs are LED Panel Lights for lighting purpose. For all models, three kinds of LED driver were employed. All models have the same mechanical construction and electrical construction, except the dimension, quantities of LED chips or LED driver are different.

Table 2: Model list

Model No.	Ratings	Type of LED driver	Size (mm)	LED Number (pcs)
TLP-3030-12-YY-XXXX	200-240Vac, 50/60Hz, 12W	WP-CE24-40-0.60A	300x300	48
TLP-3030-YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.60A	300x300	48
TLP-1560-12-YY-XXXX	200-240Vac, 50/60Hz, 12W	WP-CE24-40-0.60A	150x600	108
TLP-1560-YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.60A	150x600	108
TLP-2060-12-YY-XXXX	200-240Vac, 50/60Hz, 12W	WP-CE24-40-0.60A	200x600	108
TLP-2060-YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.60A	200x600	108
TLP-3060-YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.60A	300x600	108
TLP-3060-40-YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	300x600	108
TLP-3162-YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.6A	310x620	108
TLP-3162-40-YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	310x620	108
TLP-6060-26-YY-XXXX	200-240Vac, 50/60Hz, 26W	WP-CE42-40-1.1A	600x600	108
TLP-6060-30-YY-XXXX	200-240Vac, 50/60Hz, 30W	WP-CE42-40-1.1A	600x600	108
TLP-6060-36-YY-XXXX	200-240Vac, 50/60Hz, 36W	WP-CE42-40-1.1A	600x600	108
TLP-6060-YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	600x600	108
TLP-6060-45-YY-XXXX	200-240Vac, 50/60Hz, 45W	WP-CE42-40-1.1A	600x600	108
TLP-6060-48-YY-XXXX	200-240Vac, 50/60Hz, 48W	WP-CE42-40-1.1A	600x600	108
TLP-6060-60-YY-XXXX	200-240Vac, 50/60Hz, 60W	WP-CE60-40-1.5A	600x600	216
TLP-6060-30B-YY-XXXX	200-240Vac, 50/60Hz, 30W	WP-CE42-40-1.1A	600x600	144
TLP-6060-36B-YY-XXXX	200-240Vac, 50/60Hz, 36W	WP-CE42-40-1.1A	600x600	168
TLP-6060-40B-YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	600x600	192

TLP-6262-26-YY-XXXX	200-240Vac, 50/60Hz, 26W	WP-CE42-40-1.1A	620x620	108
TLP-6262-36-YY-XXXX	200-240Vac, 50/60Hz, 36W	WP-CE42-40-1.1A	620x620	108
TLP-6262-YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	620x620	108
TLP-6262-45-YY-XXXX	200-240Vac, 50/60Hz, 45W	WP-CE42-40-1.1A	620x620	108
TLP-6262-48-YY-XXXX	200-240Vac, 50/60Hz, 48W	WP-CE42-40-1.1A	620x620	108
TLP-6767-45-YY-XXXX	200-240Vac, 50/60Hz, 45W	WP-CE42-40-1.1A	620x620	144
TLP-6767-55-YY-XXXX	200-240Vac, 50/60Hz, 60W	WP-CE60-40-1.5A	620x620	288
TLP-10120-18-YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.60A	100x1200	108
TLP-10120-YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	100x1200	108
TLP-15120-18-YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.60A	150x1200	108
TLP-15120-YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	150x1200	108
TLP-20120-18-YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.60A	200x1200	216
TLP-20120-YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	200x1200	216
DTLP-R12-YY-XXXX	200-240Vac, 50/60Hz, 24W	WP-CE24-40-0.60A	Φ300	120
TLP-30120-36-YY-XXXX	200-240Vac, 50/60Hz, 36W	WP-CE42-40-1.1A	300x1200	216
TLP-30120-YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	300x1200	216
TLP-30120-46-YY-XXXX	200-240Vac, 50/60Hz, 46W	WP-CE42-40-1.1A	300x1200	216
TLP-30120-60-YY-XXXX	200-240Vac, 50/60Hz, 60W	WP-CE60-40-1.5A	300x1200	216
TLP-60120-40-YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	600x1200	216
TLP-60120-YY-XXXX	200-240Vac, 50/60Hz, 48W	WP-CE42-40-1.1A	600x1200	216
TLP-60120-54-YY-XXXX	200-240Vac, 50/60Hz, 54W	WP-CE60-40-1.5A	600x1200	216
TLP-60120-60-YY-XXXX	200-240Vac, 50/60Hz, 60W	WP-CE60-40-1.5A	600x1200	216
TLP-62124-60-YY-XXXX	200-240Vac, 50/60Hz, 60W	WP-CE60-40-1.5A	620x1240	216
TLP-62124-40-YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	620x1240	216
TLP-62124-YY-XXXX	200-240Vac, 50/60Hz, 48W	WP-CE42-40-1.1A	620x1240	216
TLP-15150-YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	150x1500	216
TLP-30150-40-YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	300x1500	264

TLP-30150-48-YY-XXXX	200-240Vac, 50/60Hz, 48W	WP-CE42-40-1.1A	300x1500	264
TLP-30150-YY-XXXX	200-240Vac, 50/60Hz, 60W	WP-CE60-40-1.5A	300x1500	264
TLP-60150-YY-XXXX	200-240Vac, 50/60Hz, 60W	WP-CE60-40-1.5A	600x1500	264
TLP-9090-YY-XXXX	200-240Vac, 50/60Hz, 60W	WP-CE60-40-1.5A	900x900	432
TLPD-R7-YY-XXXX	200-240Vac, 50/60Hz, 12W	WP-CE24-40-0.60A	Φ170	60
TLPD-R8-YY-XXXX	200-240Vac, 50/60Hz, 15W	WP-CE24-40-0.60A	Φ200	72
TLPD-R9-YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.60A	Φ225	84
TLPD-S12-YY-XXXX	200-240Vac, 50/60Hz, 24W	WP-CE24-40-0.60A	300x300	120
TLPD-R15-YY-XXXX	200-240Vac, 50/60Hz, 30W	WP-CE42-40-1.1A	Φ390	180
TLPD-R16-YY-XXXX	200-240Vac, 50/60Hz, 30W	WP-CE42-40-1.1A	Φ400	144
TLPD-R20-YY-XXXX	200-240Vac, 50/60Hz, 36W	WP-CE42-40-1.1A	Φ500	180
TLPD-R24-YY-XXXX	200-240Vac, 50/60Hz, 42W	WP-CE42-40-1.1A	Φ600	240
TLPD-S7-YY-XXXX	200-240Vac, 50/60Hz, 12W	WP-CE24-40-0.60A	170x170	60
TLPD-S8-YY-XXXX	200-240Vac, 50/60Hz, 15W	WP-CE24-40-0.60A	200x200	72
TLPD-S9-YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.60A	225x225	84
TLPD-MT-S12-YY-XXXX	200-240Vac, 50/60Hz, 24W	WP-CE24-40-0.60A	300x300	120
TLPD-S4040-YY-XXXX	200-240Vac, 50/60Hz, 30W	WP-CE42-40-1.1A	Φ400	144
TLPD-S5050-YY-XXXX	200-240Vac, 50/60Hz, 36W	WP-CE42-40-1.1A	Φ500	180
TLPD-S6060-YY-XXXX	200-240Vac, 50/60Hz, 42W	WP-CE42-40-1.1A	Φ600	240
TLPD-MT-R7-YY-XXXX	200-240Vac, 50/60Hz, 12W	WP-CE24-40-0.60A	Φ170	60
TLPD-MT-R9-YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.60A	Φ225	84
TLP-30120-24-YY-XXXX	200-240Vac, 50/60Hz, 24W	WP-CE24-40-0.60A	300x1200	216
TLPD-MT-S7-YY-XXXX	200-240Vac, 50/60Hz, 12W	WP-CE24-40-0.60A	170x170	60
TLPD-MT-S9-YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.60A	225x225	84
TLPD-MT-R12-YY-XXXX	200-240Vac, 50/60Hz, 24W	WP-CE24-40-0.60A	Φ300	120
TLPD-MT-R16-YY-XXXX	200-240Vac, 50/60Hz, 30W	WP-CE42-40-1.1A	Φ400	144
TLPD-MT-S4040-YY-XXXX	200-240Vac, 50/60Hz, 30W	WP-CE42-40-1.1A	Φ400	144

TLPD-MT-R20-YY-XXXX	200-240Vac, 50/60Hz, 36W	WP-CE42-40-1.1A	Φ500	180
TLPD-MT-S5050-YY-XXXX	200-240Vac, 50/60Hz, 36W	WP-CE42-40-1.1A	Φ500	180
TLPD-MT-R24-YY-XXXX	200-240Vac, 50/60Hz, 42W	WP-CE42-40-1.1A	Φ600	240
TLPD-MT-S6060-YY-XXXX	200-240Vac, 50/60Hz, 42W	WP-CE42-40-1.1A	Φ600	240
TLPL-OPF-60YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.60A	600x100	108
TLPL-OPF-90YY-XXXX	200-240Vac, 50/60Hz, 32W	WP-CE42-40-1.1A	900x100	108
TLPL-OPF-120YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	1100x100	216
TLPL-OPF-150YY-XXXX	200-240Vac, 50/60Hz, 46W	WP-CE42-40-1.1A	1500x100	216
TLPL-FLY-60YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.60A	600x200	108
TLPL-FLY-90YY-XXXX	200-240Vac, 50/60Hz, 32W	WP-CE42-40-1.1A	900x200	108
TLPL-FLY-120YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	1200x200	216
TLPL-FLY-150YY-XXXX	200-240Vac, 50/60Hz, 46W	WP-CE42-40-1.1A	1500x200	216
TLPL-A-60-YY-XXXX	200-240Vac, 50/60Hz, 18W	WP-CE24-40-0.60A	600x300	108
TLPL-A-90-YY-XXXX	200-240Vac, 50/60Hz, 32W	WP-CE42-40-1.1A	900x300	108
TLPL-A-120-36-YY-XXXX	200-240Vac, 50/60Hz, 36W	WP-CE42-40-1.1A	1200x300	216
TLPL-A-120-YY-XXXX	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	1200x300	216
TLPL-A-150-YY-XXXX	200-240Vac, 50/60Hz, 46W	WP-CE42-40-1.1A	1500x300	216
TLPL-A-200-YY-XXXX	200-240Vac, 50/60Hz, 50W	WP-CE60-40-1.5A	2000x300	216
TLPL-A-240-YY-XXXX	200-240Vac, 50/60Hz, 55W	WP-CE60-40-1.5A	2400x300	216
TLPL-A-300-YY-XXXX	200-240Vac, 50/60Hz, 60W	WP-CE60-40-1.5A	3000x300	216
TLPB-6060	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	600x600	108
TLPT-6060	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	600x600	108
TLPR-6060	200-240Vac, 50/60Hz, 40W	WP-CE42-40-1.1A	600x600	108

'YY' represents CCT, YY=WW, NW or CW.

'XXXX' represents LED type, XXXX=2835, 4014 or 5630.

For more information, please refer to instruction manual.

Prüfbericht - Nr.: 50092339 001
*Test Report No.***Seite 12 von 31**
Page 12 of 31

3.2 Ratings and System Details

System input voltage: AC 200-240V
Frequency: 50/60Hz
Rated power: Refer to above table 2
Protection class: II

3.3 Independent Operation Modes

- A. On
- B. Off

3.4 Noise Generating and Noise Suppressing Parts

Refer to the circuit diagram.

3.5 Submitted Documents

- Circuit Diagram
- Rating Label
- PCB Layout
- 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. According to section 3.1, the full tests were applied on models TLP-6060-48-CW-CCC-2835, TLP-6060-60-CW-CCC-2835 & TLP-30120-24-CW-CCC-2835, and additional EMI tests except radiated electromagnetic disturbances (9kHz-30MHz) were applied to models TLP-2060-12-CW-CCC-2835 & TLP-6262-26-CW-CCC-2835.

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	:	2015-10-14 & 2015-11-04
Test procedure	:	EN 61000-3-2:2014
Class	:	C
Limit	:	Table 2
Measured harmonics	:	1 - 40

Test setup

Input Voltage	:	AC 230V±2%, 50Hz
Operation Condition	:	According to clause C.5
Operation mode	:	A
Earthing	:	Not Connected

Refer to attached Appendix 1.

Remark:

1. For this kind of product, although the test software was indicated as the previous version of EN 61000-3-2 in the test result, compared with the requirement of EN 61000-3-2:2014, they have the same test requirements, and have no difference for testing, therefore the EUTs are also deemed to comply with the requirement of EN 61000-3-2:2014.
2. The active input power of the EUT is $\leq 25\text{W}$ and there is no applicable limit described in EN61000-3-2:2014 for class C equipment below 25W other than discharge lighting equipment.

Prüfbericht - Nr.: 50092339 001
*Test Report No.***Seite 15 von 31**
Page 15 of 31

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 maximum rated input power of the EUTs is about 60W 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. ..."

Prüfbericht - Nr.: 50092339 001

Test Report No.

Seite 16 von 31

Page 16 of 31

5.1.3 Disturbance Voltage on AC Mains**RESULT:****Pass**

Date of testing : 2015-10-14 to 2015-10-23
Test standard : EN 55015:2013
Frequency range : 0.009 - 30MHz
Limits : Table 2a
Kind of test site : Shielded room

Test setup

Input Voltage : AC 200-240V, 50/60Hz
Operation Condition : According to clause 6, 8.1.1 & 8.2
Operation mode : A
Earthing : Not Connected

Refer to attached Appendix 1

Prüfbericht - Nr.: 50092339 001

Test Report No.

Seite 17 von 31

Page 17 of 31

5.1.4 Radiated Electromagnetic Disturbances (9 kHz – 30 MHz)**RESULT:****Pass**

Date of testing : 2015-10-14
Test standard : EN 55015:2013
Frequency range : 0.009 - 30MHz
Limits : Table 3a
Kind of test site : Shielded room

Test setup

Input Voltage : AC 200-240V, 50/60Hz
Operation Condition : According to clause 6 & 9.1
Operation mode : A
Earthing : Not Connected

Refer to attached Appendix 1

5.2 Emission in the Frequency Range above 30 MHz

5.2.1 Radiated Electromagnetic Disturbances (30 MHz – 300 MHz)

RESULT:**Pass**

Date of testing	:	2015-10-14 to 2015-10-24
Test standard	:	EN 55015:2013
Basic standard	:	CISPR 32:2012
Frequency range	:	30 - 300MHz
Limits	:	Table 3b of EN 55015:2013
Kind of test site	:	3m semi-anechoic chamber

Test setup

Input Voltage	:	AC 200-240V, 50/60Hz
Operation Condition	:	According to clause 6 & 9.2
Operation mode	:	A
Earthing	:	Not Connected

Refer to attached Appendix 1

Remark: The measured result is below the specification limit by a margin less than the measurement uncertainty (the minimum margin is 1.12dB and the test lab's measurement uncertainty of this test is 3.04dB. And as the test lab's measurement uncertainty of this test item is less than U_{CISPR} (5.2dB), (U_{CISPR} - the uncertainty recommended by CISPR (5.2dB), therefore the EUT is deemed to comply with the disturbance limit according to Clause 4.1 of CISPR 16-4-2: 2003.

6. Test Results IMMUNITY

6.1 Classification of apparatus

According to EN 61547: 2009, the EUTs belong to Luminaries 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
Radio-Frequency Continuous Conducted (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

Remark: *-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	:	2015-10-30
Test Specification	:	EN 61547: 2009, table 2
Basic Standard	:	IEC 61000-4-3: 2006
Criterion	:	A
Frequency range	:	80-1000 MHz
Test level	:	3V/m (unmodulated, rms.)
Modulation	:	AM 80%, 1kHz sine-wave

Test setup

Input Voltage	:	AC 200-240V, 50/60Hz
Operation Mode	:	A
Earthing	:	Not Connected
Ambient temperature	:	Refer to Appendix 1
Relative humidity	:	Refer to Appendix 1
Atmospheric pressure	:	Refer to Appendix 1

Refer to attached Appendix 1.

Prüfbericht - Nr.: 50092339 001
Test Report No.Seite 21 von 31
Page 21 of 31

6.2.2 Radio-Frequency Continuous Conducted Susceptibility (CS)

RESULT:**Pass**

Date of testing	:	2015-10-28
Test Specification	:	EN 61547: 2009, table 9
Basic Standard	:	IEC 61000-4-6: 2008
Criterion	:	A
Source impedance	:	150Ω
Frequency range	:	0.15 - 80 MHz
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 200-240V, 50/60Hz
Operation Mode	:	A
Earthing	:	Not 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 Fast Transients (EFT)

RESULT:**Pass**

Date of testing	:	2015-10-28
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	:	5kHz

Test setup

Input Voltage	:	AC 200-240V, 50/60Hz
Operation Mode	:	A
Earthing	:	Not 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	:	2015-10-28
Test Specification	:	EN 61547: 2009, table 10
Basic Standard	:	IEC 61000-4-5: 2005
Criterion	:	C
Source impedance	:	2Ω for line to line
Test level	:	$\pm 0.5\text{kV}$, $\pm 1\text{kV}$ (Line to line)
Coupling phases	:	$\pi/2$, $3\pi/2$
Number of surges	:	5 (for each combination of parameters)
Repetition rate	:	Max. 1/min

Test Setup

Input Voltage	:	AC 200-240V, 50/60Hz
Operation Mode	:	A
Earthing	:	Not 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	:	2015-10-30
Test Specification	:	EN 61547: 2009, table 1
Basic Standard	:	IEC 61000-4-2: 2008
Criterion	:	B
Charge voltage	:	±2.0, ±4.0, ±8.0kV (air discharge) ±4.0kV (contact discharge)
Number of discharges	:	>10

Test Setup

Input Voltage	:	AC 200-240V, 50/60Hz
Operation Mode	:	A
Earthing	:	Not 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 Interruption

RESULT:**Pass**

Date of testing	:	2015-10-30
Test Specification	:	EN 61547: 2009, table 11 & 12
Basic Standard	:	IEC 61000-4-11: 2004
Test Port	:	AC Input Port
Criterion	:	C - table 11 B - table 12

Test Setup

Input Voltage	:	AC 200-240V, 50/60Hz
Operation Mode	:	A
Earthing	:	Not 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)



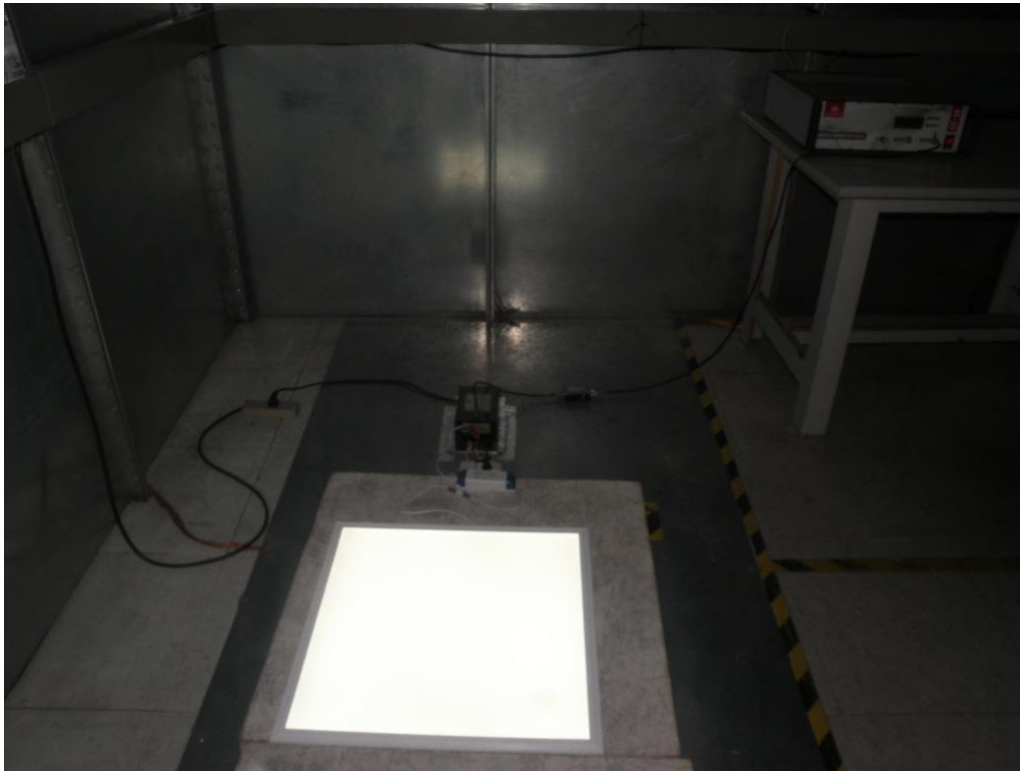
Photograph 3: Set-up for Radiated Electromagnetic Disturbance (Table 3b)



Photograph 4: Set-up for Radio- Frequency Electromagnetic Fields Susceptibility



Photograph 5: Set-up for Injected Currents on AC Mains



Photograph 6: Set-up for EFT



Photograph 7: Set-up for Surge



Photograph 8: Set-up for Voltage Dips



Photograph 9: Set-up for Electrostatic Discharges



Photograph 10: Set-up for Harmonics



8. List of Tables

Table 1: List of Test and Measurement Equipment	6
Table 2: Model list	8

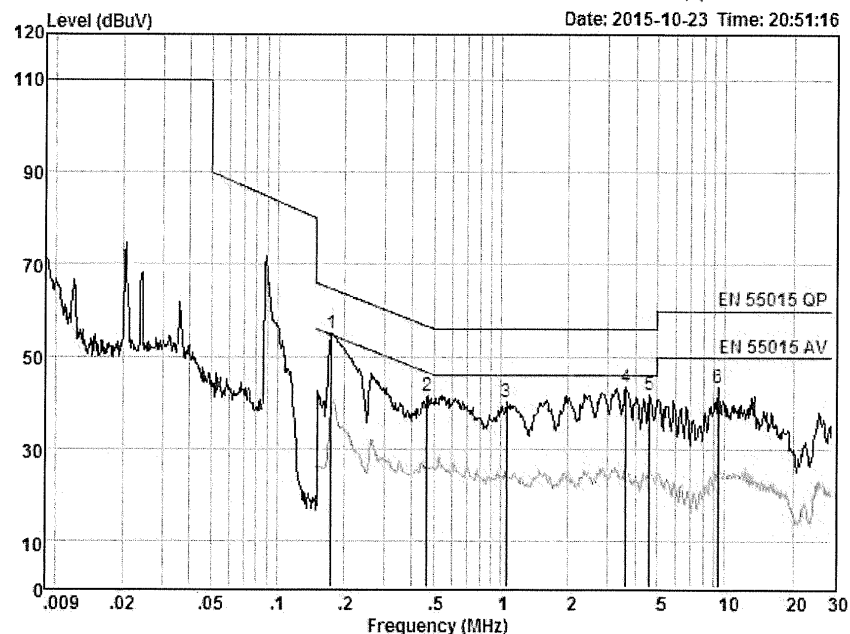
9. List of Photographs

Photograph 1: Set-up for Disturbance Voltage	26
Photograph 2: Set-up for Radiated Electromagnetic Disturbances (Table 3a)	26
Photograph 3: Set-up for Radiated Electromagnetic Disturbance (Table 3b)	27
Photograph 4: Set-up for Radio- Frequency Electromagnetic Fields Susceptibility	27
Photograph 5: Set-up for Injected Currents on AC Mains	28
Photograph 6: Set-up for EFT	28
Photograph 7: Set-up for Surge	29
Photograph 8: Set-up for Voltage Dips	29
Photograph 9: Set-up for Electrostatic Discharges	30
Photograph 10: Set-up for Harmonics	30



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Data: 4 File: E:\TEST REPORT\TuoBo\PL-2060-12-YY-CCC-XXXX.EM6 (8) Date: 2015-10-23 Time: 20:51:16



Condition : EN 55015 QP FOL: NEUTRAL Temp:23.7 °C Hum:51 %
EUT : LED Panel Light
Model No : PL-2060-12-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

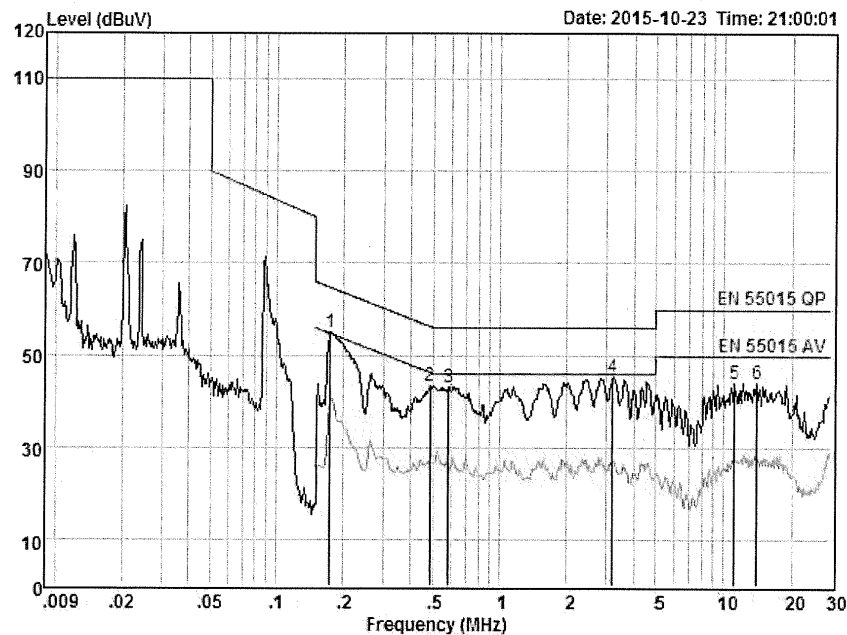
Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.174	45.38	0.03	-9.52	0.10	55.03	64.77	-9.74	Peak
2	0.466	31.91	0.03	-9.58	0.10	41.62	56.58	-14.96	Peak
3	1.054	30.47	0.04	-9.64	0.10	40.25	56.00	-15.75	Peak
4	3.642	33.35	0.08	-9.85	0.12	43.40	56.00	-12.60	Peak
5	4.622	31.77	0.09	-9.90	0.12	41.88	56.00	-14.12	Peak
6	9.352	33.28	0.17	-9.94	0.19	43.58	60.00	-16.42	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss



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Data: 8 File: E:\TEST REPORT\TuoBo\PL-2060-12-YY-CCC-XXXX.EM6 (8) Date: 2015-10-23 Time: 21:00:01



Condition : EN 55015 QP POL: LINE Temp:23.7 °C Hum:51 %
EUT : LED Panel Light
Model No : PL-2060-12-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

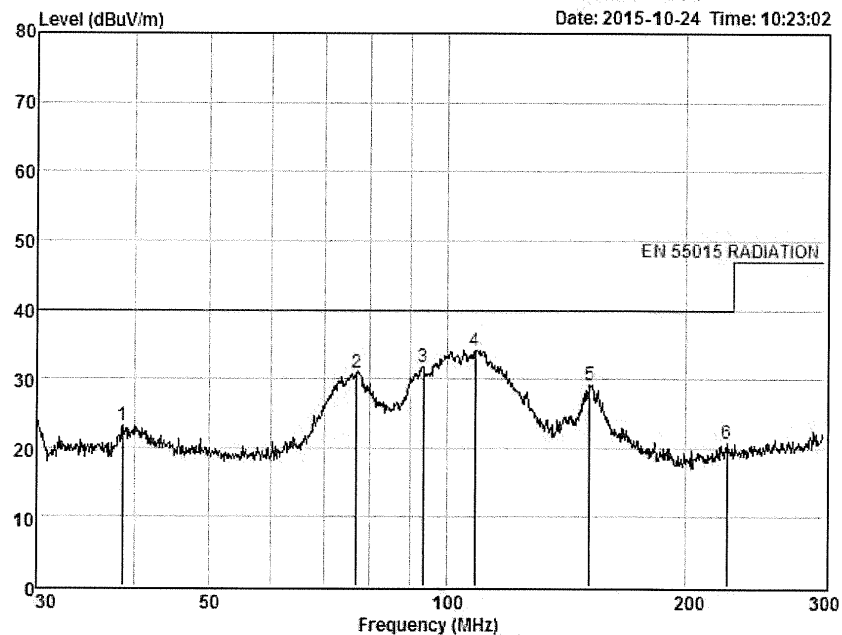
Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.174	45.40	0.03	-9.52	0.10	55.05	64.77	-9.72	Peak
2	0.483	33.62	0.03	-9.56	0.10	43.33	56.29	-12.96	Peak
3	0.587	33.53	0.03	-9.59	0.10	43.25	56.00	-12.75	Peak
4	3.199	35.26	0.07	-9.62	0.12	45.27	56.00	-10.73	Peak
5	11.087	33.74	0.23	-9.91	0.22	44.10	60.00	-15.90	Peak
6	13.978	33.84	0.23	-9.67	0.23	44.17	60.00	-15.83	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss



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Data: 1 File: D:\REPORT DATA\TuoBo\PL-2060-12-YY-CCC-XXXX.EM6 (2) Date: 2015-10-24 Time: 10:23:02



Condition : EN 55015 RADIATION 3m POL: HORIZONTAL
EUT : LED panel light
Model No : PL-2060-12-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer : Eric
Remark :
Temp : 24.2°C
Hum : 54%

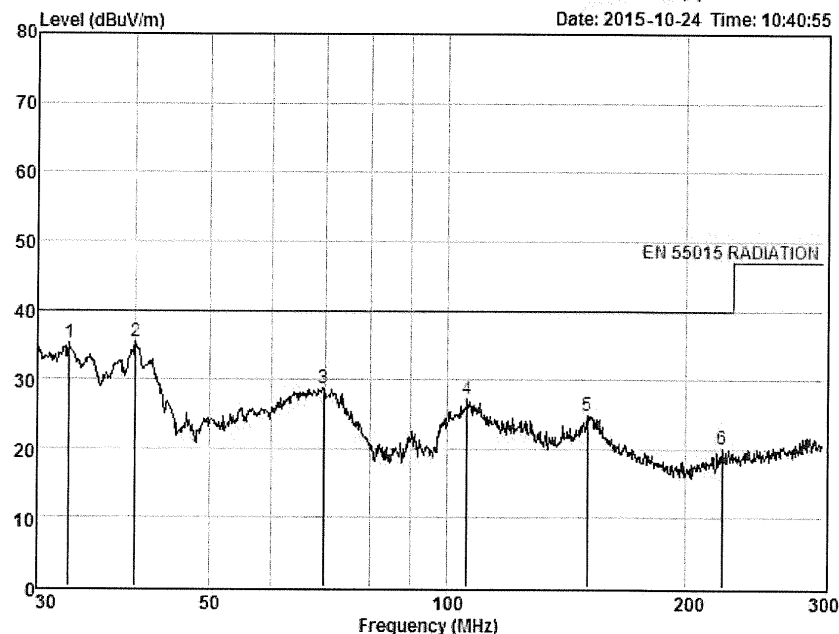
Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	38.56	40.25	13.73	30.84	0.13	23.27	40.00	-16.73	Peak
2	76.93	50.99	9.60	30.06	0.26	30.79	40.00	-9.21	Peak
3	93.35	51.99	9.72	30.20	0.27	31.78	40.00	-8.22	Peak
4	108.67	52.60	11.13	29.96	0.41	34.18	40.00	-5.82	Peak
5	152.45	43.99	14.16	29.36	0.41	29.20	40.00	-10.80	Peak
6	226.01	37.59	10.98	28.24	0.51	20.84	40.00	-19.16	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



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Data: 2 File: D:\REPORT DATA\TuoBo\PL-2060-12-YY-CCC-XXXX.EM6 (2)
Level (dBuV/m) Date: 2015-10-24 Time: 10:40:55



Condition : EN 55015 RADIATION 3m POL: VERTICAL
EUT : LED panel light
Model No : PL-2060-12-YY-CCC-XXXX
Test Mode : CM
Power : AC 230V/50Hz
Test Engineer : Eric
Remark :
Temp : 24.2°C
Hum : 54%

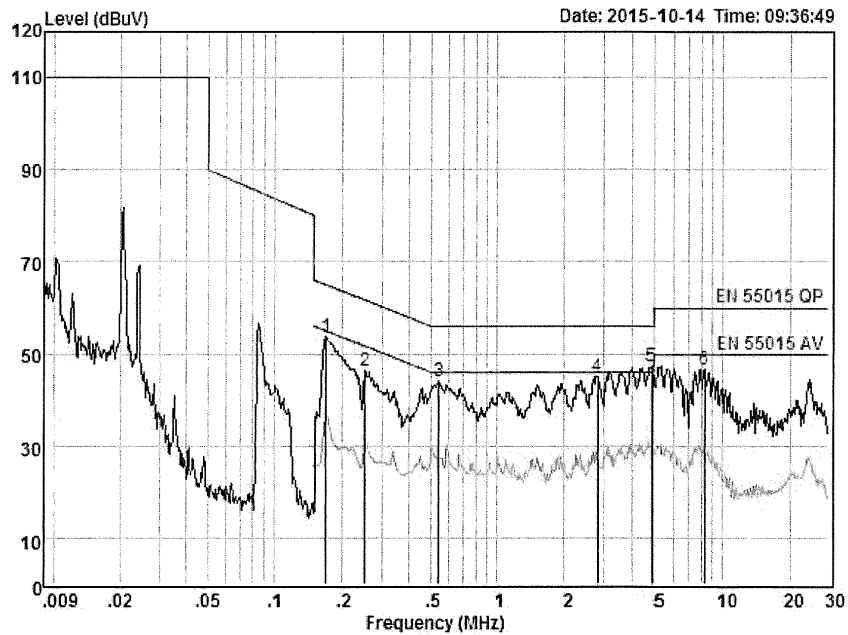
Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	32.89	52.61	13.33	30.90	0.11	35.15	40.00	-4.85	Peak
2	40.01	52.10	14.07	30.85	0.17	35.49	40.00	-4.51	Peak
3	69.68	47.77	10.82	30.15	0.24	28.68	40.00	-11.32	Peak
4	106.20	45.88	10.93	30.00	0.42	27.23	40.00	-12.77	Peak
5	151.40	39.72	14.16	29.41	0.42	24.89	40.00	-15.11	Peak
6	222.91	37.09	10.75	28.38	0.63	20.09	40.00	-19.91	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



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Data: 4 File: E:\TEST REPORT\TuoBo\PL-6060-48-YY-CCC-XXXX.EM6 (8) Date: 2015-10-14 Time: 09:36:49



Condition : EN 55015 QP FOL: LINE Temp: 25.7 °C Hum: 51 %
EUT : LED Panel Light
Model No : PL-6060-48-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

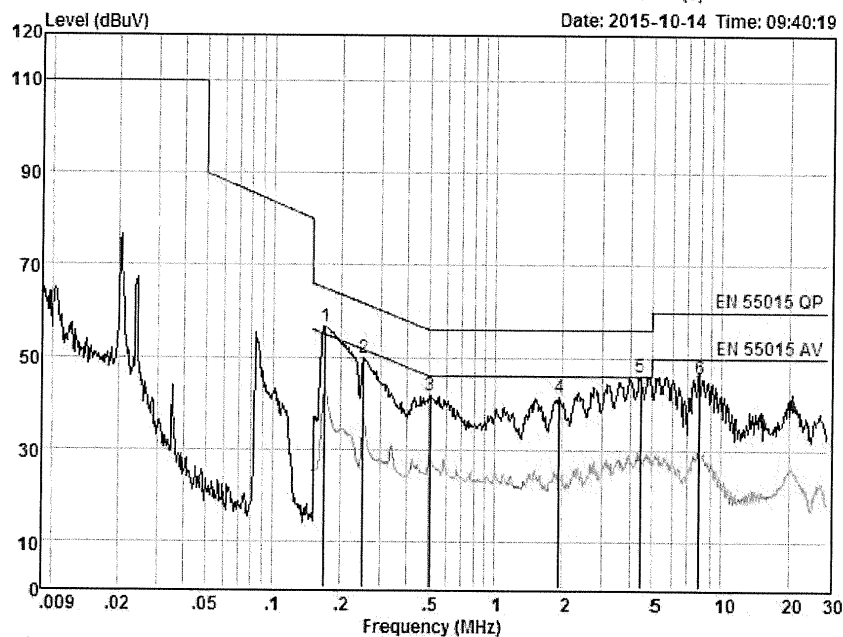
Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.170	44.00	0.03	-9.52	0.10	53.65	64.98	-11.33	Peak
2	0.252	36.79	0.03	-9.56	0.10	46.48	61.68	-15.20	Peak
3	0.541	34.28	0.03	-9.58	0.10	43.99	56.00	-12.01	Peak
4	2.808	35.17	0.07	-9.78	0.12	45.14	56.00	-10.86	Peak
5	4.875	37.12	0.10	-9.92	0.12	47.26	56.00	-8.74	Peak
6	8.260	36.35	0.15	-9.96	0.17	46.63	60.00	-13.37	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss



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Data: 8 File: E:\TEST REPORT\TuoBo\PL-6060-48-YY-CCC-XXXX.EM6 (8) Date: 2015-10-14 Time: 09:40:19



Condition : EN 55015 QP POL: NEUTRAL Temp:25.7 °C Hum:51 %
EUT : LED Panel Light
Model No : PL-6060-48-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

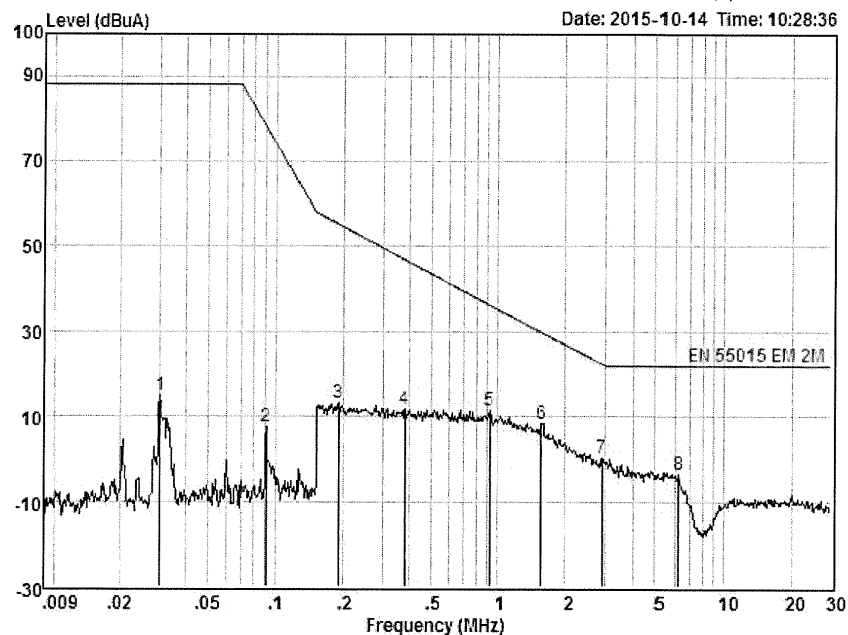
Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.170	47.09	0.03	-9.52	0.10	56.74	64.98	-8.24	Peak
2	0.252	40.19	0.03	-9.56	0.10	49.88	61.68	-11.80	Peak
3	0.507	32.13	0.03	-9.58	0.10	41.84	56.00	-14.16	Peak
4	1.934	31.80	0.05	-9.71	0.10	41.66	56.00	-14.34	Peak
5	4.459	35.90	0.09	-9.90	0.12	46.01	56.00	-9.99	Peak
6	7.932	35.34	0.14	-9.96	0.16	45.60	60.00	-14.40	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss



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Data: 3 File: E:\TEST REPORT\TuoBo\PL-6060-48-YY-CCC-XXXX EM.EM6 (9) Date: 2015-10-14 Time: 10:28:36



Condition : EN 55015 EM 2M POL: X Temp:22 °C Hum:56 %
EUT : LED Panel Light
Model No : PL-6060-48-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

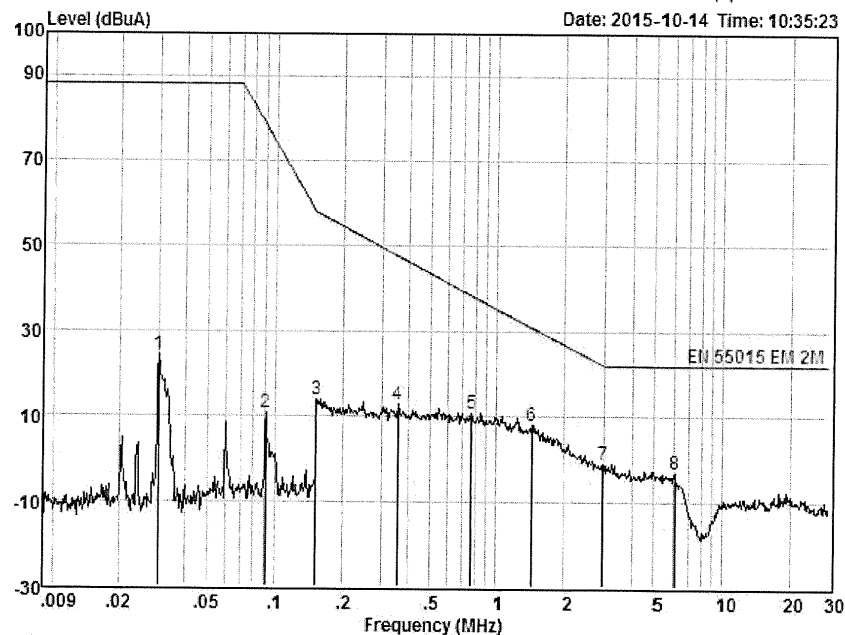
Item	Freq MHz	Read dBuA	AUX Factor dB	Cable Loss dB	Level dBuA	Limit dBuA	Margin dBuA	Remark
1	0.030	-1.32	16.35	0.08	15.11	88.02	-72.91	Peak
2	0.091	-12.42	20.14	0.08	7.80	77.76	-69.96	Peak
3	0.190	-6.56	19.72	0.08	13.24	55.18	-41.94	Peak
4	0.379	-8.46	20.27	0.08	11.89	46.89	-35.00	Peak
5	0.917	-9.45	20.79	0.10	11.44	36.27	-24.83	Peak
6	1.866	-11.86	19.87	0.10	8.41	29.83	-21.42	Peak
7	2.901	-19.85	20.19	0.13	0.47	22.42	-21.95	Peak
8	6.218	-24.27	20.57	0.18	-3.52	22.02	-25.54	Peak

Remarks: Level = Read + AUX Factor + Cable loss



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Website: <http://www.a-lab.cn> Email: service@a-lab.cn

Data: 6 File: E:\TEST REPORT\TuoBo\PL-6060-48-YY-CCC-XXXX EM.EM6 (9) Date: 2015-10-14 Time: 10:35:23



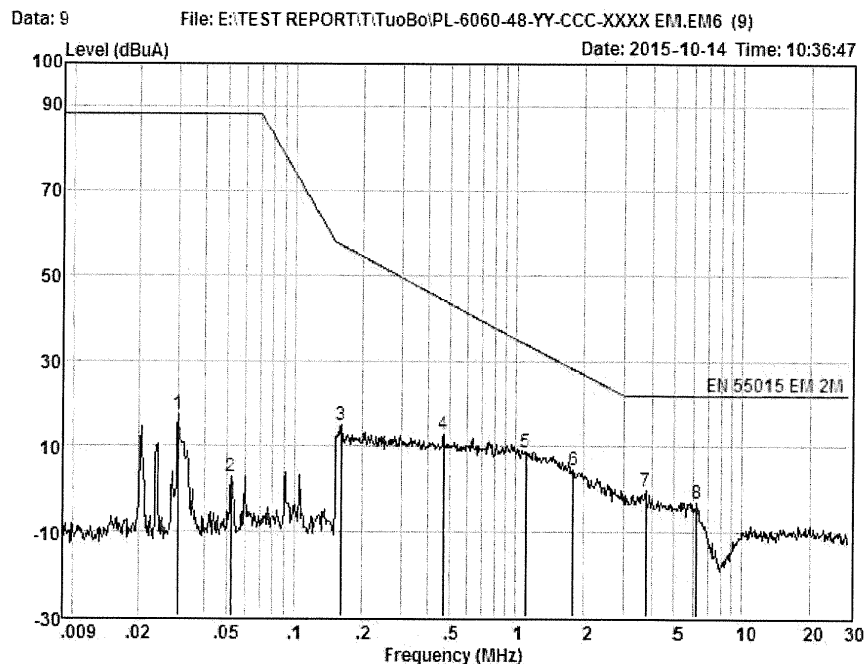
Condition : EN 55015 EM 2M POL: Y Temp: 22 °C Hum: 56 %
EUT : LED Panel Light
Model No : PL-6060-48-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

Item	Freq MHz	Read dBuA	AUX Factor dB	Cable Loss dB	Level dBuA	Limit dBuA	Margin dBuA	Remark
1	0.030	7.95	16.42	0.08	24.45	88.02	-63.57	Peak
2	0.091	-10.17	20.76	0.08	10.67	77.76	-67.09	Peak
3	0.151	-7.09	21.00	0.08	13.99	57.91	-43.92	Peak
4	0.355	-8.57	21.27	0.08	12.78	47.67	-34.89	Peak
5	0.773	-10.71	21.50	0.10	10.89	38.31	-27.42	Peak
6	1.432	-13.80	21.74	0.10	8.04	30.90	-22.86	Peak
7	2.972	-23.09	21.98	0.13	-0.98	22.13	-23.11	Peak
8	6.069	-26.17	22.96	0.16	-3.03	22.02	-25.05	Peak

Remarks: Level = Read + AUX Factor + Cable loss



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Condition : EN 55015 EM 2M POL: Z Temp: 22 °C Hum: 56 %
EUT : LED Panel Light
Model No : PL-6060-48-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

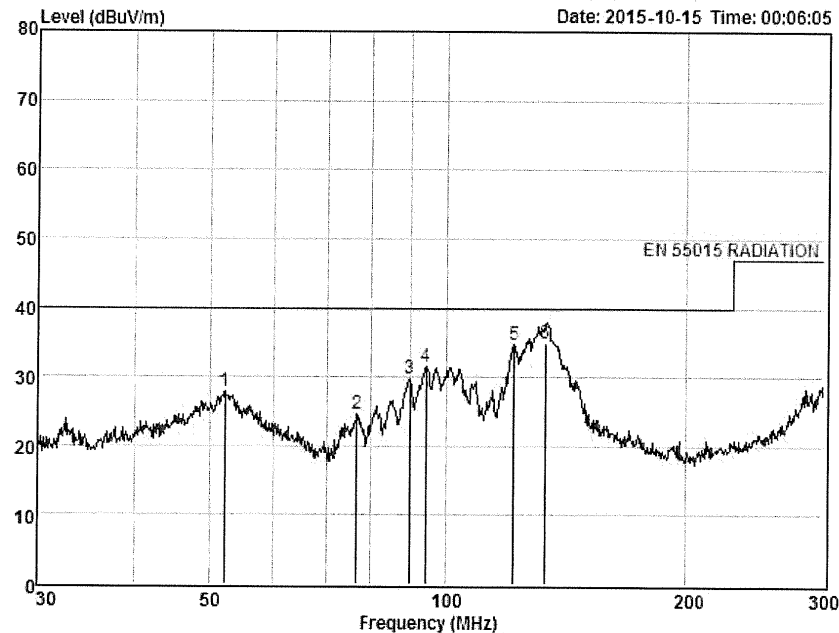
Item	Freq MHz	Read dBuA	AUX Factor dB	Cable Loss dB	Level dBuA	Limit dBuA	Margin dBuA	Remark
1	0.030	0.71	16.65	0.08	17.44	88.02	-70.58	Peak
2	0.052	-16.76	19.48	0.08	2.80	88.02	-85.22	Peak
3	0.160	-6.53	21.30	0.08	14.85	57.22	-42.37	Peak
4	0.468	-8.88	21.66	0.08	12.86	44.36	-31.50	Peak
5	1.105	-13.51	22.07	0.10	8.66	34.02	-25.36	Peak
6	1.798	-17.45	21.73	0.10	4.38	28.18	-23.80	Peak
7	3.761	-22.98	22.46	0.14	-0.35	22.02	-22.37	Peak
8	6.218	-25.90	22.52	0.18	-3.20	22.02	-25.22	Peak

Remarks: Level = Read + AUX Factor + Cable loss



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Data: 1 File: D:\REPORT DATA\TuoBo\PL-6060-48-YY-CCC-XXXX.EM6 (2)
Level (dBuV/m) Date: 2015-10-15 Time: 00:06:05



Condition : EN 55015 RADIATION 3m POL: HORIZONTAL
EUT : LED panel light
Model No : PL-6060-48-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer : Eric
Remark :
Temp : 24.2°C
Hum : 54%

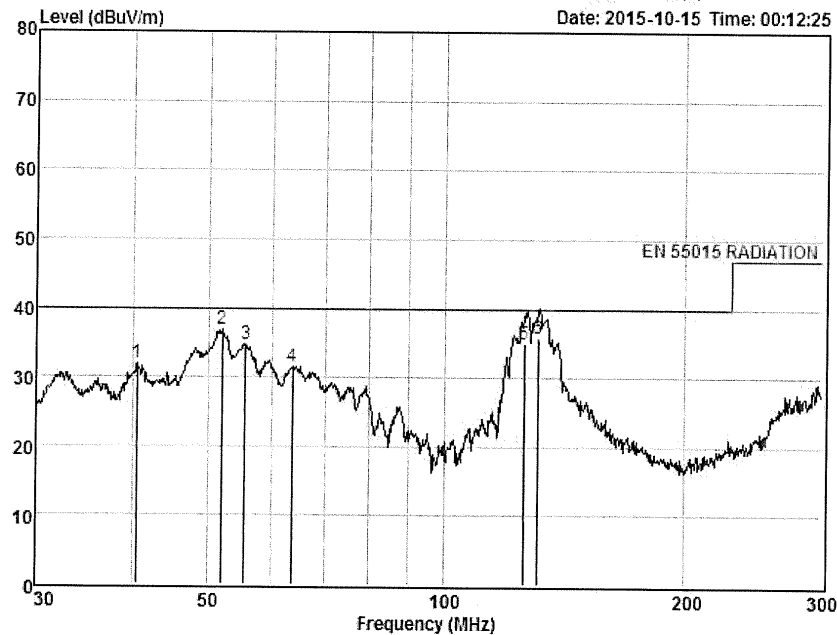
Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	52.13	44.90	13.38	30.63	0.24	27.89	40.00	-12.11	Peak
2	76.58	44.79	9.60	30.06	0.26	24.89	40.00	-15.41	Peak
3	89.77	50.33	9.44	30.23	0.34	29.88	40.00	-10.12	Peak
4	94.22	51.68	9.72	30.20	0.32	31.52	40.00	-8.48	Peak
5	121.93	51.74	12.24	29.64	0.43	34.77	40.00	-5.23	Peak
6	135.50	51.00	12.95	29.44	0.50	34.99	40.00	-5.01	QF

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



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Data: 2 File: D:\REPORT DATA\TuoBo\PL-6060-48-YY-CCC-XXXX.EM6 (2)
Level (dBuV/m) Date: 2015-10-15 Time: 00:12:25



Condition : EN 55015 RADIATION 3m POL: VERTICAL
EUT : LED panel light
Model No : PL-6060-48-YY-CCC-XXXX
Test Mode : CN
Power : AC 230V/50Hz
Test Engineer : Eric
Remark :
Temp : 24.2°C
Hum : 54%

Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamplifier Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	40.47	48.62	14.07	30.85	0.18	32.02	40.00	-7.98	Peak
2	51.89	53.82	13.38	30.83	0.24	36.81	40.00	-3.19	Peak
3	55.48	52.35	13.07	30.87	0.18	34.73	40.00	-5.27	Peak
4	63.70	49.79	11.98	30.52	0.24	31.49	40.00	-8.51	Peak
5	126.14	51.60	12.57	29.56	0.35	34.96	40.00	-5.04	QP
6	131.00	52.00	12.78	29.47	0.50	35.82	40.00	-4.18	QP

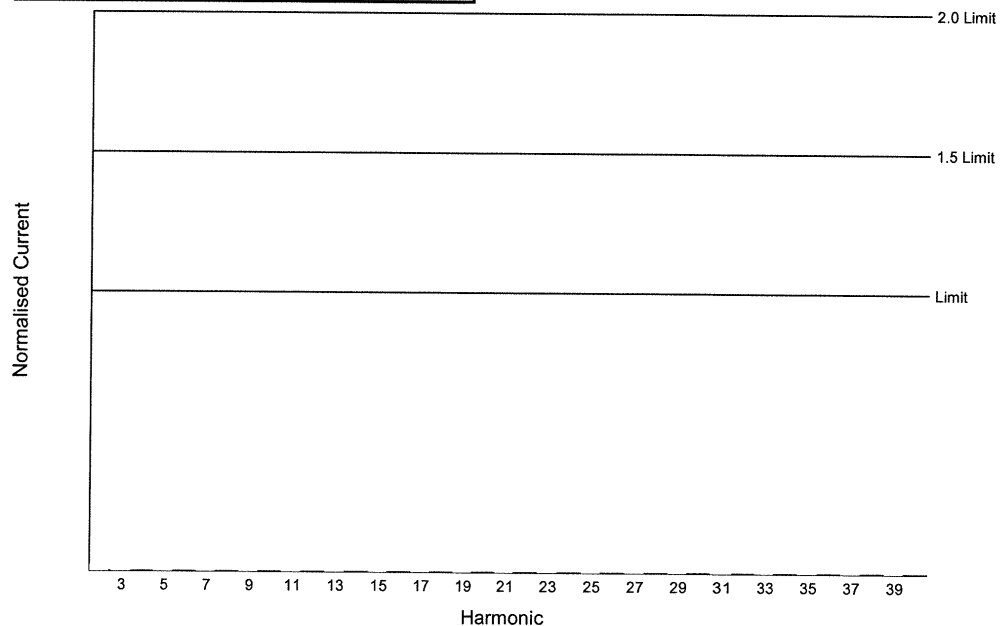
Remark: Level = Read Level + Antenna Factor - Preamplifier Factor + Cable Loss

Product: LED Panel Light Serial no: PL-6060-48-YY-CCC-XXXX Description: ON Test Date: 2015 Oct 14 10:38 Result Name: PL-6060-48-YY-CCC-XXXX H		2015 Oct 14 10:42 Page 1 of 3
Type of Test: EN61000:2006 Harmonics inc. interharmonics to EN61000-4-7:2002 Limits: Class C > 25W Power Analyzer: Voltech PM6000 SN: 200006700495 Firmware version: v1.22.07RC6 Channel(s): 1. SN: 090015501951, 28 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None Shunt(s): 1. SN: 091024301771, 4 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None AC Source: Mains / Manual Source		
Harmonic Results Against Chosen Limits: PASS	Notes: Specified power factor not equal to measured Supplied fundamental current not equal to measured	
Test Parameter Details Operating Frequency: Operating Voltage: Specified Power: Fundamental Current: Power Factor: Average Input Current: Maximum POHC: POHC Limit: Maximum THC: Minimum Power: Class Multiplier: Test Duration:	User Entered 50 230 0.0000 0.4900 0.3700 1 1.0000 00:02:30	Measured 49.9840 229.5103 41.3787 0.1843 0.9646 0.1864 0.0043 0.0465 0.0208

ALPHA

Product:	LED Panel Light	2015 Oct 14 10:42
Serial no:	PL-6060-48-YY-CCC-XXXX	Page 2 of 3
Description:	ON	
Result Name:	PL-6060-48-YY-CCC-XXXX H	
Voltech IEC61000-3 Windows Software 1.24.12		Test Date: 2015 Oct 14 10:38
Type of Test:	Fluctuating Harmonics Test - Normalised Worst Case Bar Chart (2006)	
Power Analyzer:	Voltech PM6000 SN: 200006700495 Firmware version: v1.22.07RC6	
Channel(s):	1. SN: 090015501951, 28 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None	
Shunt(s):	1. SN: 091024301771, 4 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None	
AC Source:	Mains / Manual Source	
Overall Result:	Notes: Specified power factor not equal to measured Supplied fundamental current not equal to measured	
PASS		

Class	Class C > 25W
Class Multiplier	1



ALPHA

Product:	LED Panel Light	2015 Oct 14 10:43
Serial no:	PL-6060-48-YY-CCC-XXXX	Page 3 of 3
Description:	ON	
Result Name:	PL-6060-48-YY-CCC-XXXX H	
Voltech IEC61000-3 Windows Software 1.24.12		Test Date: 2015 Oct 14 10:38
Type of Test:	Fluctuating Harmonics Test - Worst Case Table (2006)	
Power Analyzer:	Voltech PM6000 SN: 200006700495 Firmware version: v1.22.07RC6	
Channel(s):	1. SN: 090015501951, 28 Adjusted Date: 16 APR 2013. 2. SN: None Adjusted Date: None 3. SN: None Adjusted Date: None 4. SN: None Adjusted Date: None 5. SN: None Adjusted Date: None 6. SN: None Adjusted Date: None	
Shunt(s):	1. SN: 091024301771, 4 Adjusted Date: 16 APR 2013. 2. SN: None Adjusted Date: None 3. SN: None Adjusted Date: None 4. SN: None Adjusted Date: None 5. SN: None Adjusted Date: None 6. SN: None Adjusted Date: None	
AC Source:	Mains / Manual Source	
Overall Result:	Notes: Specified power factor not equal to measured Supplied fundamental current not equal to measured	
PASS		

Class	Class C > 25W
Class Multiplier	1

Harm	Limit 1	Limit 2	Average Reading	<L1 <L2	Max Reading	<L2	Pass FAIL	Harm	Limit 1	Limit 2	Average Reading	<L1 <L2	Max Reading	<L2	Pass FAIL
2	9.800mA	14.70mA	0.204mA	N/A	0.223mA	N/A	N/A	3	54.39mA	81.58mA	18.94mA	✓	19.05mA	✓	Pass
4	None	None	0.116mA		0.135mA		N/A	5	49.00mA	73.50mA	3.786mA	N/A	3.824mA	N/A	Pass
6	None	None	0.131mA		0.143mA		N/A	7	34.29mA	51.45mA	4.300mA	N/A	4.357mA	N/A	Pass
8	None	None	0.096mA		0.114mA		N/A	9	24.50mA	36.75mA	1.540mA	N/A	1.572mA	N/A	Pass
10	None	None	0.091mA		0.100mA		N/A	11	14.70mA	22.05mA	1.468mA	N/A	1.489mA	N/A	Pass
12	None	None	0.159mA		0.179mA		N/A	13	14.70mA	22.05mA	1.510mA	N/A	1.532mA	N/A	Pass
14	None	None	0.091mA		0.103mA		N/A	15	14.70mA	22.05mA	2.402mA	N/A	2.418mA	N/A	Pass
16	None	None	0.094mA		0.109mA		N/A	17	14.70mA	22.05mA	1.940mA	N/A	1.977mA	N/A	Pass
18	None	None	0.097mA		0.110mA		N/A	19	14.70mA	22.05mA	1.115mA	N/A	1.132mA	N/A	Pass
20	None	None	0.108mA		0.118mA		N/A	21	14.70mA	22.05mA	1.028mA	N/A	1.064mA	N/A	Pass
22	None	None	0.107mA		0.120mA		N/A	23	14.70mA	22.05mA	0.913mA	N/A	0.981mA	N/A	Pass
24	None	None	0.168mA		0.186mA		N/A	25	14.70mA	22.05mA	2.474mA	N/A	2.520mA	N/A	Pass
26	None	None	0.141mA		0.155mA		N/A	27	14.70mA	22.05mA	2.540mA	N/A	2.599mA	N/A	Pass
28	None	None	0.112mA		0.124mA		N/A	29	14.70mA	22.05mA	0.852mA	N/A	0.939mA	N/A	Pass
30	None	None	0.097mA		0.109mA		N/A	31	14.70mA	22.05mA	0.676mA	N/A	0.731mA	N/A	Pass
32	None	None	0.085mA		0.094mA		N/A	33	14.70mA	22.05mA	0.590mA	N/A	0.615mA	N/A	Pass
34	None	None	0.089mA		0.102mA		N/A	35	14.70mA	22.05mA	0.839mA	N/A	0.883mA	N/A	Pass
36	None	None	0.139mA		0.151mA		N/A	37	14.70mA	22.05mA	1.207mA	N/A	1.221mA	N/A	Pass
38	None	None	0.104mA		0.121mA		N/A	39	14.70mA	22.05mA	0.767mA	N/A	0.817mA	N/A	Pass
40	None	None	0.089mA		0.099mA		N/A								

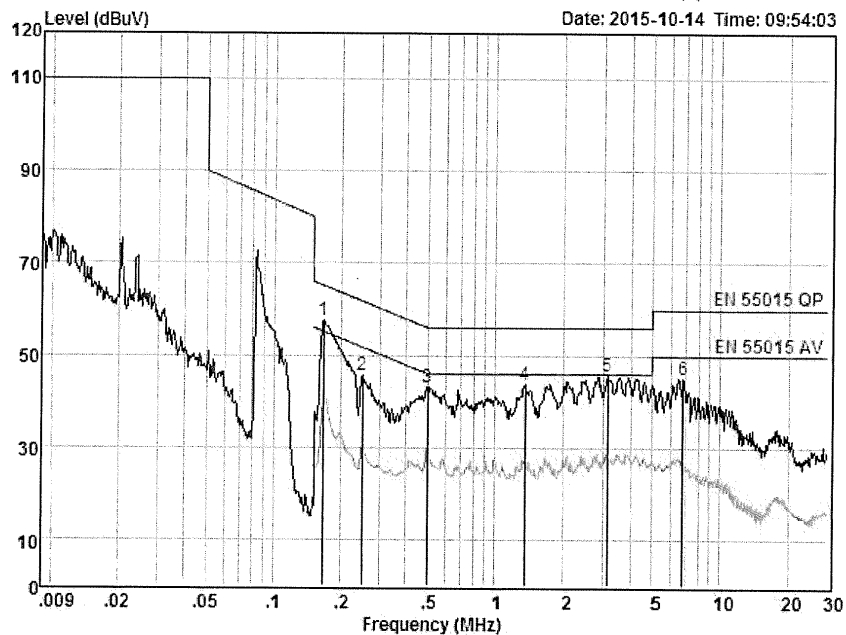
<L1 : Reading is below limit 1.

<L2 : Reading is below limit 2.



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Data: 4 File: E:\TEST REPORT\TuoBo\PL-6060-60-YY-CCC-XXXX.EM6 (8) Date: 2015-10-14 Time: 09:54:03



Condition : EN 55015 QP POL: NEUTRAL Temp:23.7 °C Hum:51 %
EUT : LED Panel Light
Model No : PL-6060-60-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

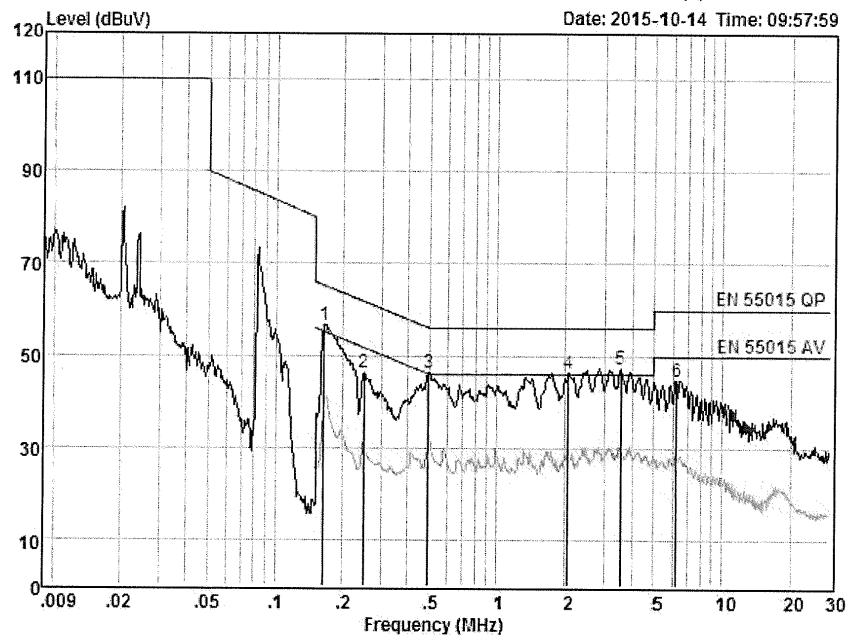
Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.166	47.95	0.03	-9.52	0.10	57.60	65.18	-7.58	Peak
2	0.250	35.90	0.03	-9.52	0.10	45.55	61.74	-16.19	Peak
3	0.499	33.56	0.03	-9.52	0.10	43.27	56.02	-12.75	Peak
4	1.353	33.86	0.05	-9.66	0.10	43.67	56.00	-12.33	Peak
5	3.146	35.52	0.07	-9.81	0.12	45.52	56.00	-10.48	Peak
6	6.799	34.94	0.12	-9.97	0.15	45.18	60.00	-14.82	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss



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Data: 8 File: E:\TEST REPORT\TuoBo\PL-6060-60-YY-CCC-XXXX.EM6 (8) Date: 2015-10-14 Time: 09:57:59



Condition : EN 55015 QP POL: LINE Temp: 23.7 °C Hum: 51 %
EUT : LED Panel Light
Model No : PL-6060-60-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

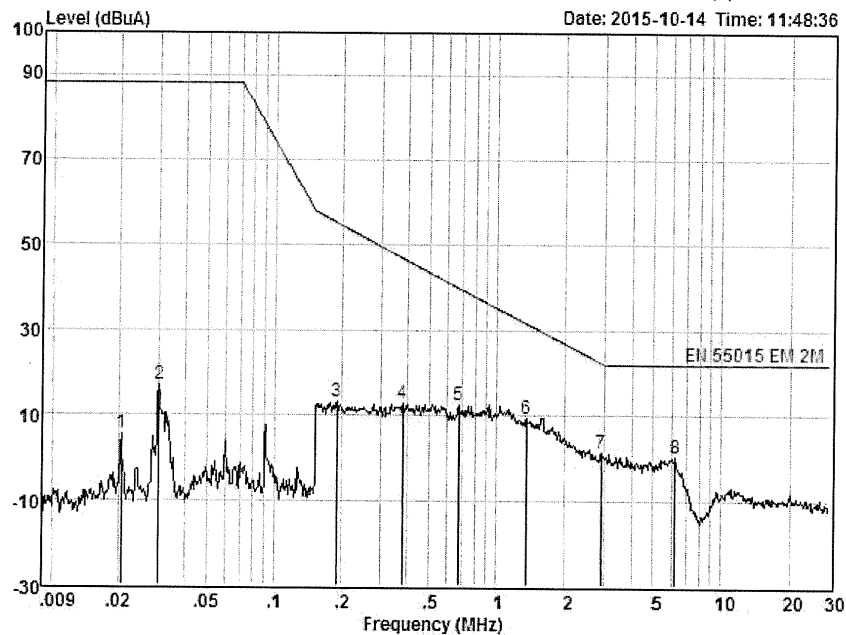
Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.164	47.01	0.03	-9.52	0.10	56.66	65.25	-8.59	Peak
2	0.250	36.69	0.03	-9.52	0.10	46.34	61.74	-15.40	Peak
3	0.495	36.77	0.03	-9.58	0.10	46.48	56.08	-9.60	Peak
4	2.063	36.47	0.06	-9.73	0.10	46.36	56.00	-9.64	Peak
5	3.553	37.34	0.08	-9.85	0.12	47.39	56.00	-8.61	Peak
6	6.216	34.64	0.11	-9.97	0.14	44.86	60.00	-15.14	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss



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Data: 3 File: E:\TEST REPORT\TuoBo\PL-6060-60-YY-CCC-XXXX EM.EM6 (9)
Date: 2015-10-14 Time: 11:48:36



Condition : EN 55015 EM 2M FOL: X Temp: 22 °C Hum: 56 %
EUT : LED Panel Light
Model No : PL-6060-48-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

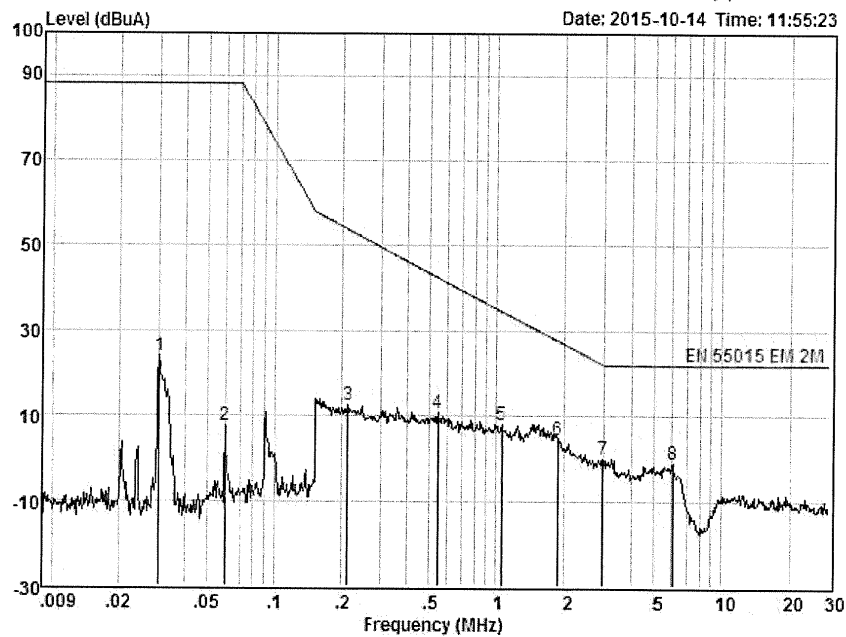
Item	Freq MHz	Read dBuA	AUX Factor dB	Cable Loss dB	Level dBuA	Limit dBuA	Margin dBuA	Remark
1	0.021	-7.89	13.40	0.08	5.59	88.02	-82.43	Peak
2	0.030	0.68	16.35	0.08	17.11	88.02	-70.91	Peak
3	0.190	-6.56	19.72	0.08	13.24	55.18	-41.94	Peak
4	0.379	-7.46	20.27	0.08	12.89	46.89	-34.00	Peak
5	0.679	-8.10	20.60	0.08	12.58	39.87	-27.29	Peak
6	1.353	-11.03	20.40	0.10	9.47	31.59	-22.12	Peak
7	2.901	-18.88	20.19	0.13	1.47	22.42	-20.95	Peak
8	6.218	-20.27	20.57	0.16	0.48	22.02	-21.54	Peak

Remarks: Level = Read + AUX Factor + Cable loss



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Data: 6 File: E:\TEST REPORT\TuoBo\PL-6060-60-YY-CCC-XXXX EM.EM6 (9) Date: 2015-10-14 Time: 11:55:23



Condition : EN 55015 EM 2M POL: Y Temp: 22 °C Hum: 56 %
EUT : LED Panel Light
Model No : PL-6060-60-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

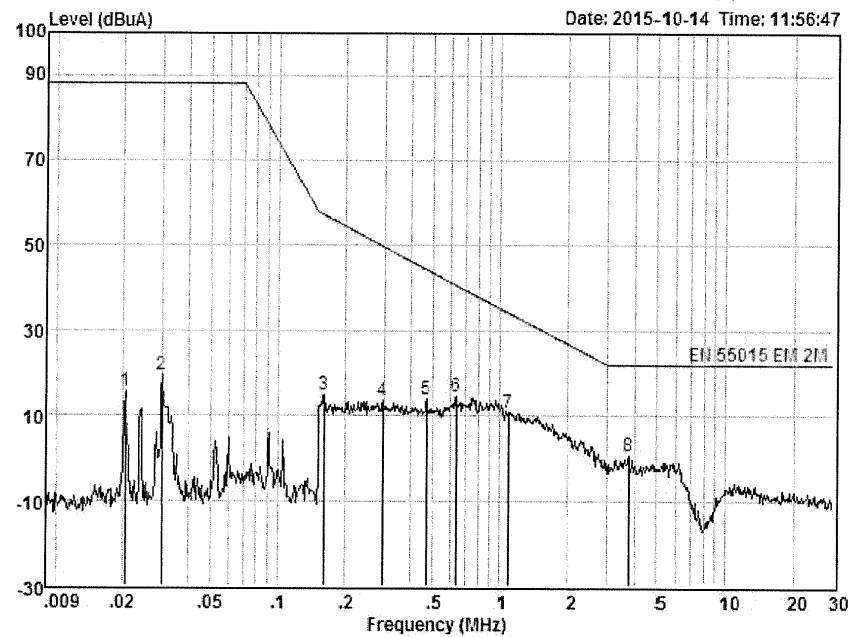
Item	Freq MHz	Read dBuA	AUX Factor dB	Cable Loss dB	Level dBuA	Limit dBuA	Margin dBuA	Remark
1	0.030	7.27	16.50	0.08	23.85	88.02	-64.17	Peak
2	0.060	-11.98	19.40	0.08	7.50	88.02	-80.52	Peak
3	0.213	-8.52	21.01	0.08	12.57	53.81	-41.24	Peak
4	0.546	-10.85	21.47	0.08	10.70	42.51	-31.81	Peak
5	1.052	-13.93	21.89	0.10	8.06	34.61	-26.55	Peak
6	1.857	-17.29	21.62	0.10	4.43	27.79	-23.36	Peak
7	2.972	-22.09	21.98	0.13	0.02	22.13	-22.11	Peak
8	6.069	-24.17	22.96	0.18	-1.03	22.02	-23.05	Peak

Remarks: Level = Read + AUX Factor + Cable loss



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Data: 9 File: E:\TEST REPORT\TuoBo\PL-6060-60-YY-CCC-XXXX EM.EM6 (9) Date: 2015-10-14 Time: 11:56:47



Condition : EN 55015 EM 2M FOL: Z Temp: 22 °C Hum: 56 %
EUT : LED Panel Light
Model No : PL-6060-60-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

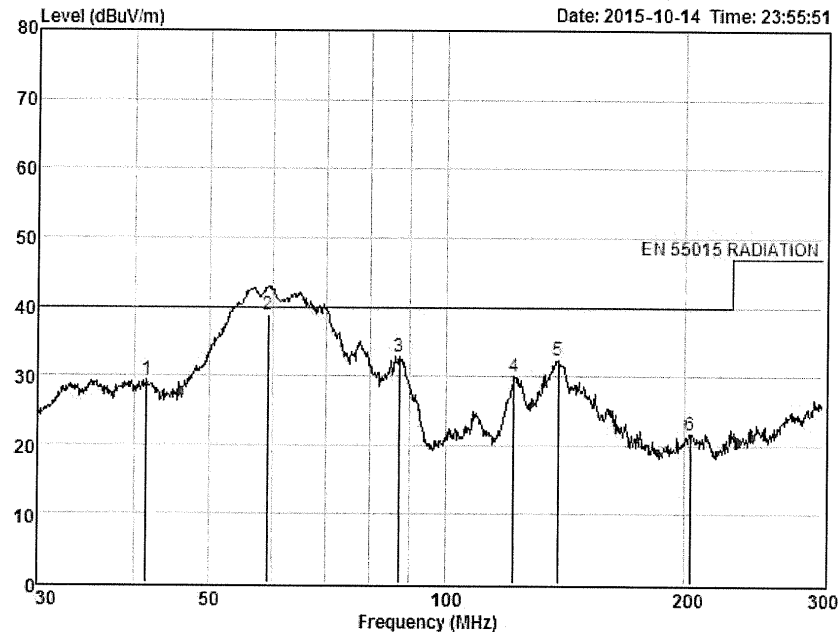
Item	Freq MHz	Read dBuA	AUX Factor dB	Cable Loss dB	Level dBuA	Limit dBuA	Margin dBuA	Remark
1	0.021	2.38	13.32	0.08	15.78	88.02	-72.24	Peak
2	0.030	2.71	16.65	0.08	19.44	88.02	-68.58	Peak
3	0.160	-6.53	21.30	0.08	14.85	57.22	-42.37	Peak
4	0.297	-8.08	21.49	0.08	13.49	49.82	-36.33	Peak
5	0.468	-7.88	21.66	0.08	13.86	44.36	-30.50	Peak
6	0.636	-7.12	21.80	0.08	14.76	40.65	-25.89	Peak
7	1.087	-11.38	22.07	0.10	10.79	34.22	-23.43	Peak
8	3.761	-21.95	22.46	0.14	0.65	22.02	-21.37	Peak

Remarks: Level = Read + AUX Factor + Cable loss



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Website: <http://www.a-lab.cn> Email: service@a-lab.cn

Data: 1 File: D:\REPORT DATA\TuoBo\PL-6060-60-YY-CCC-XXXX.EM6 (2)
Level (dBuV/m) Date: 2015-10-14 Time: 23:55:51



Condition : EN 55015 RADIATION 3m POL: HORIZONTAL
EUT : LED panel light
Model No : PL-6060-60-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer : Eric
Remark :
Temp : 24.2°C
Hum : 54%

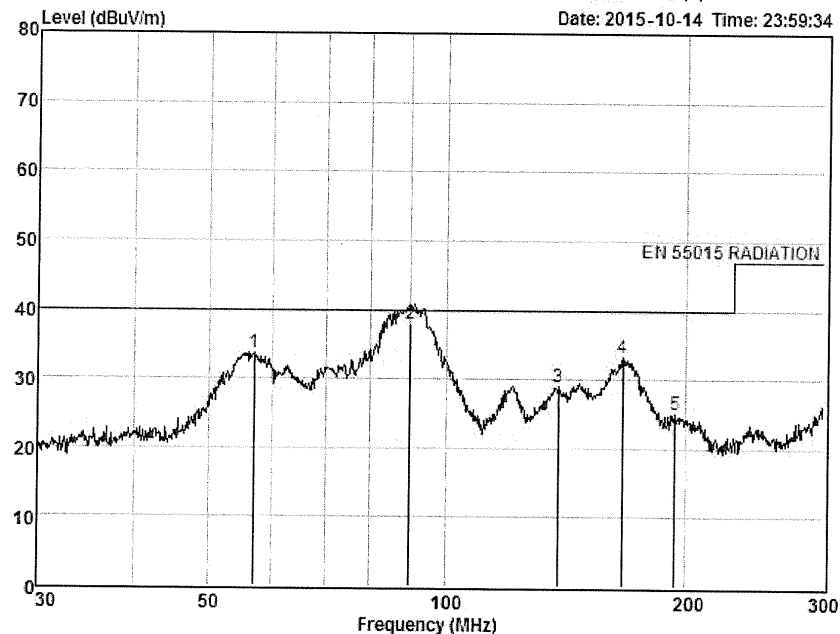
Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	41.41	46.16	13.93	30.85	0.19	29.43	40.00	-10.57	Peak
2	59.14	56.70	12.75	30.89	0.32	36.88	40.00	-1.12	QP
3	87.12	53.22	9.41	30.14	0.32	32.81	40.00	-7.19	Peak
4	121.93	47.09	12.24	29.64	0.43	30.12	40.00	-9.88	Peak
5	138.71	47.91	13.37	29.32	0.38	32.34	40.00	-7.66	Peak
6	203.29	40.14	9.97	28.79	0.41	21.73	40.00	-18.27	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



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Data: 2 File: D:\REPORT DATA\TuoBo\PL-6060-60-YY-CCC-XXXX.EM6 (2)
Level (dBuV/m) Date: 2015-10-14 Time: 23:59:34



Condition : EN 55015 RADIATION 3m POL: VERTICAL
EUT : LED panel light
Model No : PL-6060-60-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer : Eric
Remark :
Temp : 24.2°C
Hum : 54%

Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	56.77	51.58	12.91	30.68	0.14	38.75	40.00	-6.25	Peak
2	89.97	58.40	9.44	30.28	0.34	37.95	40.00	-2.05	QP
3	138.71	44.60	13.37	29.32	0.38	29.03	40.00	-10.97	Peak
4	167.93	48.53	13.37	29.13	0.42	33.19	40.00	-6.81	Peak
5	194.14	43.11	10.24	28.89	0.55	25.01	40.00	-14.99	Peak

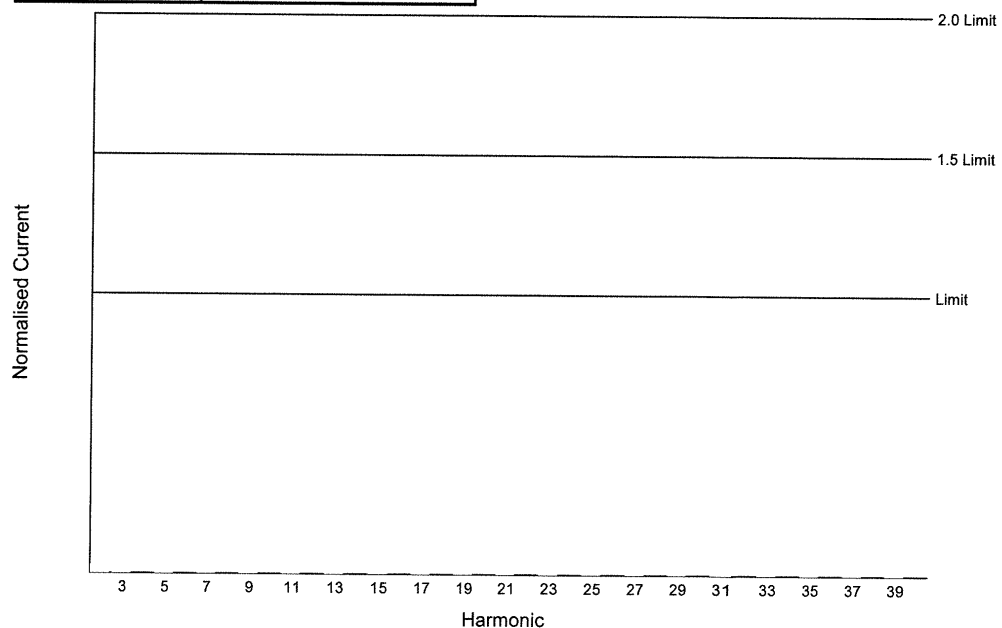
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

Product: LED Panel Light Serial no: PL-6060-60-YY-CCC-XXXX Description: ON Test Date: 2015 Oct 14 10:57 Result Name: PL-6060-60-YY-CCC-XXXX H		2015 Oct 14 11:00 Page 1 of 3
Type of Test: EN61000:2006 Harmonics inc. interharmonics to EN61000-4-7:2002 Limits: Class C > 25W Power Analyzer: Voltech PM6000 SN: 200006700495 Firmware version: v1.22.07RC6 Channel(s): 1. SN: 090015501951, 28 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None Shunt(s): 1. SN: 091024301771, 4 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None AC Source: Mains / Manual Source		
Harmonic Results Against Chosen Limits: PASS	Notes: Specified power factor not equal to measured Supplied fundamental current not equal to measured	
Test Parameter Details Operating Frequency: Operating Voltage: Specified Power: Fundamental Current: Power Factor: Average Input Current: Maximum POHC: POHC Limit: Maximum THC: Minimum Power: Class Multiplier: Test Duration:	User Entered 50 230 0.0000 0.5400 0.4800 1 1.0000 00:02:30	Measured 49.9840 229.7212 59.1425 0.2616 0.9738 0.2638 0.0055 0.0512 0.0299

ALPHA

Product:	LED Panel Light	2015 Oct 14 11:00
Serial no:	PL-6060-60-YY-CCC-XXXX	Page 2 of 3
Description:	ON	
Result Name:	PL-6060-60-YY-CCC-XXXX H	
Voltech IEC61000-3 Windows Software 1.24.12		Test Date: 2015 Oct 14 10:57
Type of Test:	Fluctuating Harmonics Test - Normalised Worst Case Bar Chart (2006)	
Power Analyzer:	Voltech PM6000 SN: 200006700495 Firmware version: v1.22.07RC6	
Channel(s):	1. SN: 090015501951, 28 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None	
Shunt(s):	1. SN: 091024301771, 4 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None	
AC Source:	Mains / Manual Source	
Overall Result:	Notes: Specified power factor not equal to measured Supplied fundamental current not equal to measured	
PASS		

Class	Class C > 25W
Class Multiplier	1



ALPHA	
Product: LED Panel Light	2015 Oct 14 11:01
Serial no: PL-6060-60-YY-CCC-XXXX	Page 3 of 3
Description: ON	
Result Name: PL-6060-60-YY-CCC-XXXX H	
Voltech IEC61000-3 Windows Software 1.24.12	Test Date: 2015 Oct 14 10:57
Type of Test: Fluctuating Harmonics Test - Worst Case Table (2006)	
Power Analyzer: Voltech PM6000 SN: 200006700495 Firmware version: v1.22.07RC6	
Channel(s):	
1. SN: 090015501951, 28 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None	
3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None	
5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None	
Shunt(s):	
1. SN: 091024301771, 4 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None	
3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None	
5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None	
AC Source: Mains / Manual Source	
Overall Result:	Notes:
PASS	Specified power factor not equal to measured Supplied fundamental current not equal to measured

Class	Class C > 25W
Class Multiplier	1

Harm	Limit 1	Limit 2	Average Reading	<L1 <L2	Max Reading	<L2	Pass FAIL	Harm	Limit 1	Limit 2	Average Reading	<L1 <L2	Max Reading	<L2	Pass FAIL
2	10.80mA	16.20mA	0.308mA	N/A	0.336mA	N/A	N/A	3	77.75mA	116.6mA	26.05mA	✓ ✓	26.26mA	✓	Pass
4	None	None	0.240mA		0.265mA		N/A	5	54.00mA	81.00mA	7.298mA	✓ ✓	7.371mA	✓	Pass
6	None	None	0.189mA		0.209mA		N/A	7	37.79mA	56.69mA	7.740mA	✓ ✓	7.786mA	✓	Pass
8	None	None	0.124mA		0.147mA		N/A	9	27.00mA	40.50mA	3.523mA	N/A	3.565mA	N/A	Pass
10	None	None	0.111mA		0.123mA		N/A	11	16.20mA	24.30mA	2.356mA	N/A	2.388mA	N/A	Pass
12	None	None	0.179mA		0.198mA		N/A	13	16.20mA	24.30mA	3.592mA	N/A	3.642mA	N/A	Pass
14	None	None	0.118mA		0.130mA		N/A	15	16.20mA	24.30mA	4.446mA	N/A	4.463mA	N/A	Pass
16	None	None	0.103mA		0.116mA		N/A	17	16.20mA	24.30mA	2.969mA	N/A	3.047mA	N/A	Pass
18	None	None	0.104mA		0.118mA		N/A	19	16.20mA	24.30mA	1.317mA	N/A	1.353mA	N/A	Pass
20	None	None	0.128mA		0.142mA		N/A	21	16.20mA	24.30mA	0.928mA	N/A	0.973mA	N/A	Pass
22	None	None	0.141mA		0.155mA		N/A	23	16.20mA	24.30mA	1.856mA	N/A	1.982mA	N/A	Pass
24	None	None	0.181mA		0.197mA		N/A	25	16.20mA	24.30mA	3.642mA	N/A	3.685mA	N/A	Pass
26	None	None	0.122mA		0.135mA		N/A	27	16.20mA	24.30mA	3.002mA	N/A	3.097mA	N/A	Pass
28	None	None	0.145mA		0.161mA		N/A	29	16.20mA	24.30mA	0.445mA	N/A	0.571mA	N/A	Pass
30	None	None	0.129mA		0.142mA		N/A	31	16.20mA	24.30mA	0.961mA	N/A	1.003mA	N/A	Pass
32	None	None	0.096mA		0.109mA		N/A	33	16.20mA	24.30mA	0.352mA	N/A	0.416mA	N/A	Pass
34	None	None	0.111mA		0.124mA		N/A	35	16.20mA	24.30mA	0.886mA	N/A	0.945mA	N/A	Pass
36	None	None	0.138mA		0.153mA		N/A	37	16.20mA	24.30mA	0.875mA	N/A	0.920mA	N/A	Pass
38	None	None	0.126mA		0.140mA		N/A	39	16.20mA	24.30mA	0.471mA	N/A	0.523mA	N/A	Pass
40	None	None	0.138mA		0.155mA		N/A								

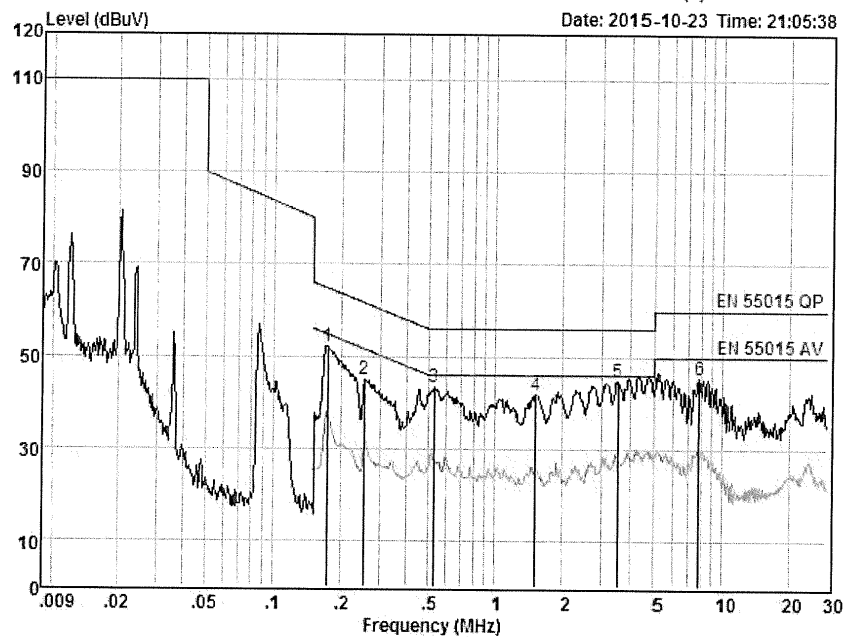
<L1 : Reading is below limit 1.

<L2 : Reading is below limit 2.



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Data: 4 File: E:\TEST REPORT\TuoBo\PL-6062-26-YY-CCC-XXXX.EM6 (8) Date: 2015-10-23 Time: 21:05:38



Condition : EN 55015 QP FOL: LINE Temp: 23.7 °C Hum: 51 %
EUT : LED Panel Light
Model No : PL-6062-26-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

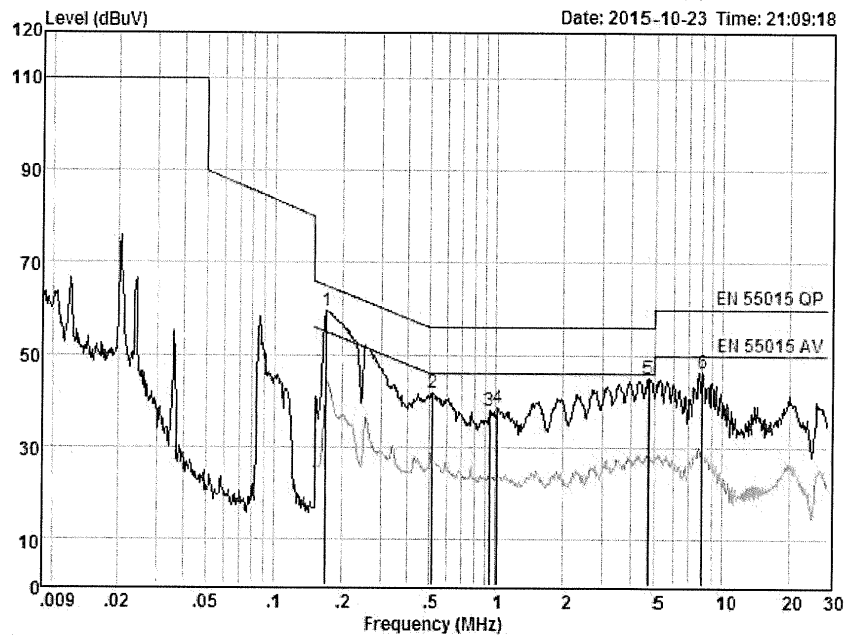
Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.172	42.50	0.03	-9.52	0.10	52.15	64.84	-12.69	Peak
2	0.254	35.46	0.03	-9.56	0.10	45.15	61.61	-16.46	Peak
3	0.528	33.80	0.03	-9.58	0.10	43.51	56.00	-12.49	Peak
4	1.516	31.89	0.05	-9.68	0.10	41.72	56.00	-14.28	Peak
5	3.553	34.79	0.08	-9.65	0.12	44.84	56.00	-11.16	Peak
6	7.804	35.06	0.14	-9.96	0.16	45.32	60.00	-14.68	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss



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Data: 8 File: E:\TEST REPORT\T.TuoBo\PL-6062-26-YY-CCC-XXXX.EM6 (8) Date: 2015-10-23 Time: 21:09:18



Condition : EN 55015 QP FOL: NEUTRAL Temp:23.7 °C Hum:51 %
EUT : LED Panel Light
Model No : PL-6062-26-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

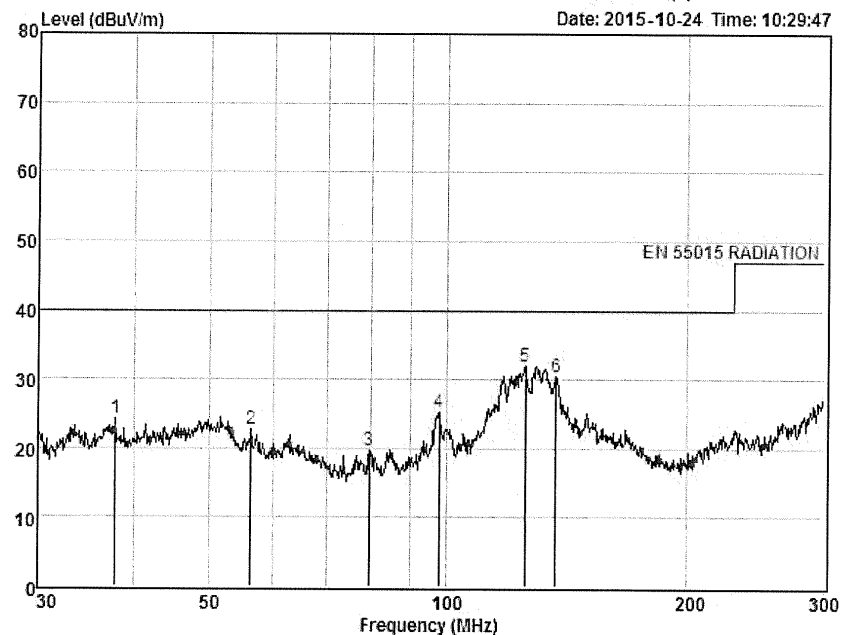
Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.169	50.01	0.03	-9.52	0.10	59.66	65.01	-5.35	Peak
2	0.516	32.06	0.03	-9.58	0.10	41.77	56.00	-14.23	Peak
3	0.934	28.24	0.04	-9.62	0.10	38.00	56.00	-18.00	Peak
4	1.020	28.79	0.04	-9.63	0.10	38.56	56.00	-17.44	Peak
5	4.757	34.89	0.10	-9.91	0.12	45.02	56.00	-10.98	Peak
6	8.058	36.10	0.14	-9.96	0.16	46.36	60.00	-13.64	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss



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Data: 3 File: D:\REPORT DATA\TuoBo\PL-6262-26-YY-CCC-XXX.EM6 (4)
Date: 2015-10-24 Time: 10:29:47



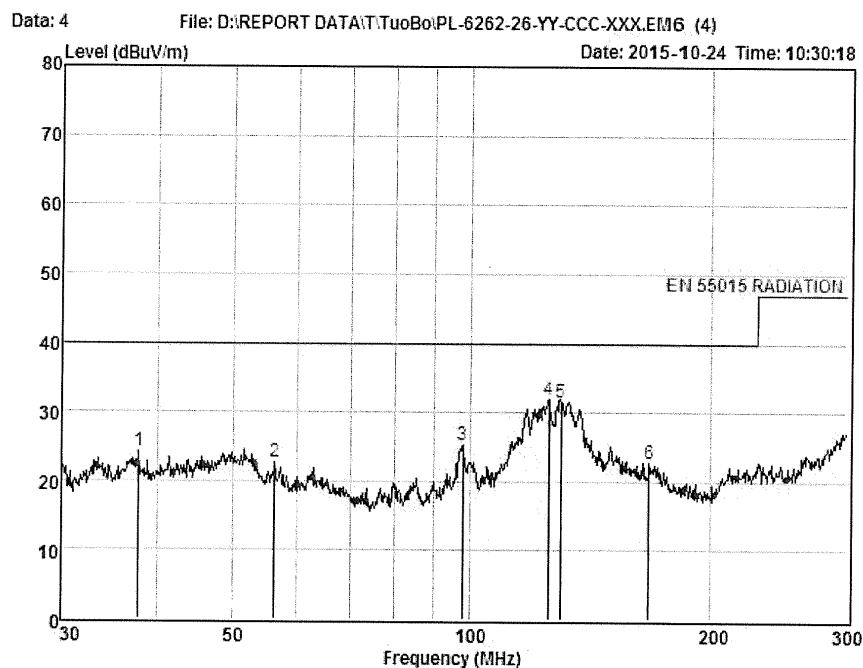
Condition : EN 55015 RADIATION 3m POL: VERTICAL
EUT : LED panel light
Model No : PL-6262-26-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer : Eric
Remark :
Temp : 24.2°C
Hum : 54%

Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	37.85	41.27	13.73	30.84	0.08	24.24	40.00	-15.76	Peak
2	56.25	40.28	13.07	30.88	0.16	22.63	40.00	-17.37	Peak
3	79.46	40.20	9.29	29.96	0.23	19.76	40.00	-20.24	Peak
4	97.98	45.21	10.01	30.17	0.29	25.34	40.00	-14.66	Peak
5	125.93	45.76	12.46	29.56	0.38	32.01	40.00	-7.99	Peak
6	137.76	46.27	13.22	29.36	0.41	30.54	40.00	-9.46	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



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Condition : EN 55015 RADIATION 3m POL: HORIZONTAL
EUT : LED panel light
Model No : PL-6262-26-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer : Eric
Remark :
Temp : 24.2°C
Hum : 54%

Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	37.85	41.27	13.73	30.84	0.08	24.24	40.00	-15.76	Peak
2	56.25	40.28	13.07	30.86	0.16	22.63	40.00	-17.37	Peak
3	97.98	45.21	10.01	30.17	0.29	25.34	40.00	-14.66	Peak
4	125.93	48.76	12.46	29.56	0.35	32.01	40.00	-7.99	Peak
5	130.35	47.89	12.79	29.50	0.44	31.62	40.00	-8.38	Peak
6	169.09	37.94	13.37	29.12	0.50	22.69	40.00	-17.31	Peak

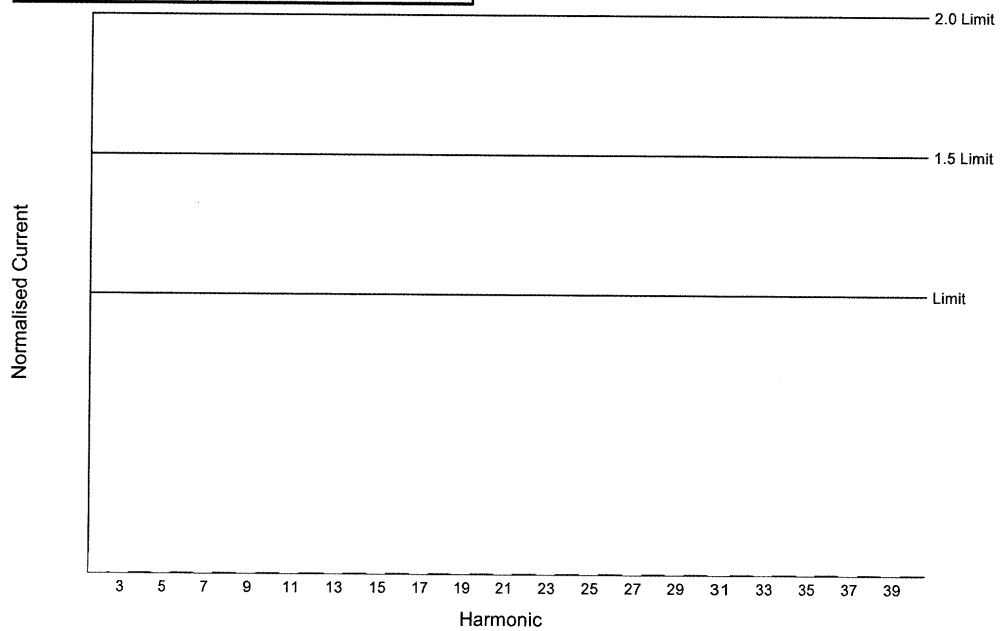
Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

Product: LED Panel Light Serial no: PL-6262-26-YY-CC-XXXX Description: ON Test Date: 2015 Nov 4 14:30 Result Name: PL-6262-26-YY-CCC-XXXX H		2015 Nov 4 14:34 Page 1 of 3
Type of Test: EN61000:2006 Harmonics inc. interharmonics to EN61000-4-7:2002 Limits: Class C > 25W Power Analyzer: Voltech PM6000 SN: 200006700495 Firmware version: v1.22.07RC6 Channel(s): 1. SN: 090015501951, 28 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None Shunt(s): 1. SN: 091024301771, 4 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None AC Source: Mains / Manual Source		
Harmonic Results Against Chosen Limits: PASS	Notes:	
Test Parameter Details Operating Frequency: Operating Voltage: Specified Power: Fundamental Current: Power Factor: Average Input Current: Maximum POHC: POHC Limit: Maximum THC: Minimum Power: Class Multiplier: Test Duration:	User Entered 50 230 1.4000 0.1900 0.9600 1 1.0000 00:02:30	Measured 49.9840 229.5486 42.6695 0.1895 0.9717 0.1906 0.0044 0.0180 0.0202

ALPHA

Product:	LED Panel Light	2015 Nov 4 14:34
Serial no:	PL-6262-26-YY-CC-XXXX	Page 2 of 3
Description:	ON	
Result Name:	PL-6262-26-YY-CCC-XXXX H	
Voltech IEC61000-3 Windows Software 1.24.12		Test Date: 2015 Nov 4 14:30
Type of Test:	Fluctuating Harmonics Test - Normalised Worst Case Bar Chart (2006)	
Power Analyzer:	Voltech PM6000 SN: 200006700495 Firmware version: v1.22.07RC6	
Channel(s):	1. SN: 090015501951, 28 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None	
Shunt(s):	1. SN: 091024301771, 4 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None 3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None 5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None	
AC Source:	Mains / Manual Source	
Overall Result:	PASS	

Class	Class C > 25W
Class Multiplier	1



ALPHA

Product: LED Panel Light
Serial no: PL-6262-26-YY-CC-XXXX
Description: ON
Result Name: PL-6262-26-YY-CCC-XXXX H

2015 Nov 4 14:35
Page 3 of 3

Voltech IEC61000-3 Windows Software 1.24.12 Test Date: 2015 Nov 4 14:30

Type of Test: Fluctuating Harmonics Test - Worst Case Table (2006)
Power Analyzer: Voltech PM6000 SN: 200006700495 Firmware version: v1.22.07RC6

Channel(s):

1. SN: 090015501951, 28 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None

3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None

5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None

Shunt(s):

1. SN: 091024301771, 4 Adjusted Date: 16 APR 2013. 2. SN:None Adjusted Date:None

3. SN:None Adjusted Date:None 4. SN:None Adjusted Date:None

5. SN:None Adjusted Date:None 6. SN:None Adjusted Date:None

AC Source: Mains / Manual Source

Overall Result:

PASS

Class Class C > 25W

Class Multiplier 1

Harm	Limit 1	Limit 2	Average Reading	<L1 <L2	Max Reading	<L2	Pass FAIL	Harm	Limit 1	Limit 2	Average Reading	<L1 <L2	Max Reading	<L2	Pass FAIL
2	3.800mA	5.700mA	0.243mA	N/A	0.264mA	N/A	N/A	3	54.71mA	82.07mA	18.10mA	✓✓	18.22mA	✓	Pass
4	None	None	0.167mA		0.189mA		N/A	5	19.00mA	28.49mA	4.647mA	N/A	4.681mA	N/A	Pass
6	None	None	0.154mA		0.169mA		N/A	7	13.30mA	19.94mA	4.331mA	N/A	4.378mA	N/A	Pass
8	None	None	0.107mA		0.132mA		N/A	9	9.500mA	14.24mA	1.385mA	N/A	1.384mA	N/A	Pass
10	None	None	0.109mA		0.121mA		N/A	11	5.700mA	8.549mA	1.319mA	N/A	1.333mA	N/A	Pass
12	None	None	0.163mA		0.178mA		N/A	13	5.700mA	8.549mA	1.804mA	N/A	1.835mA	N/A	Pass
14	None	None	0.102mA		0.113mA		N/A	15	5.700mA	8.549mA	2.550mA	N/A	2.567mA	N/A	Pass
16	None	None	0.098mA		0.111mA		N/A	17	5.700mA	8.549mA	1.618mA	N/A	1.647mA	N/A	Pass
18	None	None	0.112mA		0.124mA		N/A	19	5.700mA	8.549mA	1.005mA	N/A	1.031mA	N/A	Pass
20	None	None	0.125mA		0.138mA		N/A	21	5.700mA	8.549mA	0.606mA	N/A	0.635mA	N/A	Pass
22	None	None	0.129mA		0.141mA		N/A	23	5.700mA	8.549mA	1.750mA	N/A	1.810mA	N/A	Pass
24	None	None	0.177mA		0.193mA		N/A	25	5.700mA	8.549mA	2.859mA	N/A	2.874mA	N/A	Pass
26	None	None	0.111mA		0.122mA		N/A	27	5.700mA	8.549mA	1.956mA	N/A	2.032mA	N/A	Pass
28	None	None	0.110mA		0.124mA		N/A	29	5.700mA	8.549mA	0.344mA	N/A	0.378mA	N/A	Pass
30	None	None	0.103mA		0.117mA		N/A	31	5.700mA	8.549mA	0.811mA	N/A	0.828mA	N/A	Pass
32	None	None	0.112mA		0.122mA		N/A	33	5.700mA	8.549mA	0.532mA	N/A	0.567mA	N/A	Pass
34	None	None	0.115mA		0.129mA		N/A	35	5.700mA	8.549mA	1.301mA	N/A	1.325mA	N/A	Pass
36	None	None	0.125mA		0.139mA		N/A	37	5.700mA	8.549mA	1.001mA	N/A	1.035mA	N/A	Pass
38	None	None	0.113mA		0.123mA		N/A	39	5.700mA	8.549mA	0.342mA	N/A	0.359mA	N/A	Pass
40	None	None	0.105mA		0.119mA		N/A								

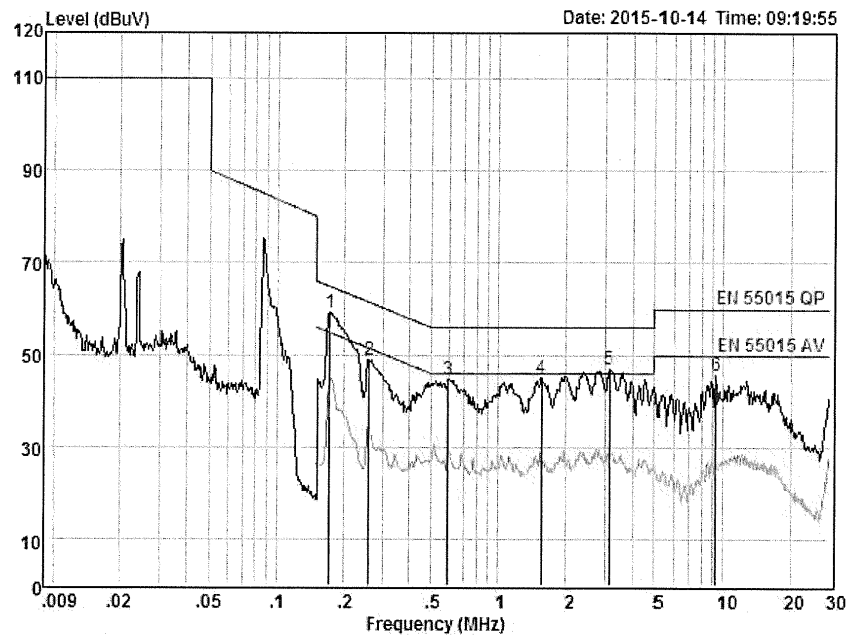
<L1 : Reading is below limit 1.

<L2 : Reading is below limit 2.



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Data: 4 File: E:\TEST REPORT\TuoBo\PL-30120-24-YY-CCC-XXXX.EM6 (8)
Date: 2015-10-14 Time: 09:19:55



Condition : EN 55015 QP POL: NEUTRAL Temp:25.7 °C Hum:51 %
EUT : LED Panel Light
Model No : FL-30120-24-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

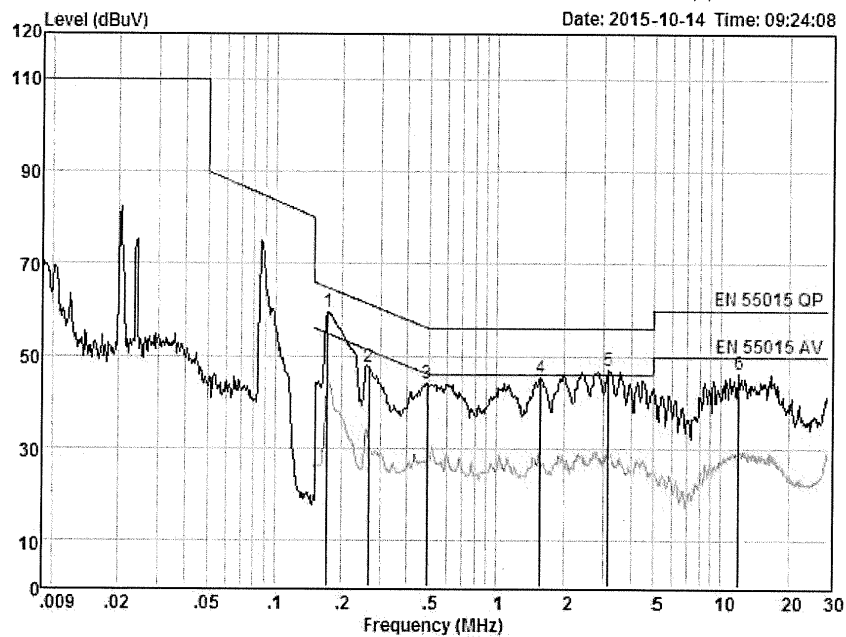
Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.171	49.53	0.03	-9.52	0.10	59.18	64.91	-5.73	Peak
2	0.259	39.35	0.03	-9.56	0.10	49.04	61.47	-12.43	Peak
3	0.596	34.99	0.03	-9.59	0.10	44.71	56.00	-11.29	Peak
4	1.553	35.24	0.05	-9.69	0.10	45.08	56.00	-10.92	Peak
5	3.146	37.02	0.07	-9.81	0.12	47.02	56.00	-8.98	Peak
6	9.253	35.29	0.16	-9.94	0.19	45.58	60.00	-14.42	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss



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Data: 8 File: E:\TEST REPORT\TuoBo\PL-30120-24-YY-CCC-XXXX.EM6 (8)
Date: 2015-10-14 Time: 09:24:08



Condition : EN 55015 QP POL: LINE Temp:25.7 °C Hum:51 %
EUT : LED Panel Light
Model No : PL-30120-24-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

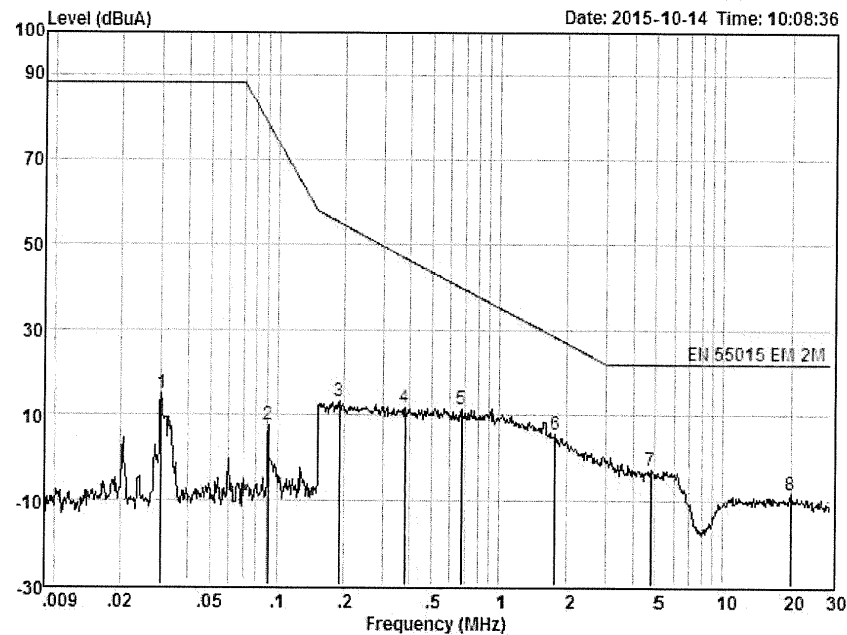
Item	Freq MHz	Read dBuV	LISN Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	0.171	49.79	0.03	-9.52	0.10	59.44	64.91	-5.47	Peak
2	0.265	37.96	0.03	-9.56	0.10	47.65	61.27	-13.62	Peak
3	0.491	34.48	0.03	-9.58	0.10	44.19	56.15	-11.96	Peak
4	1.566	35.39	0.05	-9.69	0.10	45.23	56.00	-10.77	Peak
5	3.172	36.93	0.07	-9.82	0.12	46.94	56.00	-9.06	Peak
6	11.996	35.93	0.26	-9.90	0.22	46.31	60.00	-13.69	Peak

Remarks: Level = Read + LISN Factor - Preamp Factor + Cable loss



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Data: 3 File: E:\TEST REPORT\TuoBo\PL-30120-24-YY-CCC-XXXX EM.EM6 (9)
Level (dBuA) Date: 2015-10-14 Time: 10:08:36



Condition : EN 55015 EM 2M POL: X Temp: 22 °C Hum: 56 %
EUT : LED Panel Light
Model No : PL-30120-24-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

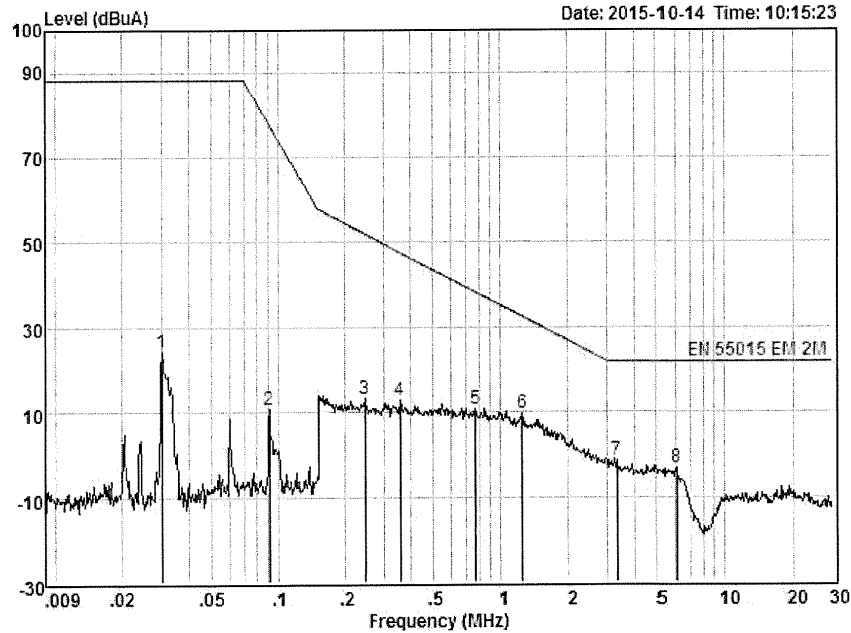
Item	Freq MHz	Read dBuA	AUX Factor dB	Cable Loss dB	Level dBuA	Limit dBuA	Margin dBuA	Remark
1	0.030	-1.32	16.35	0.08	15.11	88.02	-72.91	Peak
2	0.091	-12.42	20.14	0.08	7.80	77.76	-69.96	Peak
3	0.190	-6.56	19.72	0.08	13.24	55.18	-41.94	Peak
4	0.379	-8.46	20.27	0.08	11.89	46.89	-35.00	Peak
5	0.679	-9.10	20.60	0.08	11.58	39.87	-28.29	Peak
6	1.769	-14.34	19.64	0.10	5.40	28.37	-22.97	Peak
7	4.836	-24.11	21.08	0.16	-2.87	22.02	-24.89	Peak
8	19.998	-25.54	16.60	0.42	-8.52	22.02	-30.54	Peak

Remarks: Level = Read + AUX Factor + Cable loss



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Data: 6 File: E:\TEST REPORT\TuoBo\PL-30120-24-YY-CCC-XXXX EM\EM6 (9)
Date: 2015-10-14 Time: 10:15:23



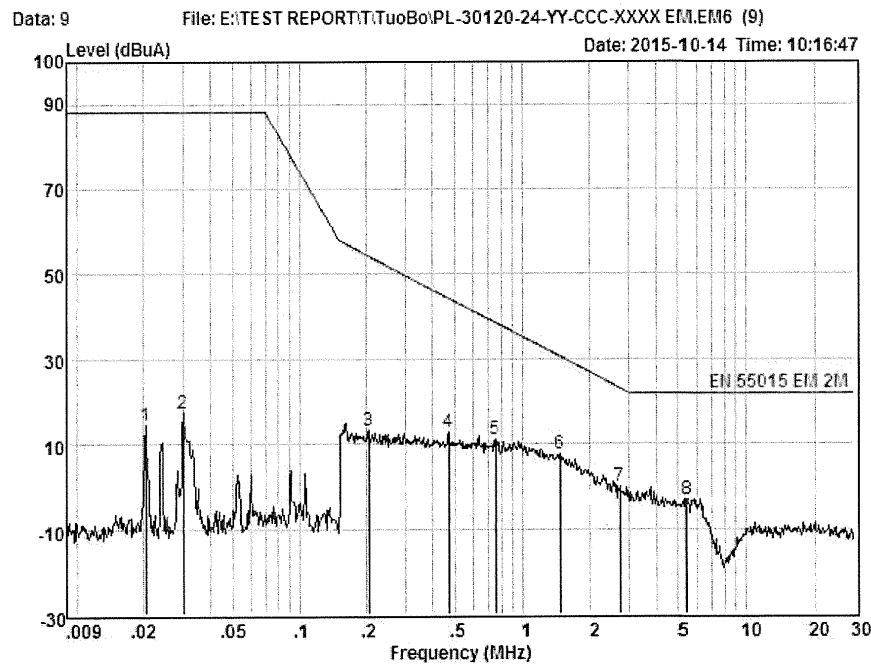
Condition : EN 55015 EM 2M POL: Y Temp: 22 °C Hum: 56 %
EUT : LED Panel Light
Model No : PL-30120-24-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

Item	Freq MHz	Read dBuA	AUX Factor dB	Cable Loss dB	Level dBuA	Limit dBuA	Margin dBuA	Remark
1	0.030	7.95	16.42	0.08	24.45	88.02	-63.57	Peak
2	0.091	-10.17	20.76	0.08	10.67	77.76	-67.09	Peak
3	0.246	-7.81	21.06	0.08	13.33	52.06	-38.73	Peak
4	0.355	-8.57	21.27	0.08	12.78	47.67	-34.89	Peak
5	0.773	-10.71	21.50	0.10	10.89	38.31	-27.42	Peak
6	1.238	-12.17	21.84	0.10	9.77	32.66	-22.89	Peak
7	3.330	-23.61	22.10	0.13	-1.38	22.02	-23.40	Peak
8	6.069	-26.17	22.96	0.18	-3.03	22.02	-25.05	Peak

Remarks: Level = Read + AUX Factor + Cable loss



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Condition : EN 55015 EM 2M FOL: 2 Temp:22 °C Hum:56 %
EUT : LED Panel Light
Model No : PL-30120-24-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer: Eric
Remark :

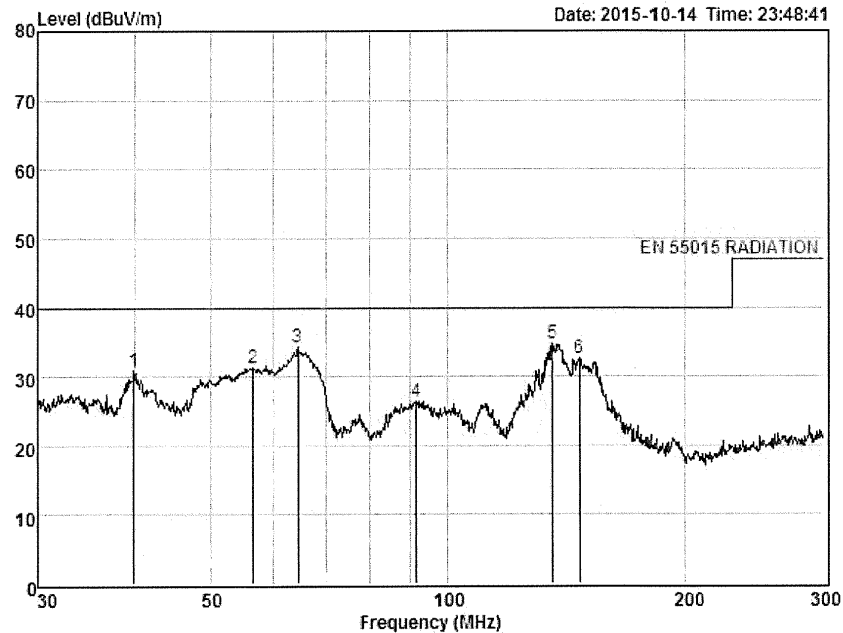
Item	Freq MHz	Read dBuA	AUX Factor dB	Cable Loss dB	Level dBuA	Limit dBuA	Margin dBuA	Remark
1	0.021	1.38	13.32	0.08	14.78	88.02	-73.24	Peak
2	0.030	0.71	16.65	0.08	17.44	88.02	-70.58	Peak
3	0.204	-8.28	21.31	0.08	13.11	54.30	-41.19	Peak
4	0.468	-8.88	21.66	0.08	12.86	44.36	-31.50	Peak
5	0.755	-10.73	21.80	0.08	11.15	38.61	-27.46	Peak
6	1.456	-14.29	21.87	0.10	7.68	30.71	-23.03	Peak
7	2.741	-22.21	22.02	0.12	-0.07	23.11	-23.18	Peak
8	5.417	-26.48	23.31	0.17	-3.00	22.02	-25.02	Peak

Remarks: Level = Read + AUX Factor + Cable loss



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Data: 1 File: D:\REPORT DATA\TuoBo\PL-30120-24-YY-CCC-XXXX.EM6 (2)
Date: 2015-10-14 Time: 23:48:41



Condition : EN 55015 RADIATION 3m POL: VERTICAL
EUT : LED panel light
Model No : PL-30120-24-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer : Eric
Remark :
Temp : 24.2°C
Hum : 54%

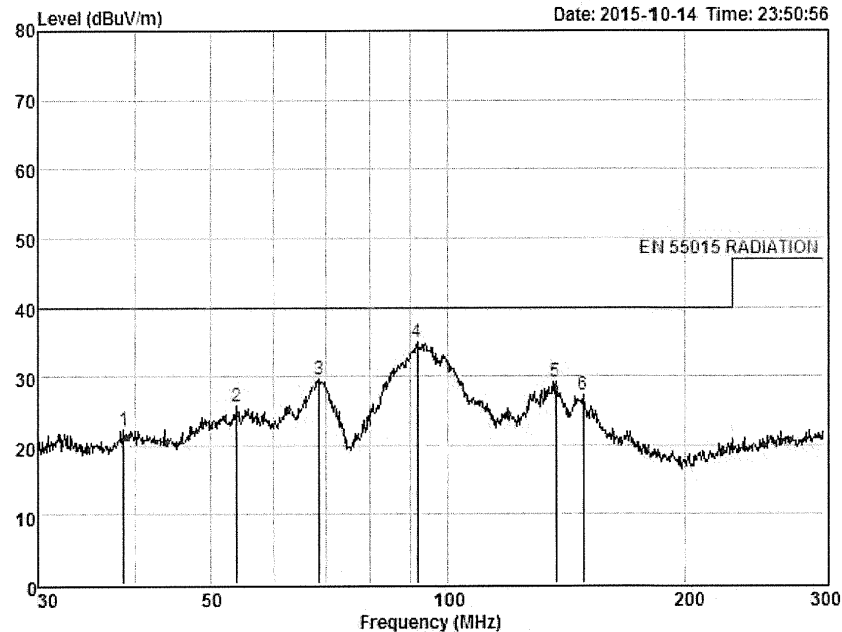
Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	39.82	47.44	14.07	30.85	0.17	30.83	40.00	-9.17	Peak
2	56.51	48.91	13.07	30.88	0.16	31.26	40.00	-8.74	Peak
3	64.43	52.57	11.98	30.52	0.24	34.27	40.00	-5.73	Peak
4	91.44	46.72	9.58	30.22	0.32	26.40	40.00	-13.60	Peak
5	135.87	50.56	13.22	29.41	0.45	34.82	40.00	-5.18	Peak
6	147.27	47.66	13.90	29.43	0.37	32.50	40.00	-7.50	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss



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Data: 2 File: D:\REPORT DATA\TuoBo\PL-30120-24-YY-CCC-XXXX.EM6 (2)
Date: 2015-10-14 Time: 23:50:56



Condition : EN 55015 RADIATION 3m POL: HORIZONTAL
EUT : LED panel light
Model No : PL-30120-24-YY-CCC-XXXX
Test Mode : ON
Power : AC 230V/50Hz
Test Engineer : Eric
Remark :
Temp : 24.2°C
Hum : 54%

Item	Freq MHz	Read Level dBuV	Antenna Factor dB	Preamp Factor dB	Cable Loss dB	Level dBuV	Limit dBuV	Margin dBuV	Remark
1	38.65	39.32	13.73	30.84	0.13	22.34	40.00	-17.66	Peak
2	53.84	43.24	13.22	30.87	0.21	25.80	40.00	-14.20	Peak
3	68.73	48.65	10.82	30.26	0.30	29.51	40.00	-10.49	Peak
4	81.65	55.32	9.58	30.22	0.30	34.98	40.00	-5.02	Peak
5	137.44	44.99	13.22	29.36	0.41	29.26	40.00	-10.74	Peak
6	149.32	42.32	14.03	29.45	0.35	27.25	40.00	-12.75	Peak

Remark: Level = Read Level + Antenna Factor - Preamp Factor + Cable Loss

SHENZHEN ALPHA PRODUCT TESTING CO., LTD.

Electrostatic Discharge Test Results

Applicant	:	Top Optoelectronic Co., Ltd.	Test Date	:	Oct 30, 2015
EUT	:	LED panel light	Temperature	:	24°C
M/N	:	PL-6060-48-YY-CCC-XXXX PL-6060-60-YY-CCC-XXXX PL-30120-24-YY-CCC-XXXX	Humidity	:	54%
Test Voltage	:	AC 230V/50Hz	Test Mode	:	ON
Test Engineer	:	Eric Huang	Pressure	:	101.3KPa
Required Performance	:	B	Actual Performance	:	A
Air Discharge: $\pm 2\text{kV}$ $\pm 4\text{kV}$ $\pm 8\text{kV}$ # For Air Discharge each Point Positive 25 times and negative 25 times discharge.					
Contact Discharge: $\pm 2\text{kV}$ $\pm 4\text{kV}$ # For Contact Discharge each point positive 25 times and negative 25 times discharge					
For the time interval between successive single discharges an initial value of one second.					
Discharge Voltage (kV)	Type of discharge	Dischargeable Points	Performance		Result (Pass/Fail)
			Required	Observation	
± 2	Contact	1	B	A	Pass
± 4	Contact	1	B	A	Pass
± 2	Air	2	B	A	Pass
± 4	Air	2	B	A	Pass
± 8	Air	2	B	A	Pass
± 2	HCP	3	B	A	Pass
± 2	VCP	4	B	A	Pass
± 4	HCP	3	B	A	Pass
± 4	VCP	4	B	A	Pass
Discharge Points Description					
<u>1</u>	Metal		<u>5</u>		
<u>2</u>	Slots		<u>6</u>		
<u>3</u>	HCP		<u>7</u>		
<u>4</u>	VCP		<u>8</u>		
Test Equipment: ESD Tester (PESD1610)					
Remark: Class A: No obvious change during and after the test process.					

Discharge was considered on Contact and Air and Horizontal Coupling Plane (HCP) and Vertical Coupling Plane (VCP).

SHENZHEN ALPHA PRODUCT TESTING CO., LTD.

RF Field Strength Susceptibility Test Results

Applicant	:	Top Optoelectronic Co., Ltd.	Test Date	:	Oct 30, 2015
EUT	:	LED panel light	Temperature	:	24°C
M/N	:	PL-30120-24-YY-CCC-XXXX	Humidity	:	56%
Test Voltage	:	AC 230V/50Hz	Pressure	:	101.3KPa
Test Engineer	:	Eric Huang	Test Mode	:	ON
Frequency Range	:	80 MHz -1000MHz	Field Strength	:	3V/m
Required Performance	:	A	Actual Performance	:	A
Modulation: ☒ AM ☐ Pulse ☐ none 1 kHz 80%					
Frequency Rang :80 MHz -1000MHz					
Steps	1%				
	Horizontal		Vertical		Result
	Required	Observation	Required	Observation	(Pass / Fail)
Front	A	A	A	A	Pass
Right	A	A	A	A	Pass
Rear	A	A	A	A	Pass
Left	A	A	A	A	Pass
Test Equipment : 1. Signal Generator 2. Power Amplifier 3. Power Antenna 4. Field Monitor					
Remark: 1 Class A: No obvious change in the test before and after the process. 2 Test in Waltek Services (ShenZhen) Co., Ltd.					

SHENZHEN ALPHA PRODUCT TESTING CO., LTD.

Electrical Fast Transient/Burst Test Results

Applicant	:	Top Optoelectronic Co., Ltd.	Test Date	:	Oct 28, 2015
EUT	:	LED panel light	Temperature	:	24°C
M/N	:	PL-6060-48-YY-CCC-XXXX PL-6060-60-YY-CCC-XXXX PL-30120-24-YY-CCC-XXXX	Humidity	:	54%
Test Voltage	:	AC 230V/50Hz	Test Mode	:	ON
Test Engineer	:	Eric Huang	Pressure	:	101.3Kpa
Required Performance	:	B	Actual Performance	:	A
Repetition Frequency : <u>5 kHz</u> Burst Duration : <u>15ms</u> Burst Period: <u>300ms</u>					
Inject Time(s): <u>120s</u> Inject Method: <u>Direct</u>					
Inject Line: ☒ AC Mains ☐ DC Supply ☐ Signal					
Line	Test Voltage	Performance			Result (Pass/Fail)
		Required	Observation(+)	Observation(-)	
L	1.0kV	B	A	A	Pass
N	1.0kV	B	A	A	Pass
L N	1.0kV	B	A	A	Pass
Test Equipment : Burst Tester (EFT-4001G)					
Remark: Class A: No obvious change during and after the test process.					

SHENZHEN ALPHA PRODUCT TESTING CO., LTD.

Surge Immunity Test Results

Applicant	:	Top Optoelectronic Co., Ltd.	Test Date	:	Oct 28, 2015						
EUT	:	LED panel light	Temperature	:	24°C						
M/N	:	PL-6060-48-YY-CCC-XXXX PL-6060-60-YY-CCC-XXXX PL-30120-24-YY-CCC-XXXX	Humidity	:	54%						
Power Supply	:	AC 230V/50Hz	Test Mode	:	ON						
Test Engineer	:	Eric Huang	Pressure	:	101.3KPa						
Required Performance	:	C	Actual Performance	:	B						
No.of pluse: 5 Times/Phase Angle Interval:60 Seconds											
Line : ☒ AC Mains ☐ DC Supply ☐ Signal											
Location	Volt	500V			1kV			2kV			Result
	Phase	Performance			Performance			Performance			(Pass/Fail)
		Required	+	-	Required	+	-	Required	+	-	
L-N	0°	/	/	/	/	/	/	/	/	/	
	90°	C	B	/	C	B	/	/	/	Pass	
	180°	/	/	/	/	/	/	/	/	/	
	270°	C	/	B	C	/	B	/	/	Pass	
Signal Line	/	/	/	/	/	/	/	/	/	/	
Test Equipment : Surge Generator (SG-5006G)											
Remark: For model PL-30120-24-YY-CCC-XXXX, only applied to level 500V. Class B: During testing, the lightness would flicker, and it could restore normal automatically after testing.											

SHENZHEN ALPHA PRODUCT TESTING CO., LTD.

Injected Currents Susceptibility Test Results

Applicant	: Top Optoelectronic Co., Ltd.	Test Date	: Oct 28, 2015
EUT	: LED panel light	Temperature	: 24°C
M/N	: PL-6060-48-YY-CCC-XXXX PL-6060-60-YY-CCC-XXXX PL-30120-24-YY-CCC-XXXX	Humidity	: 54%
Power Supply	: AC 230V/50Hz	Test Mode	: ON
Test Engineer	: Eric Huang	Pressure	: 101.3KPa
Required Performance	: A	Actual Performance	: A

Frequency Range (MHz)	Injected Position	Voltage Level (e.m.f.)	Required	Observation	Result (Pass / Fail)
0.15 ~ 80	AC Mains	3V	A	A	PASS

Step : 1 % Dwell Time : 1 Sec

DIRECT CDN Type : ☒ M2 ☐ M3 ☐ DC Line

Modulation Signal: 1kHz 80% AM

Remark: Class A: No obvious change during and after the test process.

SHENZHEN ALPHA PRODUCT TESTING CO., LTD.

Voltage Dips and Interruptions Test Results

Applicant	:	Top Optoelectronic Co., Ltd.		Test Date	:	Oct 28, 2015	
EUT	:	LED panel light		Temperature	:	24℃	
M/N	:	PL-6060-48-YY-CCC-XXXX PL-6060-60-YY-CCC-XXXX PL-30120-24-YY-CCC-XXXX		Humidity	:	54%	
Power Supply	:	AC 230V/50Hz		Test Mode	:	ON	
Test Engineer	:	Eric Huang		Pressure	:	101.3KPa	
Test Level % U _T	Voltage Dips & Short Interruptions % U _T	Duration (in period)	Phase Angle	Required	Observation	Result	
						(Pass / Fail)	
0	100	0.5P	0° -360°	B	A	PASS	
Remark: Class A: No obvious change in the test before and after the process.							
70	30	10P	0° -360°	C	B	PASS	
	Class B: During testing, the lightness would flicker, and it could restore normal automatically after testing.						
Note: U _T is the rated voltage for the equipment.			Test Equipment : Main Interference Simulator: (VDG-1105G)				

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_{cisp})
Conducted Emission	Level accuracy (9kHz to 150kHz) (150kHz to 30MHz)	± 2.50 dB ± 2.50 dB	± 4.0 dB ± 3.6 dB
Power disturbance	Level accuracy (30MHz to 300MHz)	± 3.54 dB	± 4.5 dB
Electromagnetic Radiated Emission (3-loop)	Level accuracy (9kHz to 30MHz)	± 4.83 dB	N/A
Radiated Emission	Level accuracy (9kHz to 30MHz)	± 3.74 dB	N/A
Radiated Emission	Level accuracy (30MHz to 1000MHz)	± 3.04 dB	± 5.2 dB
Radiated Emission	Level accuracy (above 1000MHz)	± 3.84 dB	N/A
Mains Harmonic	Voltage	$\pm 6\%$	N/A
Voltage Fluctuations & Flicker	Voltage	$\pm 1.8\%$	N/A

As U_{lab} in all applicable tests listed above are less than U_{cisp} according to CISPR 16-4-2:2003,

- 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.