



Testing Lab.

Shenzhen LCS Compliance Testing Laboratory Ltd.



TESTING
NVLAP LAB CODE 600112-0

Report No.:LCS171221034BS

TEST REPORT of IES LM-79-08

Approved Method for Electrical and Photometric Measurements of Solid-State Lighting Products

Client..... : Shenzhen Sinoco Lighting Technologies Co.,Ltd.

Address..... : G building, Shasi, High-Tec, Industrial park, Shajing Town, Bao' an District,
Shenzhen, Guangdong, China

Brand Name..... : Sinoco

Testing laboratory..... : Shenzhen LCS Compliance Testing Laboratory Ltd.

Address..... : B Area, 2F, Building B, Zhongyu Green Wenge Road, Heshuikou, Gongming
Street, Guangming New District, Shenzhen, Guangdong Prov .518000 China

Product description .. : LED street light

Models..... : ST-52-30W-3000K

Rating..... : 100-240Vac, 50/60Hz, 30W, 3000K

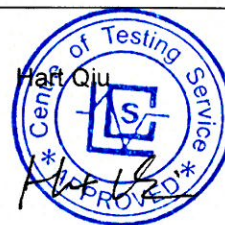
Test by: William Lian

Signature:

William

Reviewed by:

Signature:



Test date: January 04, 2018

Reviewed date: January 12, 2018

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1. Test Method

Test Item.....	: Integrating Sphere Test
Ambient Condition	: 25.1℃
Number of hours operated prior to Measurement	: 0h
Stabilization time	: 0.5h
Orientation(burning position) of SSL product during test	: down
Test Method	: The sample was tested according to the IES LM-79-2008. The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. The sample was operated at rated voltage and was stabilized before measurement. Chromaticity coordinates, correlated color temperature and color rendering index were calculated from the spectral radiant flux measurements taken at 1 nm intervals over the range of 380 to 780 nm.
Test Item.....	: Goniophotometer Test
Ambient Condition.....	: 25.1℃
Total operated time of the product for measurements including stabilization..... (h):	: 2.5h
Correction factors applied.....	: Intensity distribution
Orientation(burning position) of SSL product during test	: down
Test Method.....	: The sample was tested according to the IES LM-79-2008. Photometric paramters were measured using a type C goniophotometer and software. The sample reference plane was located at the center of the sample goniometer at a test distance of 26m from the detectors. The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, Luminous efficacy, zonal flux were calculated from the software taken at 1° vertical intervals and 22.5° horizontal intervals.



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2.Product Information

Product description.....:	LED street light
Model Number.....:	ST-52-30W-3000K
Rated Inputs.....:	100-240VAC, 50/60Hz
Rated Power.....:	30W
Declared CCT.....:	3000K
LED Manufacturer.....:	N/A
LED Model.....:	N/A
LED Package, Array or Module.....:	N/A
Forward current of the LED chip.....:	N/A
Date of Receipt Samples.....:	January 03, 2018
Quantity of Receipt Samples.....:	1 unit

3.Test equipment list:

Manufacturer	Description	Equipment ID	Model	Calibration Date	Calibration Due Date
EVERFINE	Full-field Speed Goniophotometer	SLCS-S-112	GO-R5000	2017/08/15	2018/08/14
EVERFINE	Digital Power Meter	SLCS-S-103	PF2010	2017/08/15	2018/08/14
EVERFINE	AC Testing Power Source	SLCS-S-115	DPS1060	2017/08/15	2018/08/14
EVERFINE	Total Spectral Radiant Flux Standard Lamp	SLCS-S-143	D908S	2017/08/14	2018/08/13
SENSING	2 Meter Integrating Sphere	SLCS-S-038	SPR-3000	2017/08/15	2018/08/14
YOKOGAWA	Digital Power Meter	SLCS-S-058	WT310	2017/08/15	2018/08/14
ALL POWER ELECTRONIC	AC Testing Power Source	SLCS-S-111	APW-105N	2017/08/15	2018/08/14
SENSING	Standard Lamp	SLCS-S-118	S11010017	2017/08/14	2018/08/13

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4. Integrating Sphere Test Results:

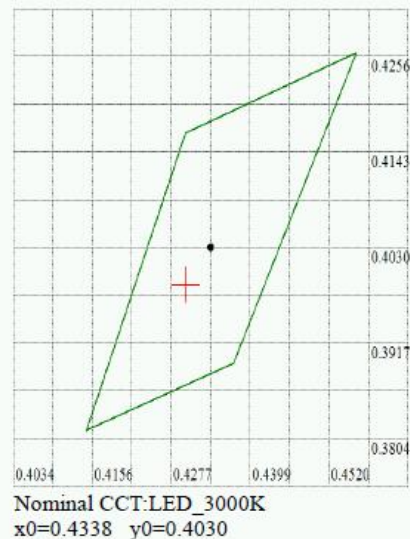
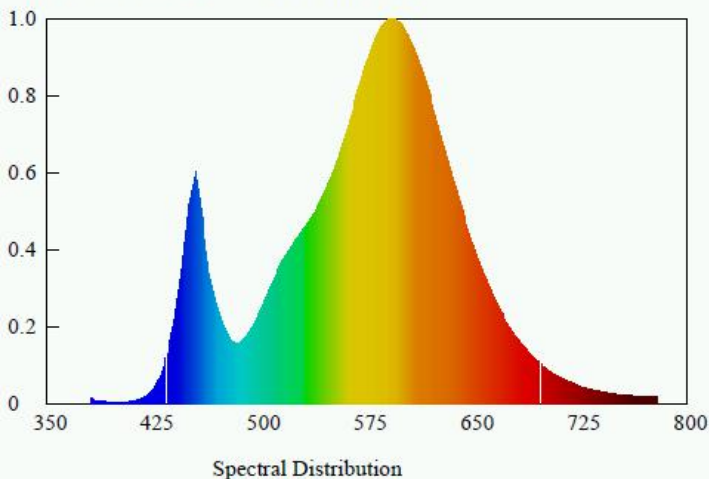
4.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	220.0	50.0	0.151	0.907	30.2

Test type	CCT (K)	CRI	Luminous flux (lm)	Luminous efficacy(lm/w)
Output	3076	72.6	3643.62	120.6

4.2 Spectrum

Spectroradiometric Parameters



Chromaticity Coordinates: x=0.4299 y=0.3986 u'=0.2484 v'=0.5182

Correlated Color Temperature: 3076 K

Colour Fidelity Index: Rf=73

Luminous Flux: 3643.62 lm

Chromaticity Difference: -0.0012Duv

Color Ratio: Kr=44.9% Kg=48.7% Kb=6.4%

Bandwidth: 103.1nm

Photosynthetically Active Radiation(PAR): 9.22W

Rendering Index: Ra=72.6

R1=69 R2=86 R3=93 R4=67 R5=69 R6=80 R7=75 R8=41

R9=-35 R10=68 R11=62 R12=56 R13=74 R14=97 R15=61 Re=64

Dominant Wavelength: 581.0 nm(E)

Gamut Index: Rg=91

Purity: 0.4899

Peak Wavelength: 595.0 nm

Radiant Flux: 9.435 W

Photosynthetic Photon Flux(PPF):44.36μmol/s

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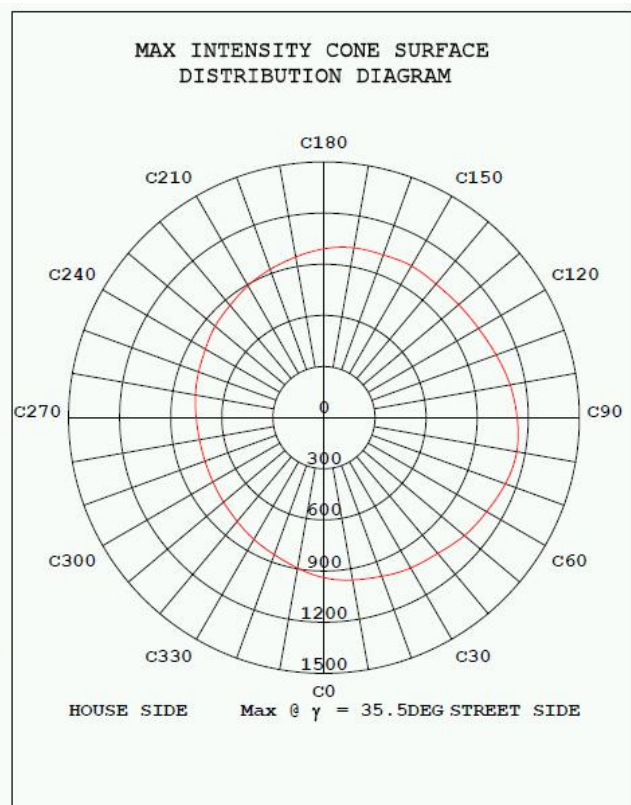
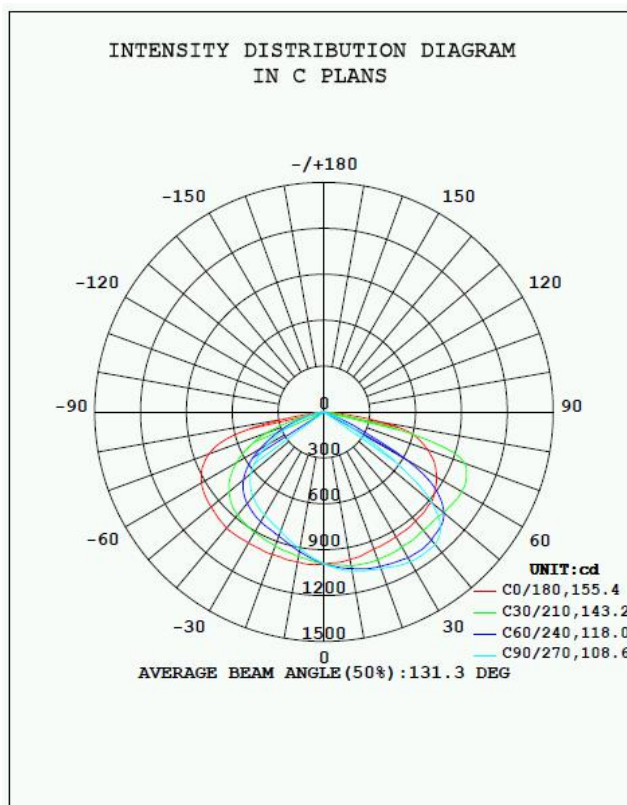
5. Goniophotometer Test results

5.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	220.1	50.01	0.1514	0.9058	30.17

Test type	Total Flux (lm)	Luminous efficacy(lm/w)	ZL (0~90°)	ZL (80~90°)
Output	3627.1	120.21	99.90%	0.70%

5.2 Luminous Intensity Distribution Diagram and C0 Plane Isolux Diagram (Unit : lx)





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5.3 Zonal Flux Diagram

y	C0	C45	C90	C135	C180	C225	C270	C315	y	Φ zone	Φ total	lum, lamp
10	979.1	1031	1055	1034	995.0	940.8	909.5	919.2	0- 10	94.16	94.16	2.6,2.6
20	954.1	1053	1090	1043	991.2	896.5	830.1	860.8	10- 20	275.6	369.8	10.2,10.2
30	942.1	1056	1129	1042	988.4	865.3	776.2	809.4	20- 30	442.8	812.6	22.4,22.4
40	929.9	1050	1131	1018	991.1	829.9	721.4	761.9	30- 40	590.6	1403	38.7,38.7
50	915.9	1027	921.1	997.9	965.0	745.9	624.7	689.2	40- 50	697.7	2101	57.9,57.9
60	852.4	941.7	235.9	883.0	925.7	565.5	420.2	554.0	50- 60	693.3	2794	77,77
70	722.7	405.4	50.87	286.6	801.2	292.6	198.5	316.7	60- 70	535.2	3329	91.8,91.8
80	379.3	12.55	0.4020	5.069	257.3	47.40	52.08	56.18	70- 80	268.9	3598	99.2,99.2
90	0.5568	0.0789	0	0	0.3977	0	0	0	80- 90	25.58	3624	99.9,99.9
100	0.3977	0	0	0	0.6406	0.1979	0	0.0813	90-100	0.1643	3624	99.9,99.9
110	0.3977	0	0	0	0.7955	0.7520	0	0.6351	100-110	0.2703	3624	99.9,99.9
120	0.3977	0	0	0	0.7955	0.7937	0.5567	1.033	110-120	0.3765	3625	99.9,99.9
130	0.3977	0.0788	0.1591	0.0796	0.7955	0.7937	0.9544	1.074	120-130	0.4391	3625	99.9,99.9
140	0.4773	0.1978	0.2386	0.1194	0.7955	0.8353	1.193	1.114	130-140	0.4470	3626	100,100
150	0.9546	0.5952	0.5567	0.3980	1.034	1.153	1.432	1.353	140-150	0.4959	3626	100,100
160	1.114	0.8710	0.7158	0.5970	1.352	1.389	1.432	1.353	150-160	0.4672	3627	100,100
170	1.352	1.349	1.193	1.309	1.434	1.389	1.432	1.353	160-170	0.3427	3627	100,100
180	1.352	1.349	1.432	1.353	1.432	1.349	1.352	1.353	170-180	0.1294	3627	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



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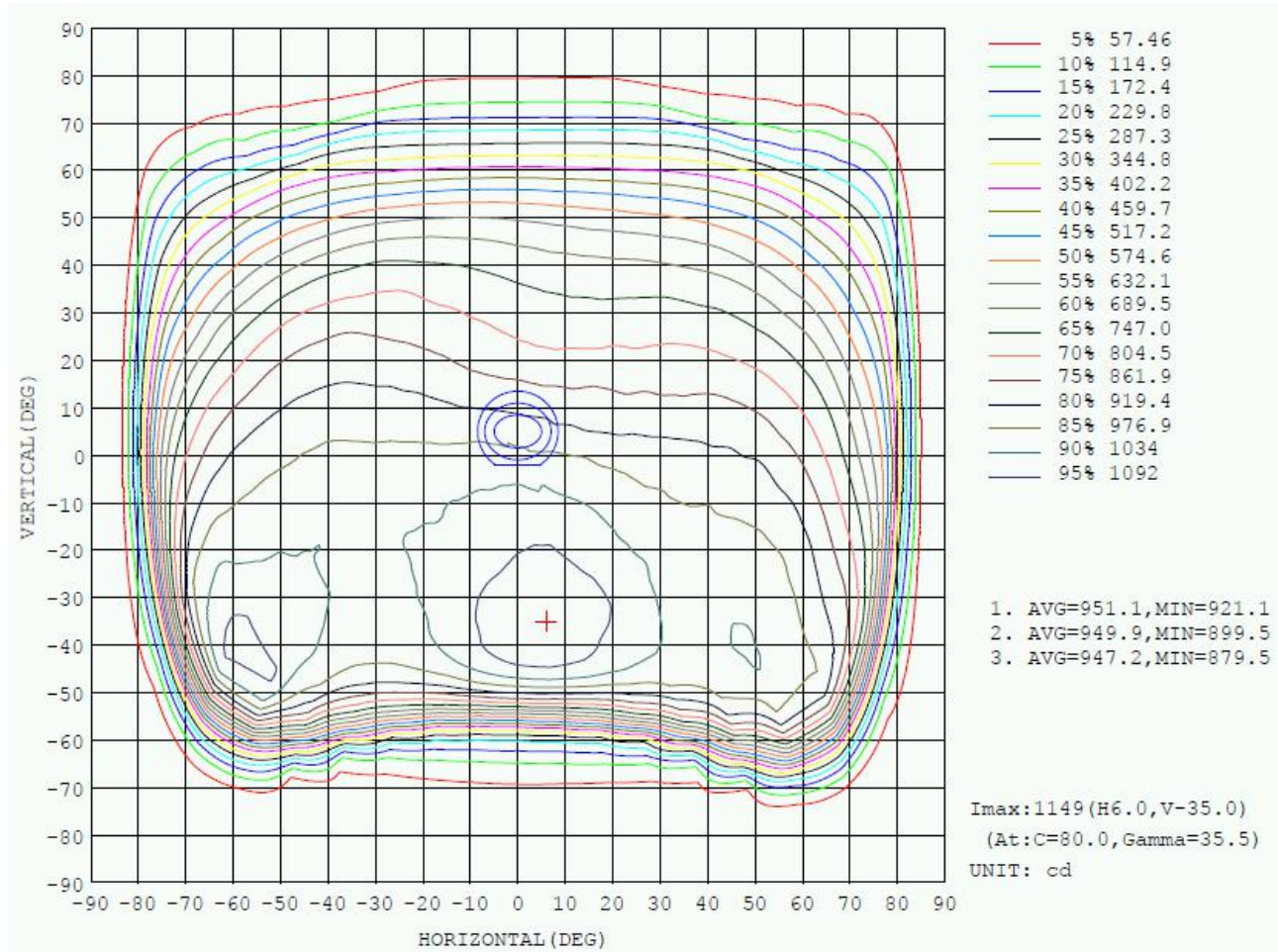
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5.4 Isocandela Diagram





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5.5 Luminous Distribution Intensity Data

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
0	995	994	994	993	993	993	992	992	992	991	991	990	990	991	989	989	989	989	995
5	988	994	1000	1003	1010	1018	1017	1022	1025	1028	1028	1024	1022	1014	1019	1007	999	997	1000
10	979	989	1007	1022	1021	1042	1039	1047	1050	1055	1049	1049	1044	1036	1032	1021	1007	1002	995
15	970	991	1006	1025	1037	1059	1060	1070	1074	1073	1070	1064	1057	1046	1036	1031	1012	1002	994
20	954	983	1004	1028	1041	1065	1074	1092	1094	1090	1078	1070	1060	1049	1037	1028	1013	1006	991
25	948	974	1004	1026	1040	1065	1086	1107	1114	1112	1090	1074	1061	1050	1042	1028	1011	1007	988
30	942	971	997	1020	1040	1072	1100	1129	1142	1129	1107	1080	1059	1047	1037	1031	1013	1011	988
35	939	967	991	1019	1040	1076	1103	1135	1150	1135	1111	1077	1050	1033	1024	1029	1015	1012	990
40	930	971	993	1011	1028	1071	1093	1119	1134	1131	1099	1064	1034	1018	1018	1025	1025	1015	991
45	927	965	1003	1010	1023	1048	1072	1091	1093	1079	1055	1031	1013	1002	1012	1031	1034	1018	979
50	916	967	1008	1022	1023	1032	1023	990	947	921	921	930	960	986	1010	1042	1037	1015	965
55	886	960	1014	1034	1019	991	901	754	631	582	604	696	824	931	1011	1059	1051	1010	950
60	852	943	1008	1040	1003	880	618	354	259	236	245	312	527	786	980	1074	1070	1011	926
65	799	907	991	1028	936	578	230	149	120	111	111	128	183	450	864	1094	1108	1023	881
70	723	868	982	978	659	152	73.7	58.4	52.5	50.9	49.9	51.9	56.8	86.6	487	960	1085	990	801
75	622	789	884	691	173	43.7	25.4	17.7	15.3	14.4	14.3	15.6	19.3	28.8	65.7	415	702	730	638
80	379	313	315	139	19.6	5.46	1.80	0.89	0.56	0.40	0.33	0.48	0.89	2.33	7.81	52.0	106	121	257
85	52.4	11.6	5.54	2.09	0.64	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.24	0.95	2.14	3.05	9.36
90	0.56	0.64	0.48	0.32	0.16	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.32	0.64	0.40
95	0.40	0.32	0.32	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.32	0.56
100	0.40	0.32	0.24	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.24	0.64
105	0.40	0.32	0.24	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.24	0.80
110	0.40	0.32	0.24	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.08	0.24	0.80
115	0.40	0.32	0.24	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.24	0.80
120	0.40	0.32	0.24	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.24	0.80
125	0.40	0.32	0.32	0.08	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.16	0.16	0.24	0.80
130	0.40	0.32	0.32	0.08	0.08	0.08	0.08	0.08	0.16	0.16	0.16	0.00	0.08	0.00	0.16	0.08	0.16	0.24	0.80
135	0.40	0.32	0.32	0.08	0.08	0.08	0.08	0.08	0.16	0.16	0.16	0.08	0.08	0.00	0.16	0.08	0.16	0.24	0.80
140	0.48	0.40	0.39	0.24	0.24	0.16	0.39	0.24	0.16	0.24	0.16	0.08	0.23	0.08	0.16	0.16	0.39	0.40	0.80
145	0.80	0.64	0.56	0.48	0.40	0.48	0.55	0.56	0.32	0.48	0.32	0.39	0.40	0.32	0.24	0.24	0.40	0.56	0.95
150	0.95	0.72	0.64	0.63	0.63	0.56	0.63	0.64	0.55	0.56	0.56	0.40	0.47	0.40	0.40	0.40	0.40	0.56	1.03
155	1.03	0.80	0.80	0.79	0.71	0.87	0.71	0.87	0.64	0.64	0.56	0.56	0.48	0.48	0.64	0.63	0.55	0.71	1.27
160	1.11	0.95	1.03	0.95	0.71	1.03	1.18	0.87	0.95	0.72	0.87	0.71	0.72	0.56	0.64	0.56	0.55	0.72	1.35
165	1.27	1.19	1.20	1.11	1.18	1.27	1.19	1.03	1.04	1.11	1.03	0.80	1.03	0.79	0.88	1.03	0.95	1.11	1.35
170	1.35	1.35	1.28	1.27	1.35	1.35	1.27	1.27	1.35	1.19	1.27	1.19	1.27	1.27	1.35	1.19	1.10	1.19	1.43
175	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.43	1.27	1.35	1.35	1.35	1.43	1.27	1.27	1.51
180	1.35	1.35	1.35	1.35	1.35	1.35	1.35	1.43	1.35	1.43	1.43	1.35	1.35	1.35	1.35	1.35	1.27	1.43	1.43



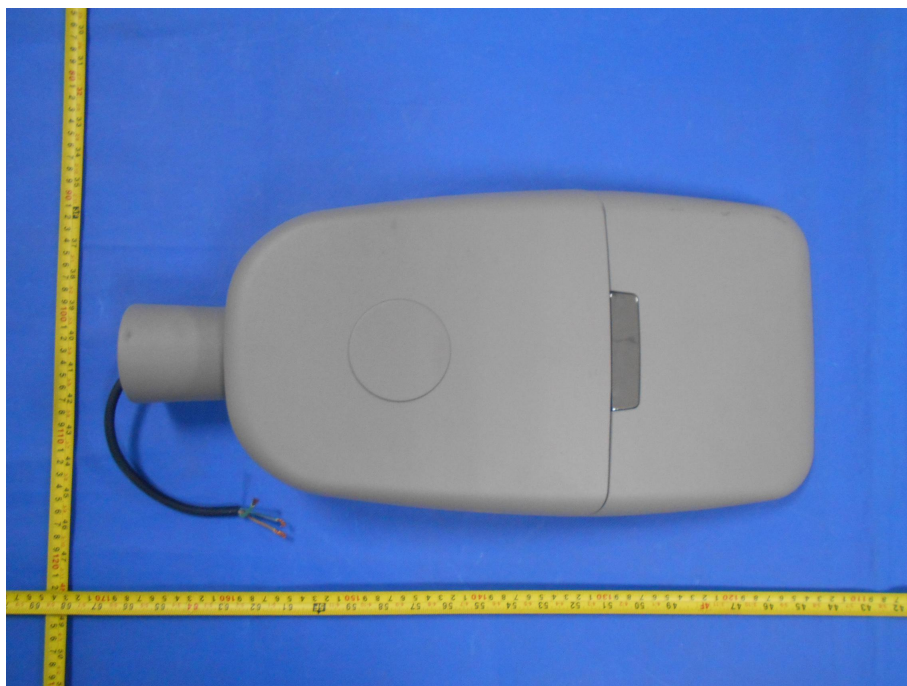
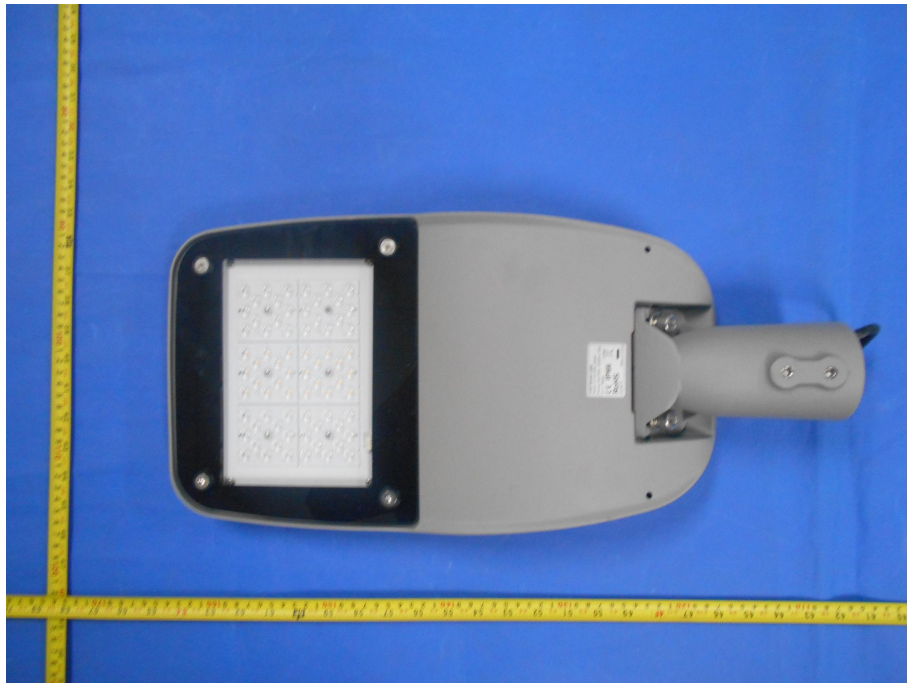
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6. Photo of sample:



----- End of test report-----

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