



Testing Lab.

Shenzhen Southern LCS Compliance Testing Laboratory Ltd.



TESTING
NVLAP LAB CODE 600112-0

Report No.: LCS200901059BS

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-52-150W-T3-4000K

Rating..... : AC220V, 50/60Hz, 150W, 4000K

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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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-52-150W-T3-4000K
Rated Inputs.....:	AC220V, 50/60Hz
Rated Power.....:	150W
Declared CCT.....:	4000K
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:

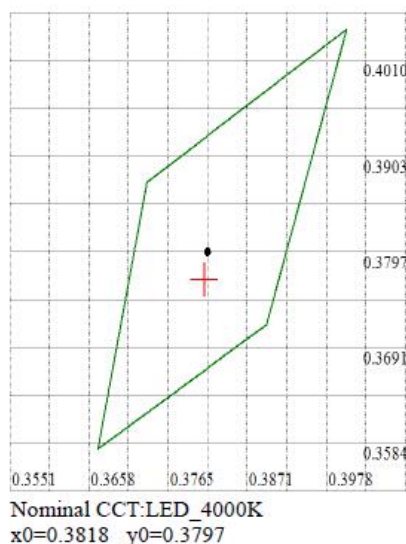
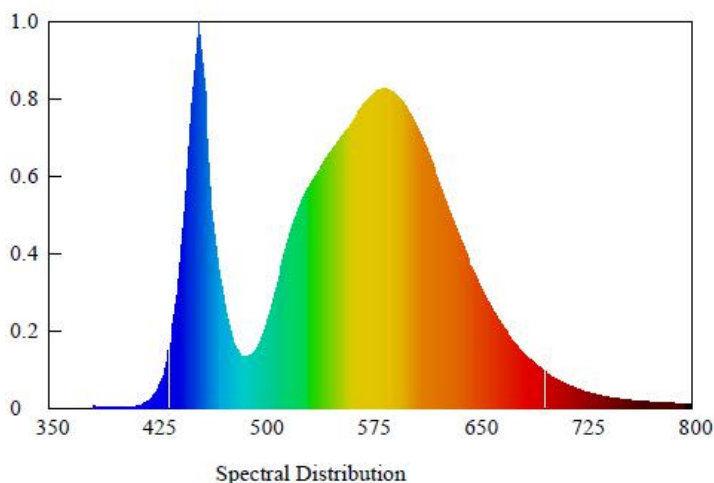
4.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	220.00	50.0	0.6800	0.9910	148.26

Test type	CCT (K)	CRI	Duv	Luminous flux (lm)	Luminous efficacy(lm/W)
Output	3977	73.6	-0.00031	22588.89	152.36

4.2 Spectrum

Spectroradiometric Parameters



Chromaticity Coordinates: x=0.3813 y=0.3766 u'=0.2257 v'=0.5016

Correlated Color Temperature: 3977 K

Colour Fidelity Index: Rf=71

Luminous Flux: 22588.89 lm

Chromaticity Difference: -0.00031Duv

Color Ratio: Kr=37.9% Kg=55.0% Kb=7.0%

Bandwidth: 24.8nm

Photosynthetically Active Radiation(PAR): 64.13W

Rendering Index: Ra=73.6

R1=71 R2=83 R3=90 R4=69 R5=69 R6=73 R7=82 R8=52

R9=-25 R10=56 R11=63 R12=40 R13=74 R14=94 R15=65 Re=64

Dominant Wavelength: 578.0 nm(E)

Gamut Index: Rg=91

Purity: 0.2748

Peak Wavelength: 455.0 nm

Radiant Flux: 65.631 W

Photosynthetic Photon Flux(PPF):301.70μmol/s



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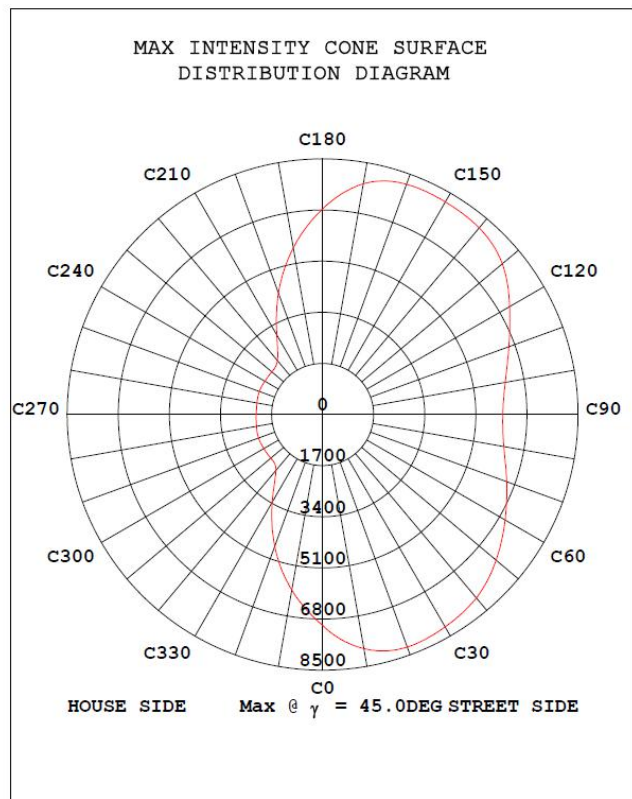
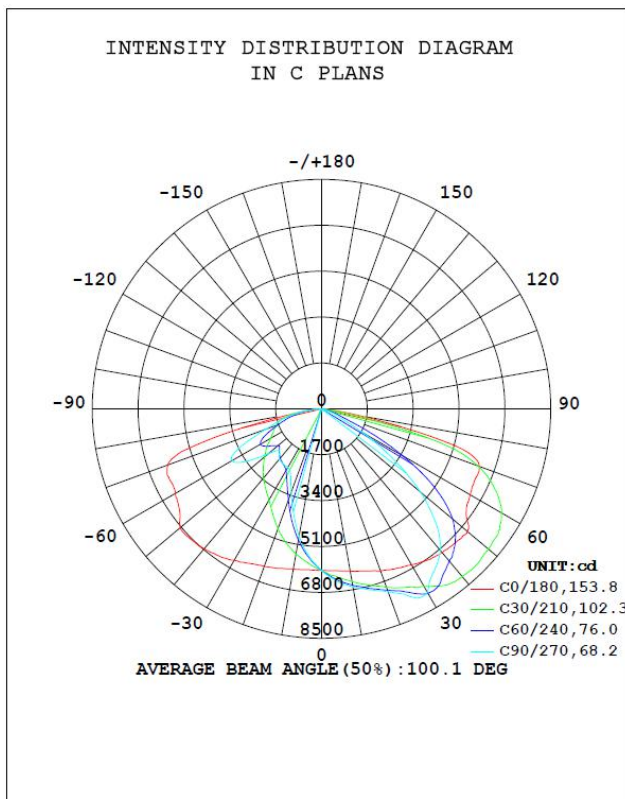
5. Goniophotometer Test results

5.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	220.0	50.01	0.6799	0.9908	148.2

Test type	Total Flux (lm)	Luminous efficacy(lm/W)	ZL (0~90°)	ZL (80~90°)
Output	22592.3	152.44	100%	1.1%

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	6098	6577	6693	6574	6027	5163	4787	5235	0- 10	566.9	566.9	2.51, 2.51
20	6387	7088	7212	7089	6206	4055	3292	4181	10- 20	1637	2204	9.76, 9.76
30	6669	7746	7837	7803	6479	3085	2506	3237	20- 30	2619	4823	21.3, 21.3
40	6941	7832	6840	8019	6764	2494	2439	2590	30- 40	3510	8334	36.9, 36.9
50	7066	7463	4787	7698	6837	2098	2593	2142	40- 50	4094	12428	55, 55
60	6365	5907	1762	6249	6275	1895	3830	1888	50- 60	4206	16634	73.6, 73.6
70	6208	2791	410.3	3025	6065	1427	2203	1452	60- 70	3635	20269	89.7, 89.7
80	1333	193.3	18.24	144.0	1095	893.9	883.0	972.7	70- 80	2079	22348	98.9, 98.9
90	0	0	0	0	0	0	0	0	80- 90	244.3	22592	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	22592	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	22592	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	22592	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	22592	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	22592	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	22592	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	22592	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	22592	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	22592	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



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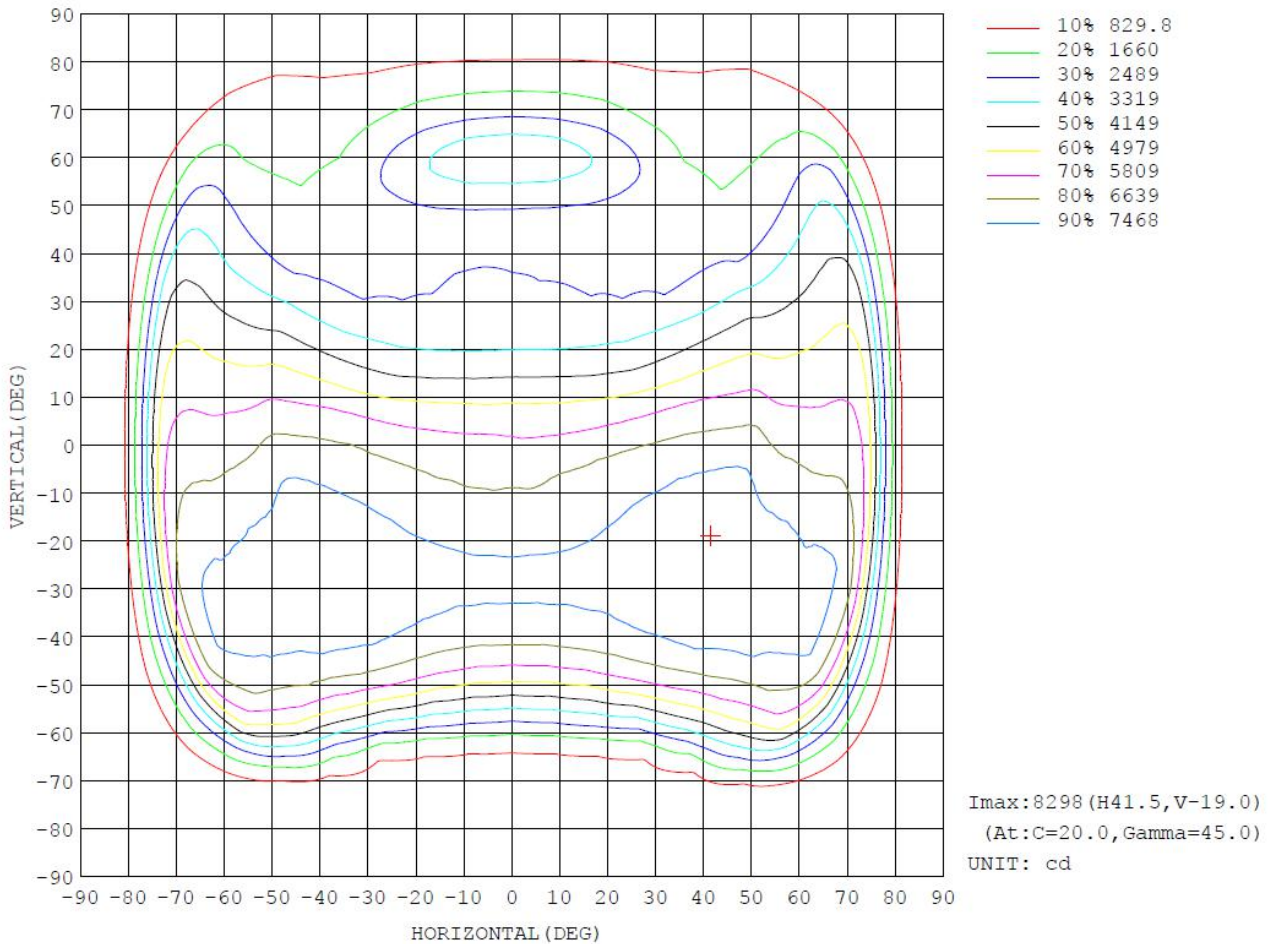
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5.4 Isocandela Diagram





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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	5987	5987	5987	5987	5987	5987	5987	5987	5987	5987	5987	5987	5987	5987	5987	5987	5987	5987	5987
5	6020	6107	6160	6228	6274	6299	6349	6389	6399	6403	6407	6359	6349	6330	6267	6223	6135	6075	5981
10	6098	6259	6385	6493	6567	6588	6630	6650	6679	6693	6695	6647	6626	6599	6549	6445	6349	6194	6027
15	6220	6452	6615	6758	6817	6853	6888	6915	6915	6940	6940	6890	6892	6857	6795	6710	6568	6366	6116
20	6387	6685	6900	7031	7080	7097	7144	7204	7205	7212	7240	7186	7160	7130	7048	6981	6834	6576	6206
25	6522	6925	7164	7298	7345	7395	7484	7579	7634	7652	7675	7568	7505	7443	7363	7254	7099	6811	6318
30	6669	7165	7427	7589	7714	7778	7889	7925	7846	7837	7909	7958	7952	7883	7722	7570	7356	7048	6479
35	6842	7403	7738	7978	7955	7830	7732	7455	7321	7302	7346	7497	7839	7978	8048	7953	7673	7275	6651
40	6941	7635	8088	8116	7951	7712	7368	7109	6920	6840	6933	7163	7509	7958	8080	8117	8023	7519	6764
45	7011	7899	8226	8149	7956	7534	7009	6519	6121	5994	6170	6595	7183	7804	8103	8164	8150	7792	6843
50	7066	7754	7971	8068	7801	7125	6346	5493	4942	4787	5011	5651	6563	7429	7969	8084	7976	7587	6837
55	6555	7422	7967	8007	7421	6382	5180	4114	3492	3275	3549	4232	5505	6730	7608	7993	7986	7418	6447
60	6365	7397	7936	7703	6639	5175	3464	2551	1959	1762	1997	2603	3764	5517	6983	7766	7949	7373	6275
65	6263	7414	7877	7111	5549	3494	1681	1001	809	761	815	1032	1842	3783	5978	7339	7948	7420	6217
70	6208	7428	7457	6170	3981	1600	697	543	444	410	441	531	698	1815	4236	6247	7334	7245	6065
75	4831	5471	5142	3870	1748	519	332	222	170	153	164	211	311	530	1597	3215	4205	4574	4117
80	1333	1534	1280	786	263	123	67.1	35.6	23.0	18.2	20.4	29.9	52.7	87.0	201	544	876	1088	1095
85	126	127	89.2	31.7	10.7	7.21	4.79	3.23	2.70	2.37	2.46	2.61	3.57	5.81	8.43	13.7	29.5	49.4	71.8
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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6. Photo of sample:



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

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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)