



Testing Lab.

Shenzhen Southern LCS Compliance Testing Laboratory Ltd.



TESTING
NVLAP LAB CODE 600112-0

Report No.: LCS200901053BS

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-52-30W-T3-4000K

Rating..... : AC220V, 50/60Hz, 30W, 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-52-30W-T3-4000K
Rated Inputs.....:	AC220V, 50/60Hz
Rated Power.....:	30W
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

4. Integrating Sphere Test Results:

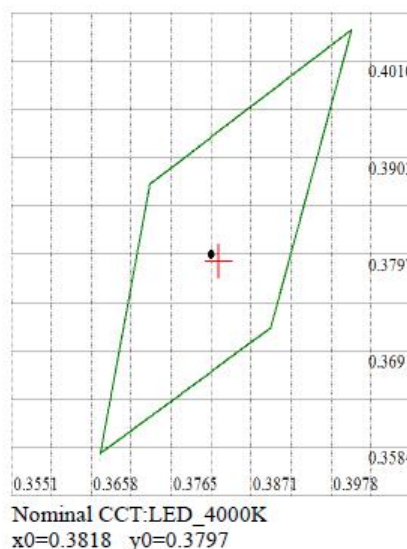
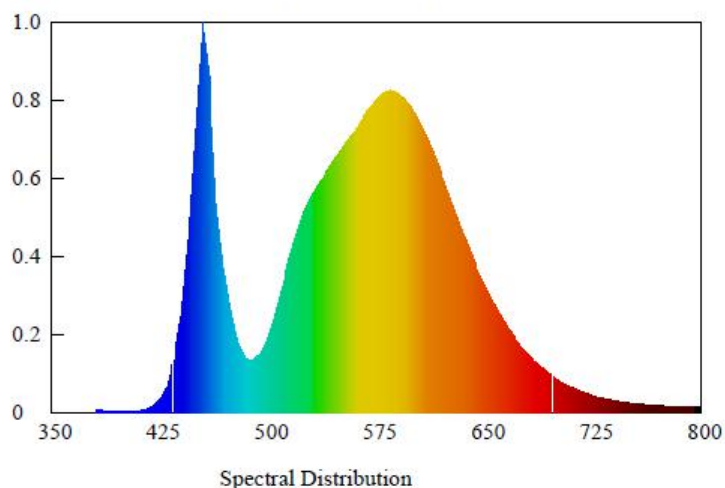
4.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	220.04	50.0	0.1428	0.9690	30.45

Test type	CCT (K)	CRI	Duv	Luminous flux (lm)	Luminous efficacy(lm/W)
Output	3951	73.6	+0.00031	4723.71	155.13

4.2 Spectrum

Spectroradiometric Parameters



Chromaticity Coordinates: x=0.3828 y=0.3789 u'=0.2258 v'=0.5029

Correlated Color Temperature: 3951 K

Colour Fidelity Index: Rf=71

Luminous Flux: 4723.71 lm

Chromaticity Difference: +0.00031Duv

Color Ratio: Kr=38.1% Kg=54.9% Kb=7.1%

Bandwidth: 23nm

Photosynthetically Active Radiation(PAR): 12.86W

Rendering Index: Ra=73.6

R1=71 R2=83 R3=90 R4=69 R5=69 R6=74 R7=81 R8=52

R9=-26 R10=57 R11=63 R12=40 R13=74 R14=94 R15=65 Re=64

Dominant Wavelength: 578.0 nm(E)

Gamut Index: Rg=90

Purity: 0.2861

Peak Wavelength: 455.0 nm

Radiant Flux: 13.17 W

Photosynthetic Photon Flux(PPF):60.55μmol/s



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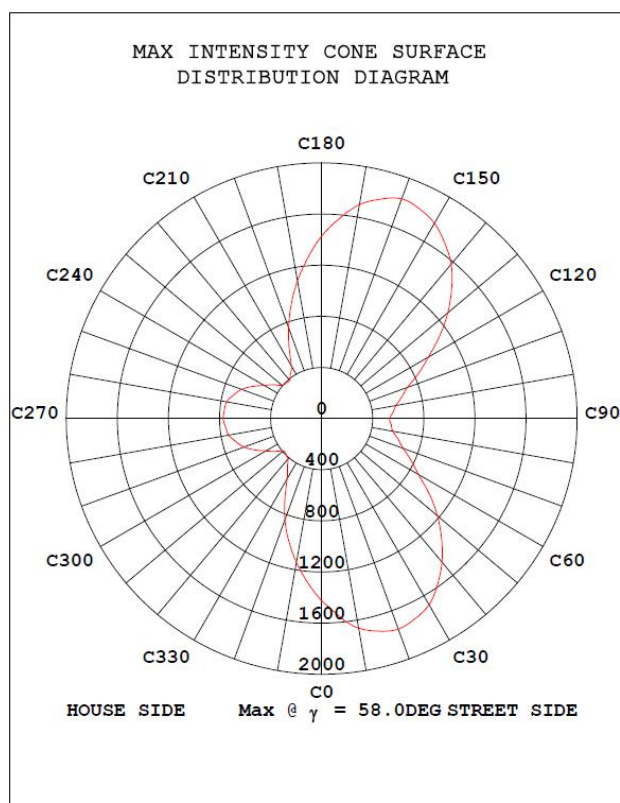
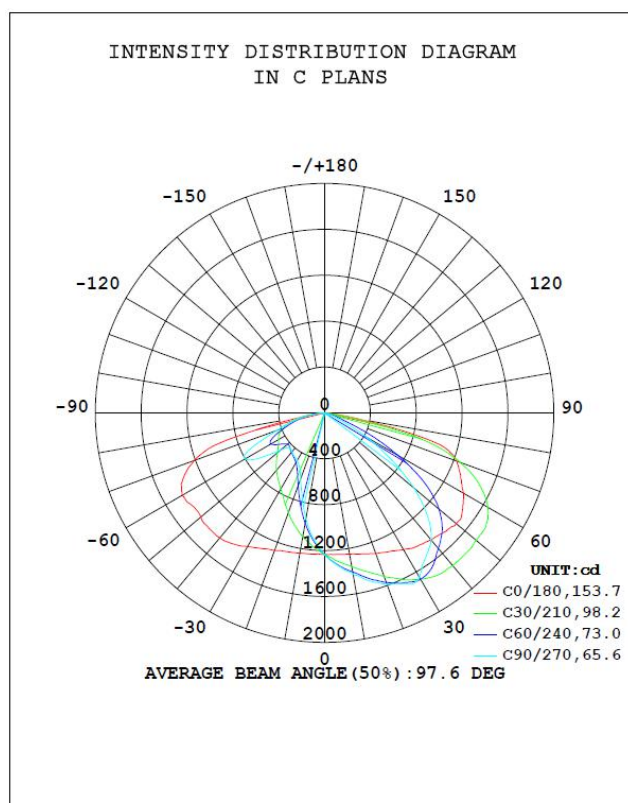
5. Goniophotometer Test results

5.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	220.0	50.01	0.1425	0.9692	30.38

Test type	Total Flux (lm)	Luminous efficacy(lm/W)	ZL (0~90°)	ZL (80~90°)
Output	4715.47	155.22	100%	0.8%

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	1249	1390	1427	1390	1241	1030	936.5	1046	0- 10	116.8	116.8	2.48, 2.48
20	1303	1553	1590	1550	1275	772.8	615.0	810.6	10- 20	338.8	455.6	9.66, 9.66
30	1375	1674	1655	1694	1345	575.7	482.4	616.6	20- 30	547.0	1003	21.3, 21.3
40	1443	1656	1444	1714	1422	479.3	443.0	509.8	30- 40	730.5	1733	36.8, 36.8
50	1499	1561	1018	1648	1411	418.0	508.3	434.4	40- 50	851.3	2584	54.8, 54.8
60	1399	1230	417.6	1349	1434	391.8	802.1	393.7	50- 60	896.6	3481	73.8, 73.8
70	1226	574.4	86.07	668.2	1212	317.4	441.2	318.0	60- 70	774.9	4256	90.3, 90.3
80	285.0	33.51	2.369	26.27	191.1	178.5	158.1	180.3	70- 80	419.8	4676	99.2, 99.2
90	0	0	0	0	0	0	0	0	80- 90	39.82	4715	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	4715	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	4715	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	4715	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	4715	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	4715	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	4715	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	4715	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	4715	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	4715	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



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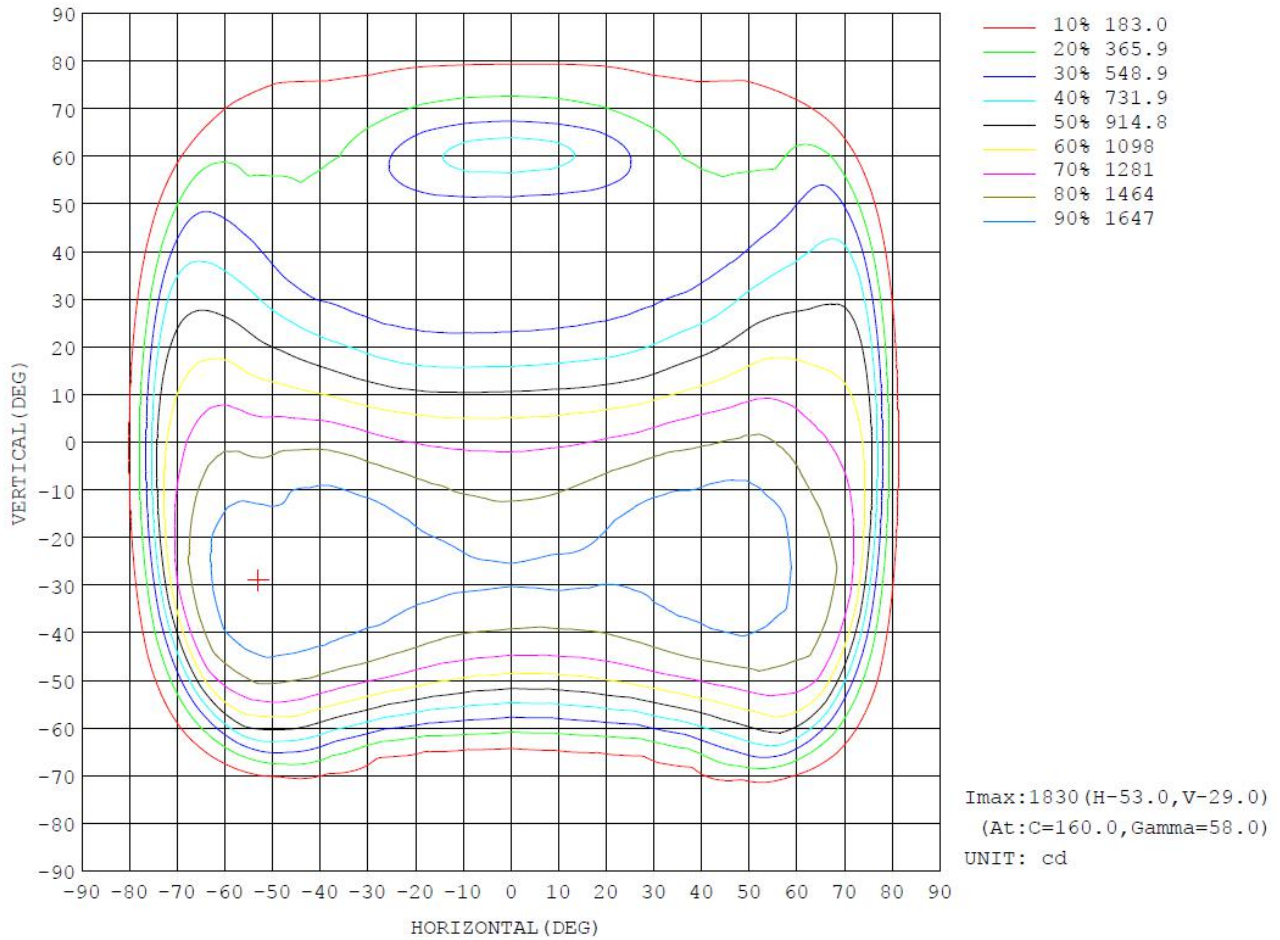
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5.4 Isocandela Diagram





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5.5 Luminous Distribution Intensity Data

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234	1234
5	1237	1247	1258	1270	1282	1291	1297	1304	1310	1318	1324	1327	1329	1331	1334	1337	1340	1339	1335
10	1249	1274	1300	1318	1332	1346	1359	1370	1381	1390	1397	1402	1406	1412	1417	1420	1424	1426	1427
15	1273	1309	1340	1367	1391	1414	1432	1446	1459	1470	1478	1485	1493	1500	1504	1507	1508	1512	1516
20	1303	1355	1396	1433	1465	1494	1516	1535	1545	1553	1559	1565	1572	1580	1587	1588	1587	1588	1590
25	1333	1402	1456	1505	1543	1576	1600	1617	1622	1625	1625	1628	1633	1640	1647	1648	1646	1643	1640
30	1375	1458	1524	1583	1626	1658	1673	1680	1679	1674	1669	1670	1675	1679	1682	1674	1664	1658	1655
35	1416	1508	1584	1644	1686	1713	1724	1720	1702	1683	1661	1647	1638	1616	1588	1565	1543	1539	1538
40	1443	1541	1623	1685	1728	1744	1738	1718	1689	1656	1621	1583	1543	1514	1488	1466	1447	1444	1444
45	1471	1584	1679	1730	1751	1751	1736	1709	1676	1625	1566	1508	1451	1402	1356	1319	1285	1275	1266
50	1499	1612	1704	1745	1761	1750	1726	1685	1636	1561	1477	1389	1301	1221	1145	1091	1042	1027	1018
55	1469	1583	1681	1729	1757	1747	1718	1645	1555	1444	1326	1198	1068	964	867	803	745	727	713
60	1399	1517	1628	1689	1730	1699	1645	1526	1389	1230	1066	900	737	640	555	499	447	431	418
65	1309	1436	1557	1605	1633	1574	1492	1323	1135	928	719	553	395	316	247	214	183	173	165
70	1226	1354	1479	1503	1504	1391	1257	1037	804	574	348	242	150	127	110	101	92.1	89.0	86.1
75	1002	1087	1181	1168	1134	1009	860	637	401	253	114	81.8	61.7	50.5	40.1	35.4	31.3	30.1	28.7
80	285	311	336	319	296	236	167	112	50.8	33.5	19.2	13.7	8.70	6.54	4.34	3.61	2.96	2.65	2.37
85	30.2	30.3	29.6	22.8	13.8	9.43	4.10	3.14	2.22	1.78	1.31	1.11	0.90	0.76	0.62	0.56	0.51	0.47	0.40
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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