



Testing Lab.

Shenzhen Southern LCS Compliance Testing Laboratory Ltd.



TESTING
NVLAP LAB CODE 600112-0

Report No.: LCS200901056BS

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,Baoan District,Shenzhen,
Guangdong,China

Brand Name..... : **SINOCO**[®]

Testing laboratory..... : Shenzhen Southern 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-52-100W-T3-3000K

Rating..... : AC220V, 50/60Hz, 100W, 3000K

Date of Test..... : September 02, 2020

Date of Issue..... : September 08, 2020

Test by:

William Lian

William Lian/ Project Engineer

Check by:

Ian Luo

Ian Luo/ Director

Approved by:



Jesse Liu/ Manager

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

Tel: +(86) 0755-29871520 | Fax: +(86) 0755-2987 1521 | E-mail: webmaster@lcs-cert.com | [http:// www.lcs-cert.com](http://www.lcs-cert.com)

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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-52-100W-T3-3000K
Rated Inputs.....:	AC220V, 50/60Hz
Rated Power.....:	100W
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.....:	September 02, 2020
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	2020/07/02	2021/07/01
EVERFINE	Digital Power Meter	SLCS-S-103	PF2010	2020/06/24	2021/06/23
EVERFINE	AC Testing Power Source	SLCS-S-115	DPS1060	2020/06/24	2021/06/23
EVERFINE	Total Spectral Radiant Flux Standard Lamp	SLCS-S-143	D908S	2020/07/02	2021/07/01
SENSING	2 Meter Integrating Sphere	SLCS-S-038	SPR-3000	2020/07/02	2021/07/01
YOKOGAWA	Digital Power Meter	SLCS-S-058	WT310	2020/06/24	2021/06/23
ALL POWER ELECTRONIC	AC Testing Power Source	SLCS-S-111	APW-105N	2020/06/24	2021/06/23
SENSING	Standard Lamp	SLCS-S-118	S11010017	2020/07/02	2021/07/01



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4. Integrating Sphere Test Results:

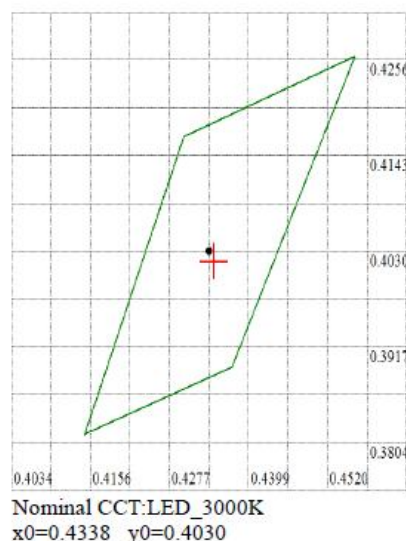
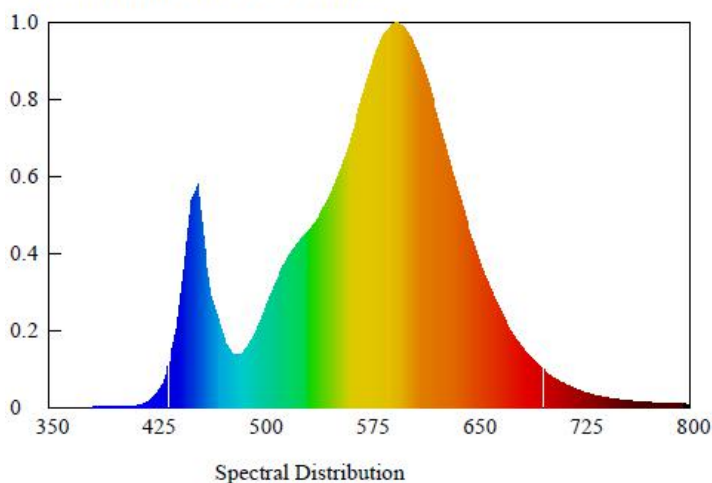
4.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	220.10	50.0	0.4623	0.9840	100.12

Test type	CCT (K)	CRI	Duv	Luminous flux (lm)	Luminous efficacy(lm/W)
Output	3023	72.8	-0.00057	15663.77	156.45

4.2 Spectrum

Spectroradiometric Parameters



Chromaticity Coordinates: x=0.4345 y=0.4018 u'=0.25 v'=0.5201

Correlated Color Temperature: 3023 K

Colour Fidelity Index: Rf=74

Luminous Flux: 15663.77 lm

Chromaticity Difference: -0.00057Duv

Color Ratio: Kr=45.5% Kg=48.2% Kb=6.3%

Bandwidth: 101.6nm

Photosynthetically Active Radiation(PAR): 42.37W

Rendering Index: Ra=72.8

R1=69 R2=85 R3=94 R4=68 R5=69 R6=81 R7=75 R8=41

R9=-36 R10=68 R11=64 R12=56 R13=74 R14=97 R15=60 Re=64

Dominant Wavelength: 581.0 nm(E)

Gamut Index: Rg=92

Purity: 0.5135

Peak Wavelength: 595.0 nm

Radiant Flux: 43.274 W

Photosynthetic Photon Flux(PPF):204.20μmol/s



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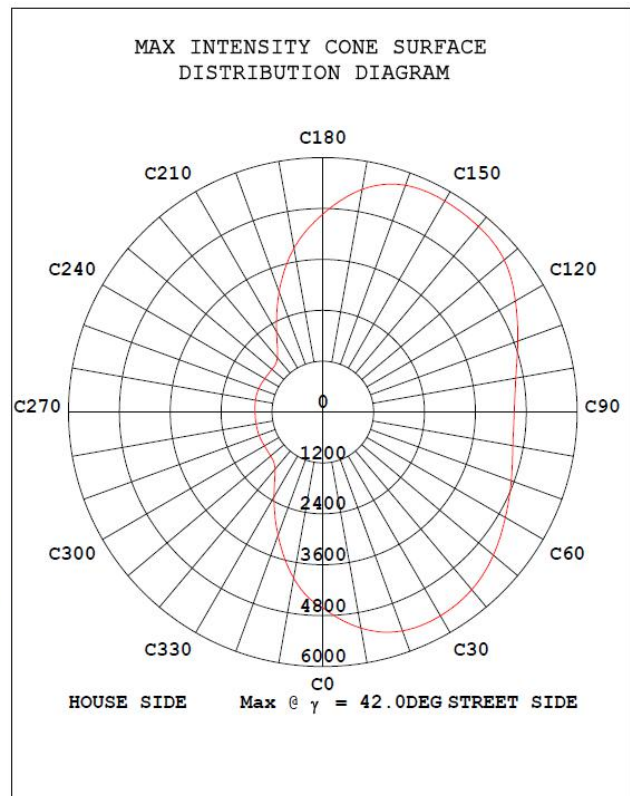
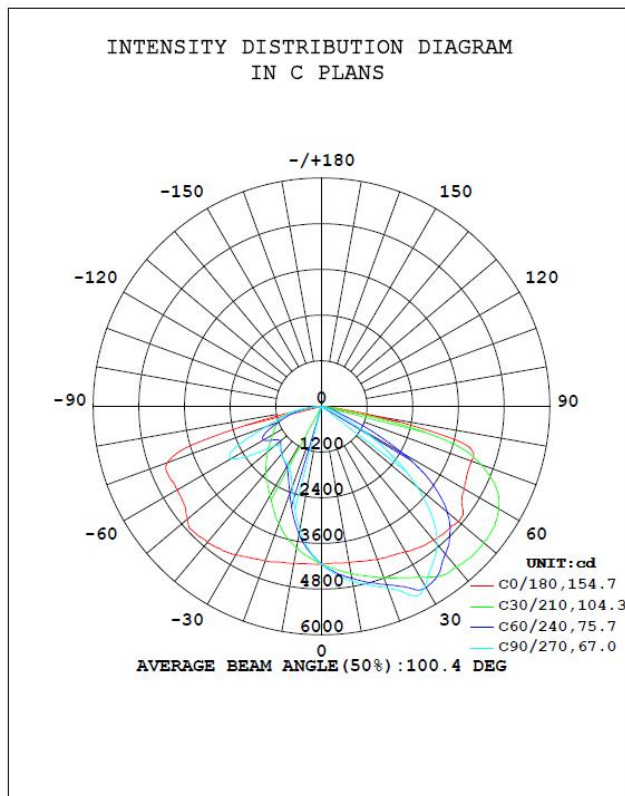
5. Goniophotometer Test results

5.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	220.0	50.00	0.4623	0.9838	100.1

Test type	Total Flux (lm)	Luminous efficacy(lm/W)	ZL (0~90°)	ZL (80~90°)
Output	15670.2	156.61	100%	1.2%

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





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5.3 Zonal Flux Diagram

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	4168	4534	4664	4583	4186	3585	3291	3597	0- 10	392.1	392.1	2.5,2.5
20	4276	4884	5079	5011	4322	2789	2255	2863	10- 20	1132	1524	9.73,9.73
30	4412	5372	5450	5584	4498	2094	1780	2193	20- 30	1818	3342	21.3,21.3
40	4580	5377	4713	5662	4661	1679	1643	1752	30- 40	2418	5760	36.8,36.8
50	4691	5137	3275	5454	4605	1429	1627	1450	40- 50	2803	8564	54.6,54.6
60	4334	4134	1229	4474	4387	1275	2731	1253	50- 60	2891	11455	73.1,73.1
70	4196	1920	266.8	2077	4312	1001	1554	994.7	60- 70	2540	13995	89.3,89.3
80	1405	157.8	13.12	85.52	604.8	626.9	639.2	664.0	70- 80	1491	15487	98.8,98.8
90	0	0	0	0	0	0	0	0	80- 90	183.4	15670	100,100
100	0	0	0	0	0	0	0	0	90-100	0	15670	100,100
110	0	0	0	0	0	0	0	0	100-110	0	15670	100,100
120	0	0	0	0	0	0	0	0	110-120	0	15670	100,100
130	0	0	0	0	0	0	0	0	120-130	0	15670	100,100
140	0	0	0	0	0	0	0	0	130-140	0	15670	100,100
150	0	0	0	0	0	0	0	0	140-150	0	15670	100,100
160	0	0	0	0	0	0	0	0	150-160	0	15670	100,100
170	0	0	0	0	0	0	0	0	160-170	0	15670	100,100
180	0	0	0	0	0	0	0	0	170-180	0	15670	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



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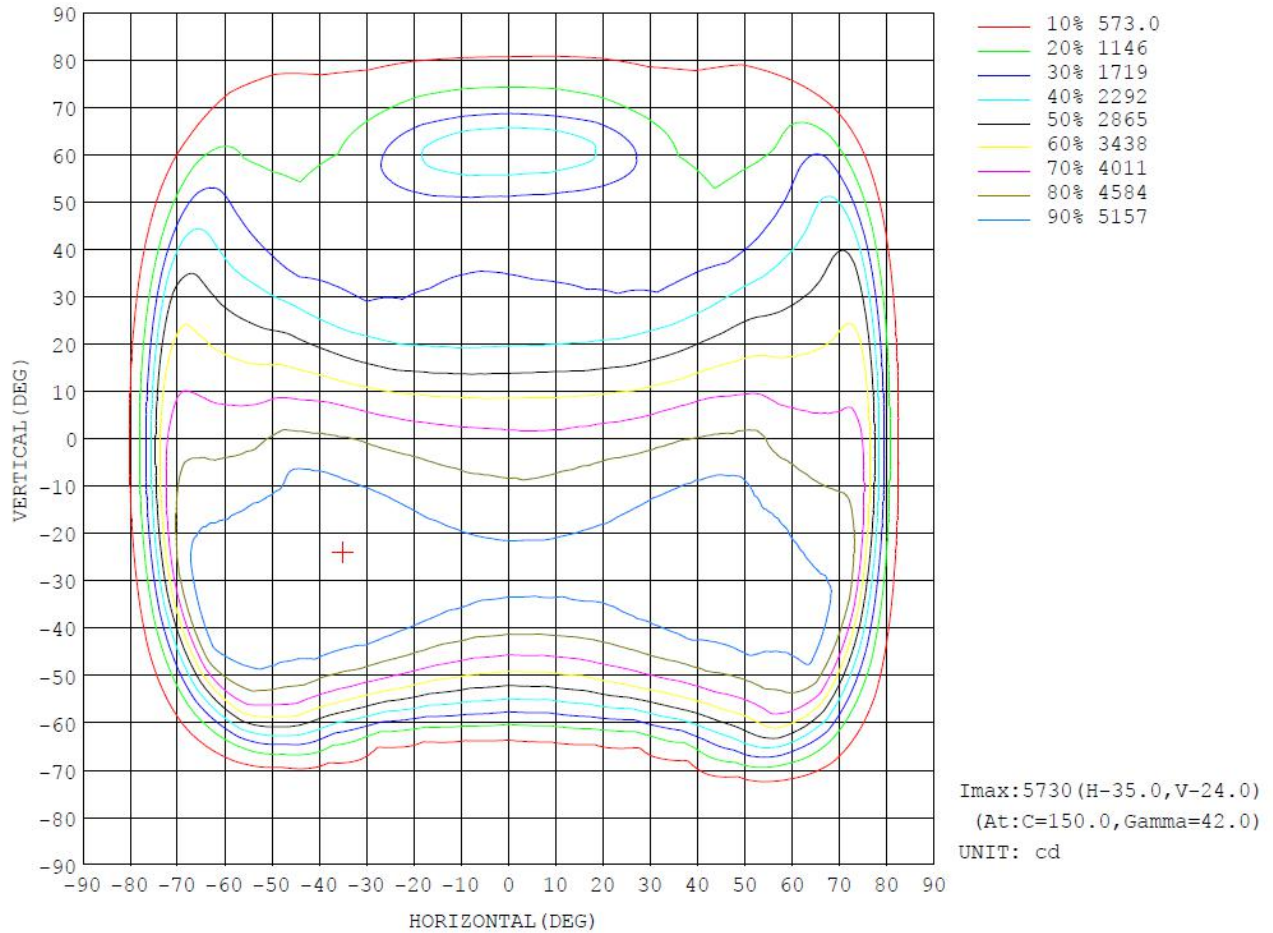
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5.4 Isocandela Diagram





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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	4142	4142	4142	4142	4142	4142	4142	4142	4142	4142	4142	4142	4142	4142	4142	4142	4142	4142	4142
5	4128	4199	4253	4292	4355	4365	4387	4409	4430	4438	4442	4435	4413	4383	4362	4312	4280	4214	4155
10	4168	4261	4378	4451	4523	4544	4586	4613	4634	4664	4649	4655	4634	4609	4558	4503	4439	4312	4186
15	4209	4380	4520	4611	4698	4736	4790	4818	4838	4858	4863	4866	4833	4817	4761	4686	4592	4438	4236
20	4276	4508	4679	4787	4864	4903	4979	5021	5058	5079	5101	5087	5055	5048	4974	4897	4793	4582	4322
25	4330	4633	4838	4972	5066	5147	5236	5339	5393	5458	5466	5426	5346	5288	5219	5126	4992	4742	4392
30	4412	4771	5021	5183	5325	5418	5487	5510	5465	5450	5521	5580	5584	5609	5558	5380	5188	4912	4498
35	4512	4927	5243	5438	5441	5389	5364	5155	5073	5081	5132	5315	5541	5601	5641	5643	5462	5070	4589
40	4580	5111	5448	5502	5448	5305	5059	4873	4733	4713	4824	5040	5337	5614	5709	5727	5638	5267	4661
45	4641	5286	5539	5584	5453	5153	4772	4438	4182	4120	4264	4613	5075	5520	5714	5723	5681	5416	4699
50	4691	5327	5544	5557	5388	4886	4313	3757	3374	3275	3476	3946	4604	5256	5651	5741	5619	5206	4605
55	4505	5124	5519	5538	5149	4416	3573	2848	2399	2285	2481	2979	3833	4759	5449	5709	5662	5194	4432
60	4334	5094	5548	5382	4678	3592	2458	1782	1358	1229	1397	1792	2634	3913	5035	5587	5675	5198	4387
65	4223	5063	5449	5071	3936	2409	1187	677	532	495	519	610	1195	2646	4314	5316	5740	5268	4410
70	4196	5107	5328	4467	2785	1058	456	352	290	267	286	342	445	1178	2976	4488	5321	5109	4312
75	3950	4649	4482	3267	1345	349	216	145	112	100	106	134	200	326	972	2126	2714	2892	2606
80	1405	1607	1450	789	231	85.0	46.2	24.4	15.8	13.1	13.8	19.8	34.7	54.5	117	310	490	605	605
85	126	130	83.8	30.0	8.09	5.18	3.32	2.22	1.81	1.59	1.58	1.76	2.45	3.96	5.82	8.41	12.5	19.2	29.6
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
100	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
105	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
110	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
115	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
120	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
125	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
130	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
135	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
140	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
145	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
150	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
155	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
160	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
165	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
170	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
175	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
180	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00



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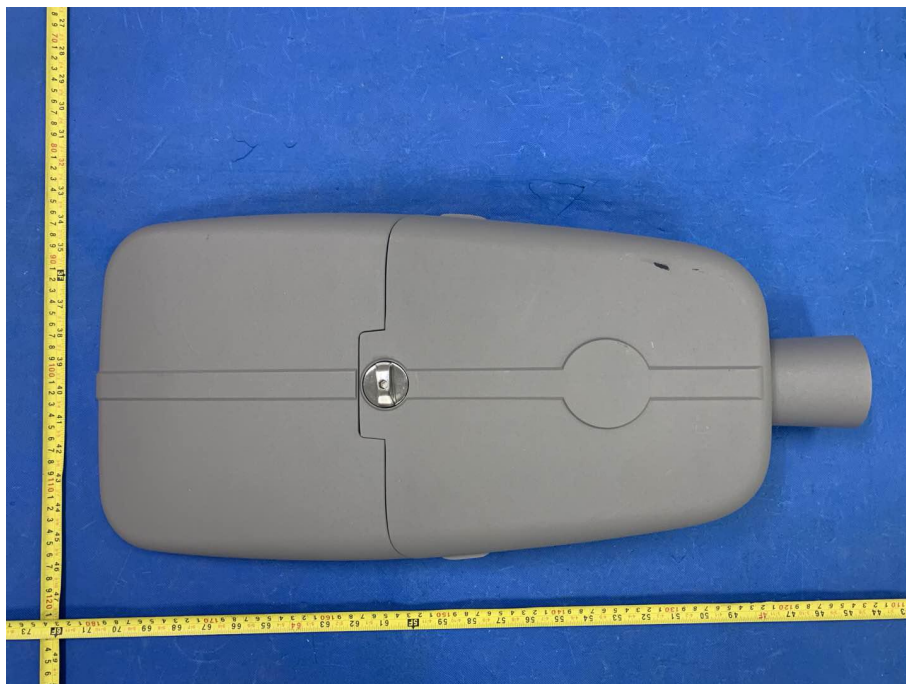
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6. Photo of sample:



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

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Prov .518000 China

Tel: +(86) 0755-29871520 | Fax: +(86) 0755-2987 1521 | E-mail: webmaster@lcs-cert.com | [http:// www.lcs-cert.com](http://www.lcs-cert.com)