



Testing Lab.

Shenzhen Southern LCS Compliance Testing Laboratory Ltd.



TESTING
NVLAP LAB CODE 600112-0

Report No.: LCS200901058BS

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-T3-3000K

Rating..... : AC220V, 50/60Hz, 150W, 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-52-150W-T3-3000K
Rated Inputs.....:	AC220V, 50/60Hz
Rated Power.....:	150W
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:

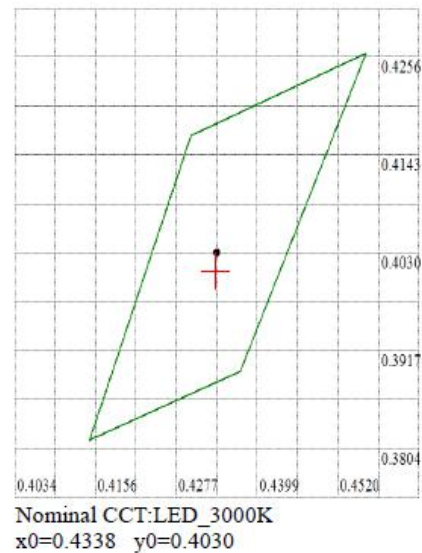
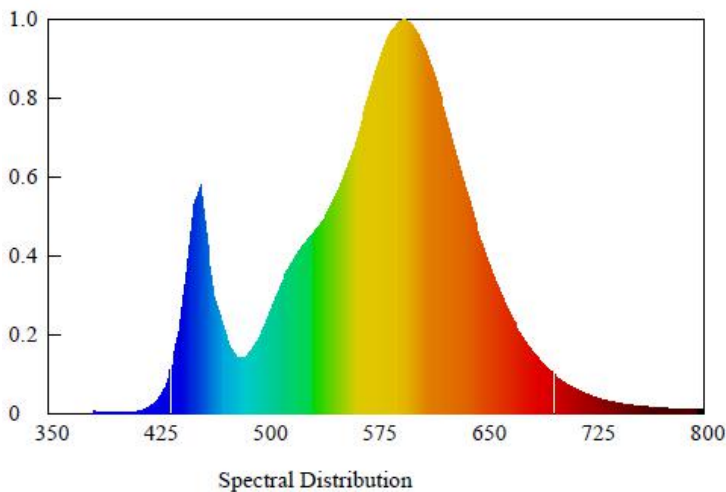
4.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	219.92	50.0	0.6834	0.9910	148.93

Test type	CCT (K)	CRI	Duv	Luminous flux (lm)	Luminous efficacy(lm/W)
Output	3031	72.8	-0.00079	22442.26	150.69

4.2 Spectrum

Spectroradiometric Parameters



Chromaticity Coordinates: $x=0.4336$ $y=0.4009$ $u'=0.2498$ $v'=0.5196$

Correlated Color Temperature: 3031 K

Colour Fidelity Index: $R_f=74$

Luminous Flux: 22442.26 lm

Chromaticity Difference: -0.00079Duv

Color Ratio: $K_r=45.4\%$ $K_g=48.3\%$ $K_b=6.3\%$

Bandwidth: 101.9nm

Photosynthetically Active Radiation(PAR): 61.64W

Rendering Index: $R_a=72.8$

$R_1=69$ $R_2=85$ $R_3=94$ $R_4=68$ $R_5=69$ $R_6=81$ $R_7=75$ $R_8=41$

$R_9=-36$ $R_{10}=68$ $R_{11}=64$ $R_{12}=56$ $R_{13}=74$ $R_{14}=97$ $R_{15}=61$ $R_e=64$

Dominant Wavelength: 581.0 nm(E)

Gamut Index: $R_g=92$

Purity: 0.5082

Peak Wavelength: 595.0 nm

Radiant Flux: 62.989 W

Photosynthetic Photon Flux(PPF):296.96 μ mol/s

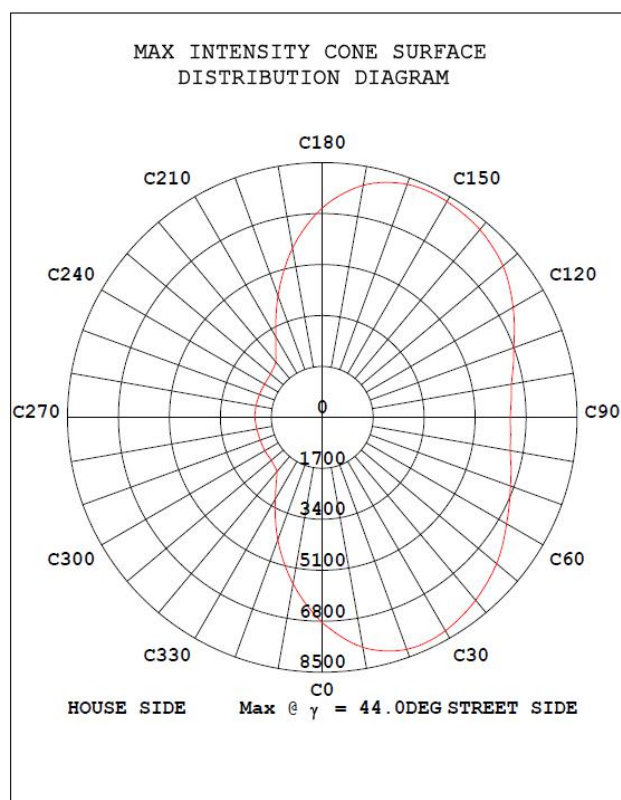
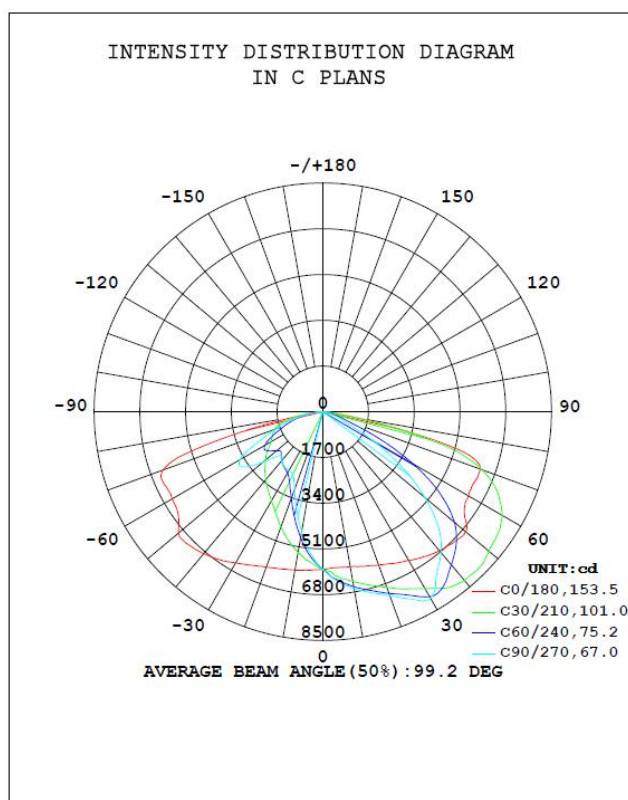
5. Goniophotometer Test results

5.1 Test Data

Test type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	220.0	50.00	0.6834	0.9906	148.9

Test type	Total Flux (lm)	Luminous efficacy(lm/W)	ZL (0~90°)	ZL (80~90°)
Output	22466	150.84	100%	0.9%

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	5848	6512	6672	6489	5972	4995	4544	4985	0- 10	554.4	554.4	2.47, 2.47
20	6063	7086	7275	7129	6147	3869	3085	3875	10- 20	1600	2155	9.59, 9.59
30	6384	7787	8004	7927	6489	2989	2523	2995	20- 30	2581	4736	21.1, 21.1
40	6744	7857	6833	8092	6884	2481	2380	2443	30- 40	3505	8241	36.7, 36.7
50	6932	7464	4952	7699	7003	2124	2895	2032	40- 50	4099	12339	54.9, 54.9
60	6249	6029	2173	6306	6470	1881	3562	1789	50- 60	4250	16590	73.8, 73.8
70	6225	3072	559.0	3263	6320	1419	1838	1366	60- 70	3621	20211	90, 90
80	1222	331.6	59.68	265.9	944.9	776.0	609.5	827.6	70- 80	2059	22269	99.1, 99.1
90	0	0	0	0	0	0	0	0	80- 90	196.6	22466	100, 100
100	0	0	0	0	0	0	0	0	90-100	0	22466	100, 100
110	0	0	0	0	0	0	0	0	100-110	0	22466	100, 100
120	0	0	0	0	0	0	0	0	110-120	0	22466	100, 100
130	0	0	0	0	0	0	0	0	120-130	0	22466	100, 100
140	0	0	0	0	0	0	0	0	130-140	0	22466	100, 100
150	0	0	0	0	0	0	0	0	140-150	0	22466	100, 100
160	0	0	0	0	0	0	0	0	150-160	0	22466	100, 100
170	0	0	0	0	0	0	0	0	160-170	0	22466	100, 100
180	0	0	0	0	0	0	0	0	170-180	0	22466	100, 100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		



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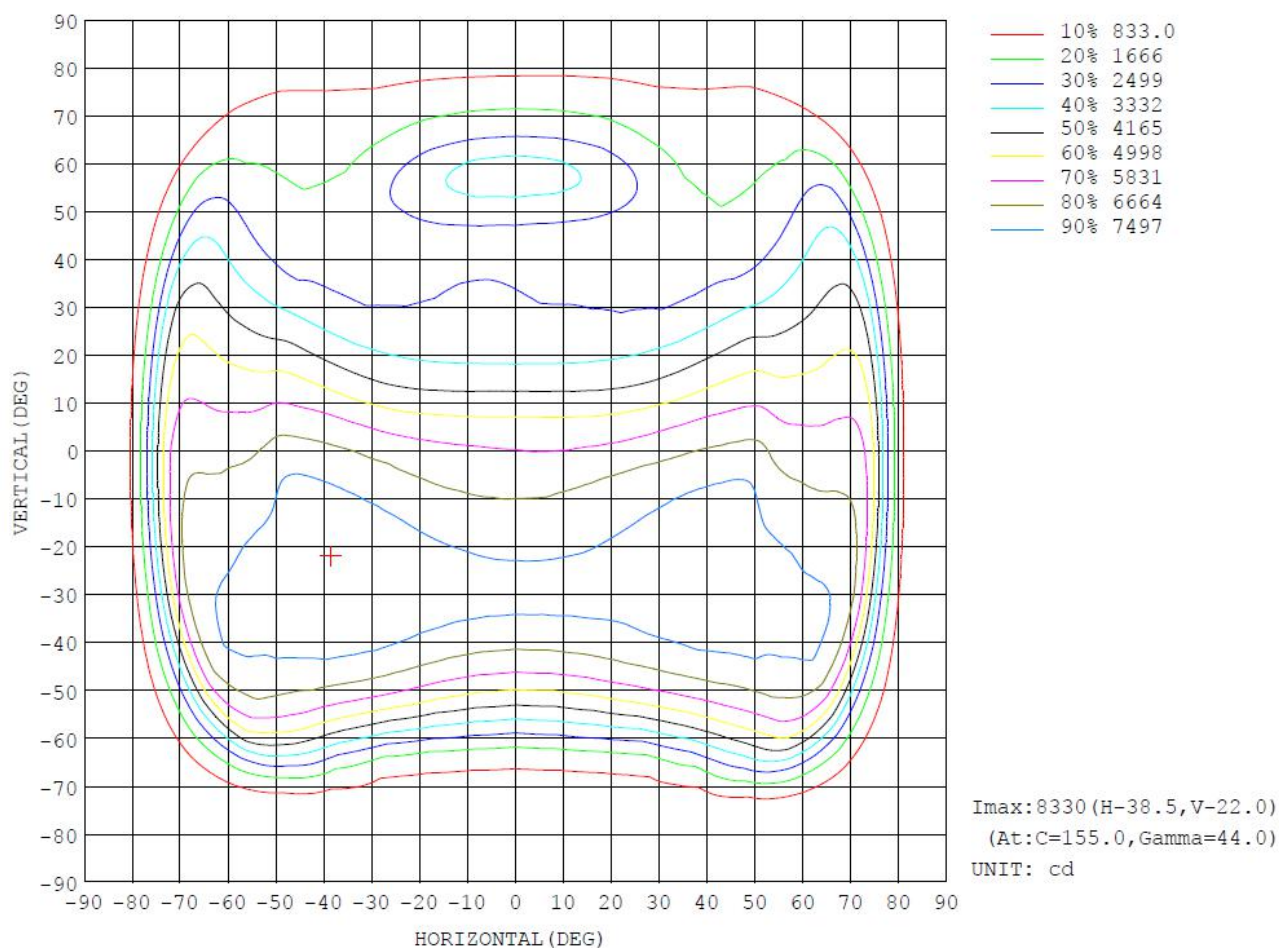
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5.4 Isocandela Diagram





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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	5864	5864	5864	5864	5864	5864	5864	5864	5864	5864	5864	5864	5864	5864	5864	5864	5864	5864	5864
5	5819	5860	5904	5963	6030	6095	6146	6181	6210	6234	6250	6261	6269	6280	6294	6306	6313	6315	6310
10	5848	5974	6105	6206	6286	6347	6399	6439	6476	6512	6546	6572	6596	6620	6640	6654	6661	6667	6672
15	5948	6130	6287	6416	6517	6598	6665	6722	6767	6806	6826	6843	6874	6905	6927	6942	6948	6957	6965
20	6063	6326	6508	6667	6780	6878	6945	7003	7046	7086	7121	7154	7180	7206	7233	7249	7258	7267	7275
25	6221	6535	6748	6940	7074	7189	7264	7330	7378	7416	7437	7469	7518	7560	7594	7626	7655	7667	7672
30	6384	6729	6998	7226	7376	7501	7589	7668	7738	7787	7818	7869	7935	7975	8003	8004	7999	7997	8004
35	6572	6965	7278	7536	7731	7884	7995	8042	8029	7988	7925	7887	7860	7770	7654	7543	7434	7398	7372
40	6744	7185	7559	7852	8073	8172	8175	8103	7979	7857	7734	7587	7431	7277	7125	7015	6915	6871	6833
45	6879	7389	7829	8096	8246	8268	8207	8090	7939	7747	7535	7280	7011	6768	6537	6363	6201	6133	6086
50	6932	7399	7770	7972	8068	8084	8062	7941	7770	7464	7114	6750	6385	6008	5635	5367	5121	5029	4952
55	6421	6912	7343	7657	7916	7967	7934	7708	7412	6944	6429	5886	5340	4863	4408	4102	3818	3702	3600
60	6249	6795	7303	7628	7892	7840	7693	7247	6718	6029	5312	4585	3869	3399	2974	2674	2394	2279	2173
65	6210	6781	7317	7592	7794	7541	7180	6459	5656	4726	3782	2957	2158	1771	1434	1249	1073	1019	966
70	6225	6827	7392	7512	7539	6971	6290	5245	4152	3072	2005	1429	911	787	704	650	600	578	559
75	4829	5231	5660	5695	5618	5044	4358	3283	2135	1428	767	595	477	408	345	310	278	266	254
80	1222	1378	1528	1546	1541	1329	1060	769	447	332	228	187	149	122	95.8	82.6	70.2	64.7	59.7
85	106	124	144	145	142	120	90.6	65.3	34.0	23.5	13.1	10.7	7.64	6.31	5.41	5.02	4.57	4.34	4.12
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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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)