



TEST REPORT

Of IES LM-79-08

Kunde: <i>Client:</i>	Shenzhen Sinoco Lighting Technologies Co.,Ltd.
Adresse: <i>Address:</i>	G building,Shasi , High-Tec ,Industrial park,Shajing Town,Baoan District, Shenzhen, Guangdong,China
Hersteller: <i>Manufacturer:</i>	Shenzhen Sinoco Lighting Technologies Co.,Ltd.
Adresse: <i>Address:</i>	G building,Shasi , High-Tec ,Industrial park,Shajing Town,Baoan District, Shenzhen, Guangdong,China
Name der Marke: <i>Brand Name:</i>	SINOCO®
Beschreibung des Produkts: <i>Product Description:</i>	LED Street Light
Modelle: <i>Models:</i>	ST-52-80W-T3-4000K
Bewertung: <i>Rating:</i>	AC220-240V, 50/60Hz, 80W, 4000K
Verfahren: <i>Method:</i>	IES LM-79-08: Approved Method for Electrical and Photometric Measurements of Solid-State Lighting Products
Prüfergebnis*: <i>Test result*:</i>	N/A

Datum der Prüfung: <i>Date of Test:</i>	Datum der Emission: <i>Date of Issue:</i>	Klassifizierung: <i>Classification:</i>	Gegenstand der Prüfung: <i>Test item:</i>
2020-11-17	2020-11-17	Commission Test	IES LM-79-08

Prüflabor (Testlabor) / Testing Laboratory:
Shenzhen Southern LCS Compliance Testing Laboratory Ltd.

Test von/Test by: William Lian William Lian/ Project Engineer	Check von/Check by:  Ian Luo/ Director	Genehmigt von/Approved by:  Jesse Liu/ Manager
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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.
Remark: The duplication of this report or parts of it and its use for advertising purposes is only allowed with permission of the testing laboratory. This report contains the result of examination of the product sample submitted by the appliance. A general statement concerning the quality of the products from the series manufacturer cannot be derived therefore.



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1. Test Method

Test Item.....:	Integrating Sphere Test
Ambient Condition	25.1°C
Stabilization time(h):	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°C
Total operated time of the product for measurements including stabilization..... (h):	1.0h
Orientation(burning position) of SSL product during test	down
Test Method.....:	The sample was tested according to the IES LM-79-2008. Photometric parameters 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.



2. Product Information

Product description.....:	LED Street Light
Model Number.....:	ST-52-80W-T3-4000K
Rated Inputs.....:	AC220-240V, 50/60Hz
Rated Power.....:	80W
Declared CCT.....:	4000K
LED Manufacturer.....:	N/A
LED Model.....:	N/A
Forward current of the LED chip.....:	N/A
Date of Receipt Samples.....:	November 16, 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

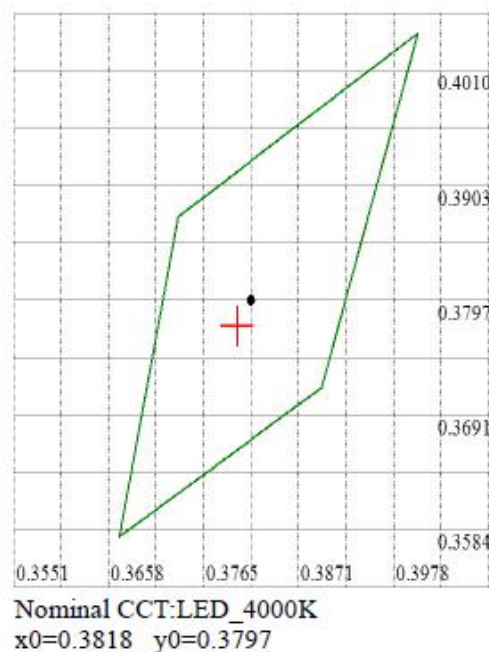
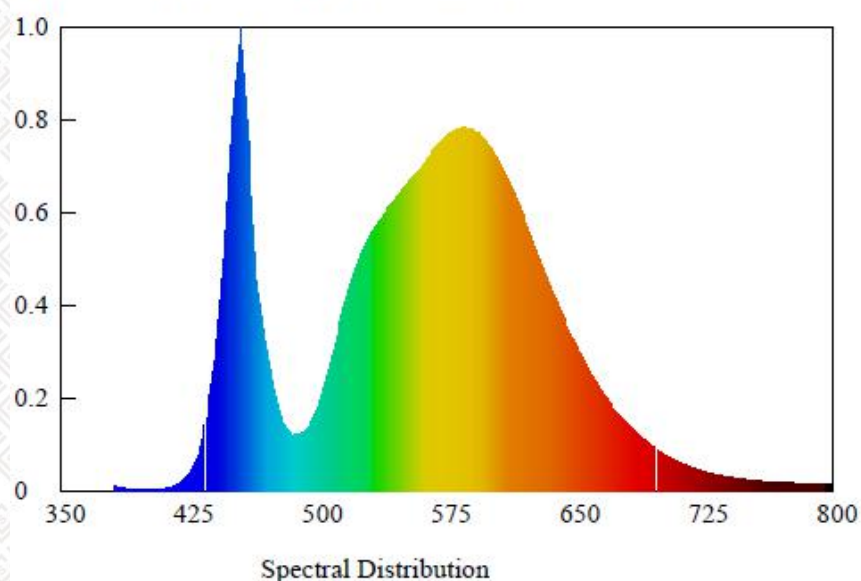
4.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	220.03	50.0	0.3712	0.9760	79.72

Test type	CCT (K)	CRI	Duv	Luminous flux (lm)	Luminous efficacy(lm/W)
Output	4011	73.5	+0.00032	12524.01	157.1

4.2 Spectrum

Spectroradiometric Parameters



Chromaticity Coordinates: $x=0.3802$ $y=0.3773$ $u'=0.2247$ $v'=0.5018$

Correlated Color Temperature: 4011 K

Colour Fidelity Index: $R_f=71$

Luminous Flux: 12524.01 lm

Chromaticity Difference: +0.00032Duv

Color Ratio: $K_r=37.6\%$ $K_g=55.4\%$ $K_b=7.0\%$

Bandwidth: 15.8nm

Photosynthetically Active Radiation(PAR): 34.08W

Rendering Index: $R_a=73.5$

Dominant Wavelength: 577.0 nm(E)

Gamut Index: $R_g=91$

Purity: 0.2736

Peak Wavelength: 455.0 nm

Radiant Flux: 34.929 W

Photosynthetic Photon Flux(PPF):160.28 μ mol/s

$R_1=71$ $R_2=82$ $R_3=89$ $R_4=70$ $R_5=69$ $R_6=73$ $R_7=82$ $R_8=53$

$R_9=-25$ $R_{10}=55$ $R_{11}=64$ $R_{12}=39$ $R_{13}=74$ $R_{14}=93$ $R_{15}=65$ $R_e=64$



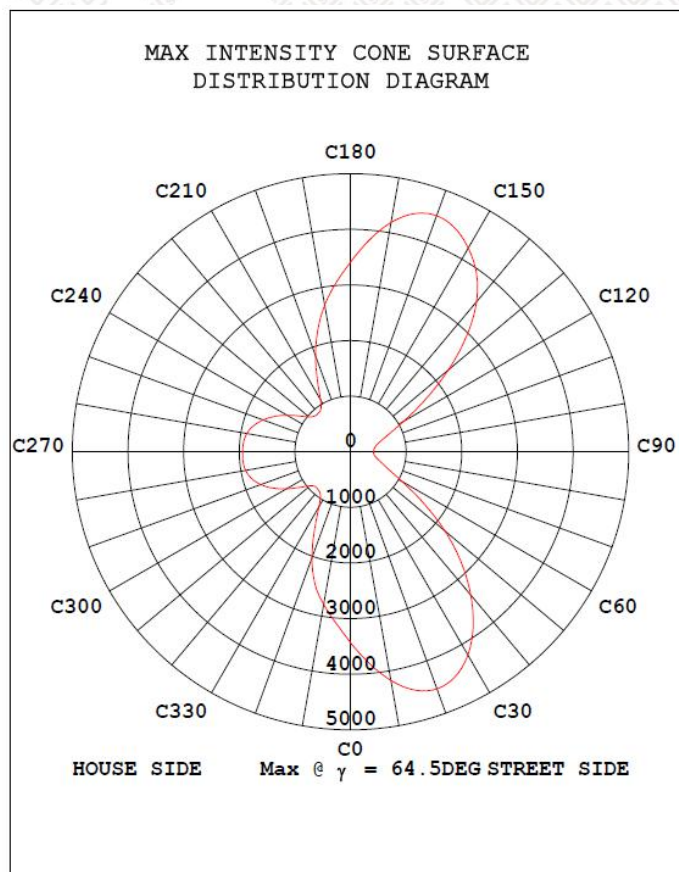
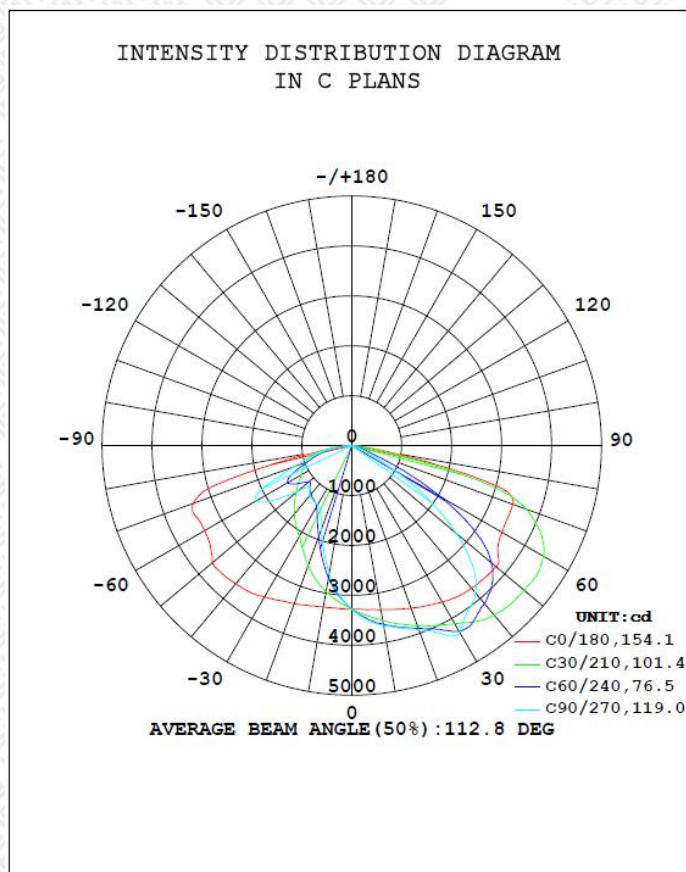
5. Goniophotometer Test results

5.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	220.1	50.01	0.3709	0.9762	79.69

Test type	Total Flux (lm)	Luminous efficacy(lm/W)	I _{max} (cd)	ZL (0~90°)	ZL (80~90°)
Output	12517.2	157.08	4534	100%	1.1%

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



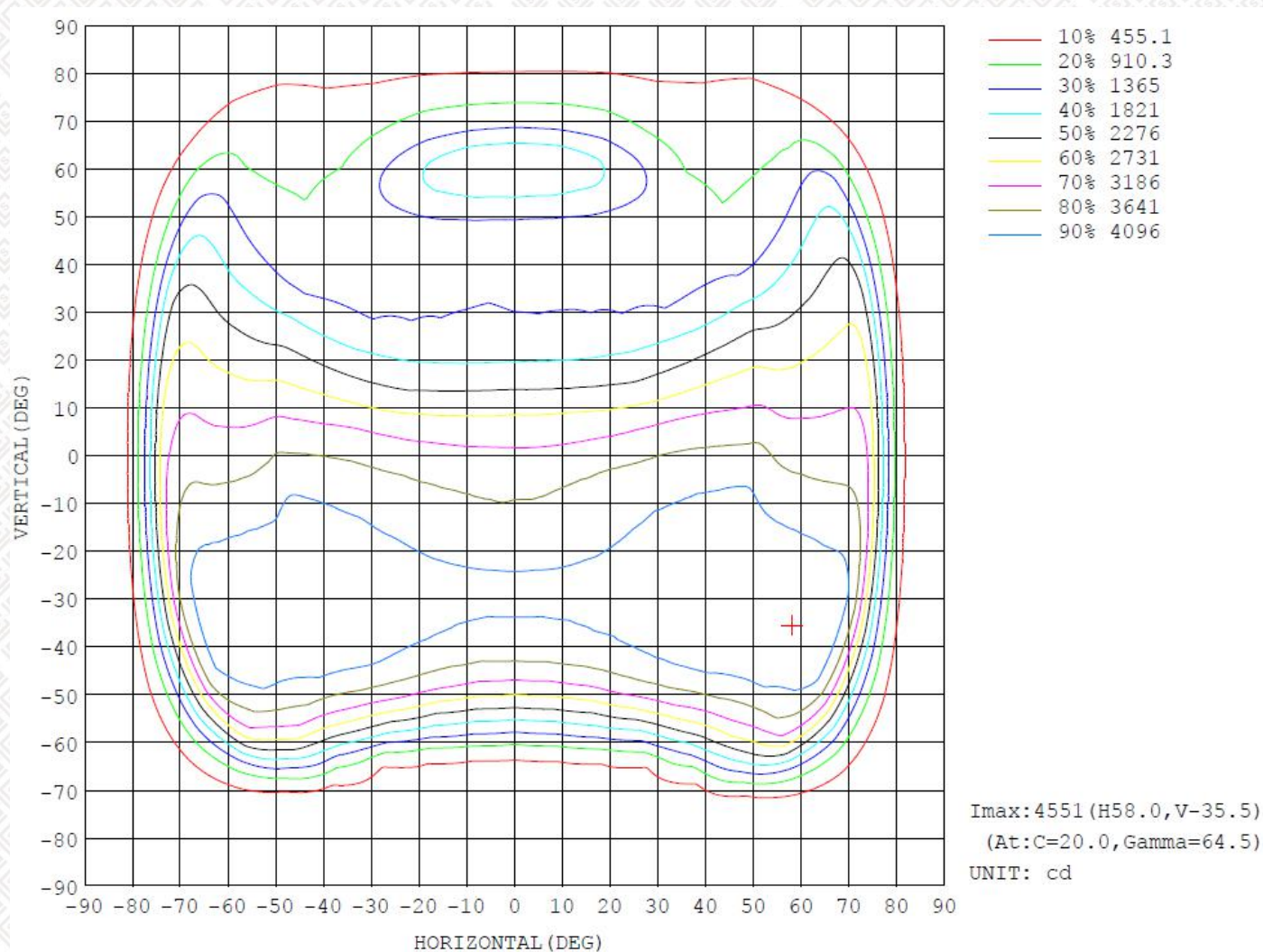


5.3 Zonal Flux Diagram

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	3337	3614	3662	3596	3283	2826	2605	2860	0- 10	310.3	310.3	2.48, 2.48
20	3468	3875	3923	3863	3371	2198	1791	2269	10- 20	893.1	1203	9.61, 9.61
30	3618	4206	4317	4202	3501	1661	1367	1755	20- 30	1422	2626	21, 21
40	3730	4352	3848	4391	3617	1320	1307	1390	30- 40	1910	4535	36.2, 36.2
50	3776	4256	2731	4325	3642	1108	1426	1145	40- 50	2247	6782	54.2, 54.2
60	3476	3483	986.1	3570	3407	1028	2216	1022	50- 60	2348	9131	72.9, 72.9
70	3431	1715	209.4	1759	3378	794.9	1219	792.2	60- 70	2053	11184	89.3, 89.3
80	794.3	109.9	10.27	82.01	634.8	509.7	478.5	540.4	70- 80	1194	12378	98.9, 98.9
90	0	0	0	0	0	0	0	0	80- 90	139.1	12517	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	12517	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	12517	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	12517	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	12517	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	12517	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	12517	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	12517	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	12517	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	12517	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



5.4 Isocandela Diagram



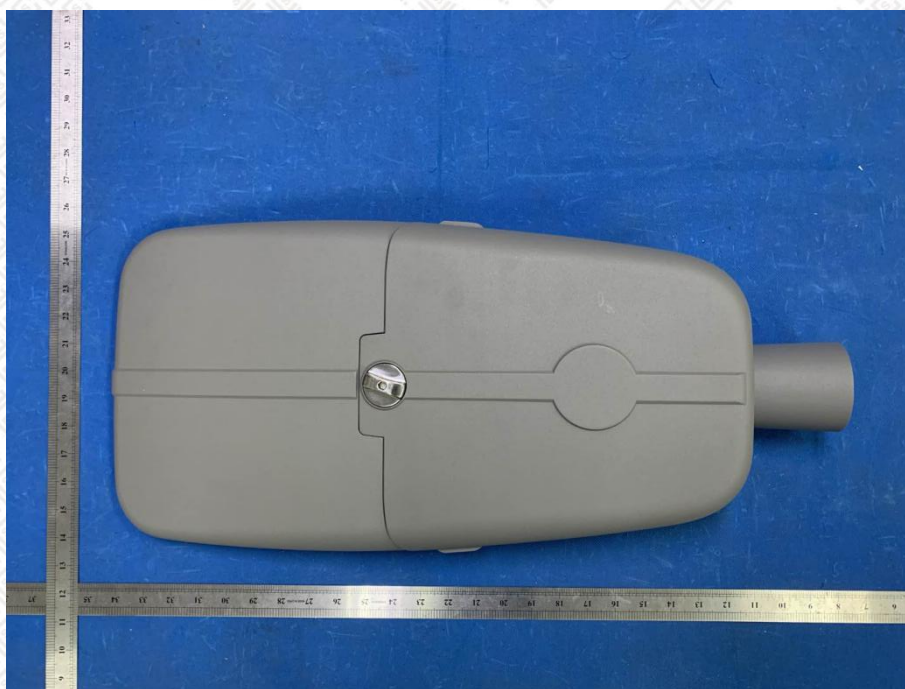
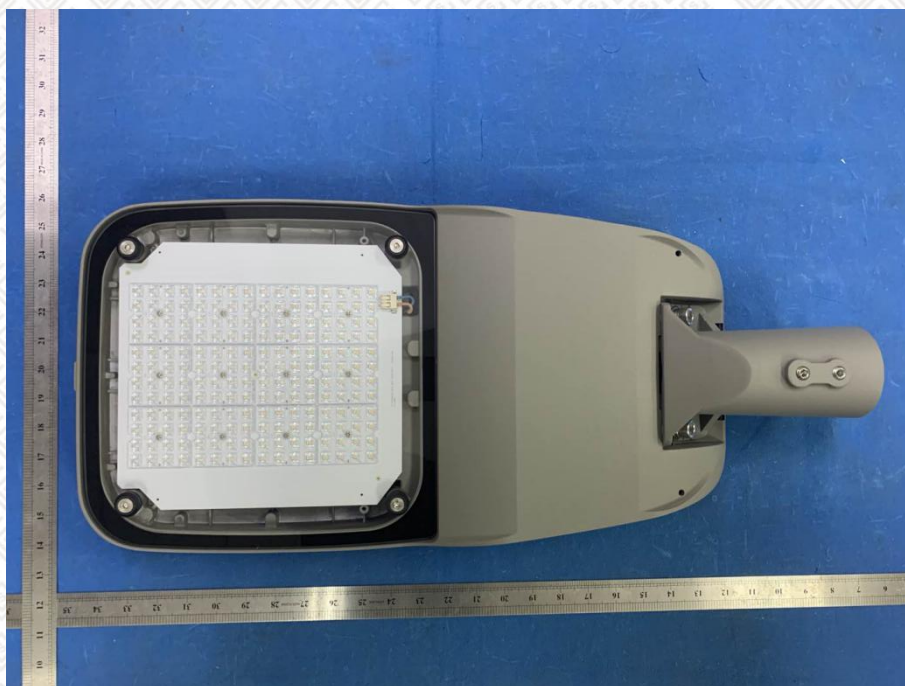
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6. Photo of sample

Photo document

Photos of ST-52-80W-T3-4000K



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