



Test Report of ANSI/IES LM-79-19

Approved Method for Optical and Electrical Measurements of Solid-State Lighting Products

Report Number..... : N01A25071476L00501

Client..... : Shenzhen Fluence Lighting Technology Co., Ltd.

Address..... : B701, Building 1, Tian'an Digital City Innovation Park, No.475 Huangge North Road, Huanggekeng Community, Longcheng Street, Longgang District, Shenzhen.

Test Model..... : CP-SL01-0080-E02S

Brand Name..... : N/A

Testing Laboratory... : Guangdong GTG Testing Technology Co., Ltd.

Address..... : 1-2/F., Building A, and 1/F., Building B, No.11, & Room 102, Unit 1, and Room 10 1 Unit 2, Building 1, No.9, Zongbu 2nd Road, Songshan Lake High-Tech Industrial Development Zone, Dongguan, Guangdong, China

Testing Location..... : As above

Date of Receipt..... : Aug. 15, 2025

Date of Test : Aug. 21, 2025

Date of Report..... : Oct. 17, 2025

Tested by:
Sujay Zhou

Checked by:
Allen Chen



Sujay Zhou/ Test Engineer

Allen Chen/ Project Engineer

Sandy Chen Approver

Note 1: The test data was only valid for the test sample(s). This test report is prepared for the customer shown above and for the device described herein. It may not be duplicated or use in part without prior written consent from Guangdong GTG Testing Technology Co., Ltd. This report must not be used by the customer to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

Note 2: This report does not imply product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.

1. Product Description for Equipment under Test (EUT)

Representative (Tested) Model:	CP-SL01-0080-E02S
Manufacturer:	Shenzhen Fluence Lighting Technology Co., Ltd.
Product Type:	Smart Bright Solar All-in-One Street Light
Rated Voltage/Current:	DC18.9V, 3.18A
Rated Power:	60.2W
Rated Luminous Flux:	12000lm
Nominal CCT:	5700K

2. Standards Used

- ANSI/IES LM-79-19:APPROVED METHOD:OPTICAL AND ELECTRICAL MEASUREMENTS OF SOLID-STATE LIGHTING PRODUCTS
- IES TM-30-18 IES Method for Evaluating Light Source Color Rendition (This Method is not in Nvlap accreditation scope)

3. Test Equipment List

Test Equipment	Serial No.	Model No.	Calibration Due Date
Full-field Speed Goniophotometer	01-L-182	GO-R5000	2026/03/11
Digital Power Meter	01-L-161	PF2010	2026/03/11
AC Testing Power Source	01-L-162	DPS1060	2026/03/11
Total Spectral Radiant Flux Standard Lamp	01-L-165	D908S	2026/03/24
Integrating Sphere System	01-L-183	2M	2026/03/11
High Accuracy Array Spectroradio Meter	01-L-169	HAAS-3000	2026/03/11
Digital Power Meter	01-L-166	PF310	2026/03/11
AC Testing Power Source	01-L-168	DPS1010	2026/03/11
Standard Lamp	01-L-190	D204	2026/03/24

Statement of Traceability: Guangdong GTG Testing Technology Co., Ltd. attested that all calibration has been performed using suitable standards traceable to national primary standards and International System of Unit(SI).

4. Test Method

Requirements of Ambient Condition

Product was tested with no seasoning. All stabilization and measurements were made in compliance with ANSI/IES LM-79-19. The product was operated at rated voltage or at voltage required by manufacturer. The ambient temperature of the sample was maintained at $25^{\circ}\text{C}\pm 1.2^{\circ}\text{C}$ during measurement. And relative humidity between 10% and 65%.

Goniophotometer System

The sample was tested according to the ANSI/IES LM-79-19.

Photometric parameters were measured using a type C goniophotometer and software. 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. Photometric distance was more than five times of the Largest dimension of the test SSL product.

Integrating Sphere System

The sample was tested according to the ANSI/IES LM-79-19.

The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. Coating reflectance of the integrating sphere was 90% to 98%. Photometric measurement conditions was using 4π geometry. The self-absorption factor is applied in the final test result. 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.

Fidelity Index (R_f) and Gamut Index (R_g) Calculation

The R_f , R_g was calculated according to IES TM-30-18 by using calculation tools. The calculation was based on the measured SPD from 380nm to 780nm with 1nm intervals. All the colors in this report is for reference only.

5. Integrating Sphere Test Results

5.1 Test Data

Test Ambient Temperature (Integrating Sphere Internal Temperature)	25.0°C	Test Orientation	Downward
Operate Time(Min.)	60	Stabilization Time(Min.)	30

Optical and Electrical Measurement Result

Mode	Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)	SDCM
5700K	18.88	/	3.18	60.04	1	12831	213.71	2.3

Mode	CCT (K)	Ra	R9	x	y	u'	v'	Duv
5700K	5523	71.4	-35	0.332	0.346	0.2047	0.4799	2.72e-003

5.2 Color Rendering Index

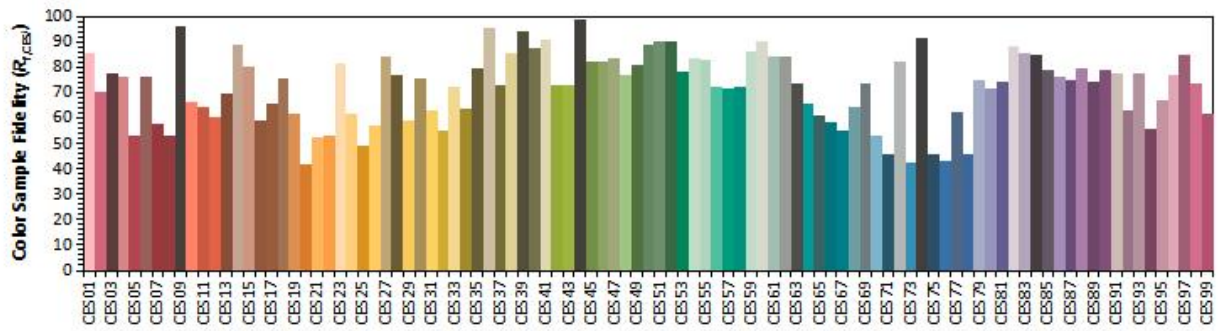
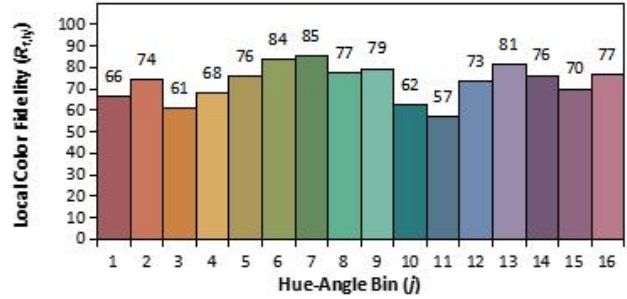
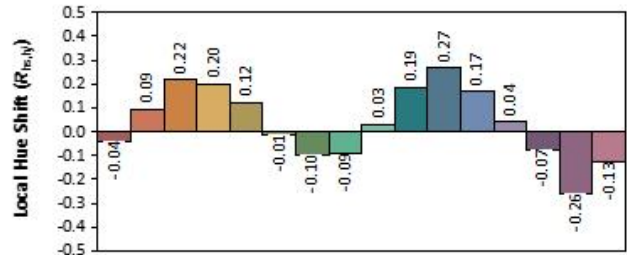
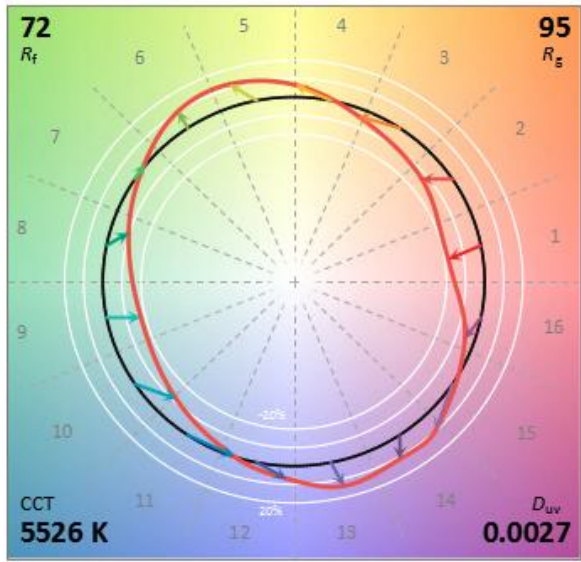
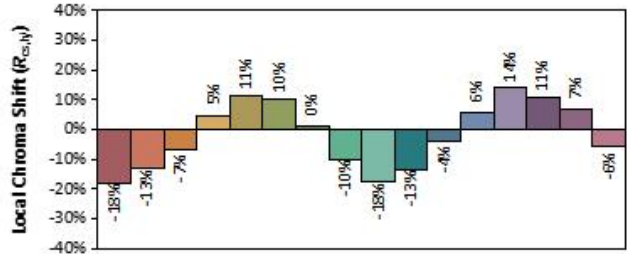
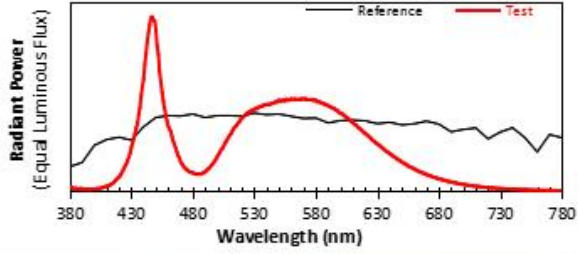
Ra 71.4				
R1 69	R2 75	R3 79	R4 73	R5 71
R6 67	R7 80	R8 57	R9 -35	R10 41
R11 71	R12 44	R13 69	R14 88	R15 63

***5.3 ANSI/IES TM-30-18 Color Rendition Report**

ANSI/IES TM-30-18 Color Rendition Report

Source:
Date: 2025/8/21

Manufacturer: Shenzhen Fluence Lighting Technology Co., Ltd.
Model: CP-SL01-0080-E02S



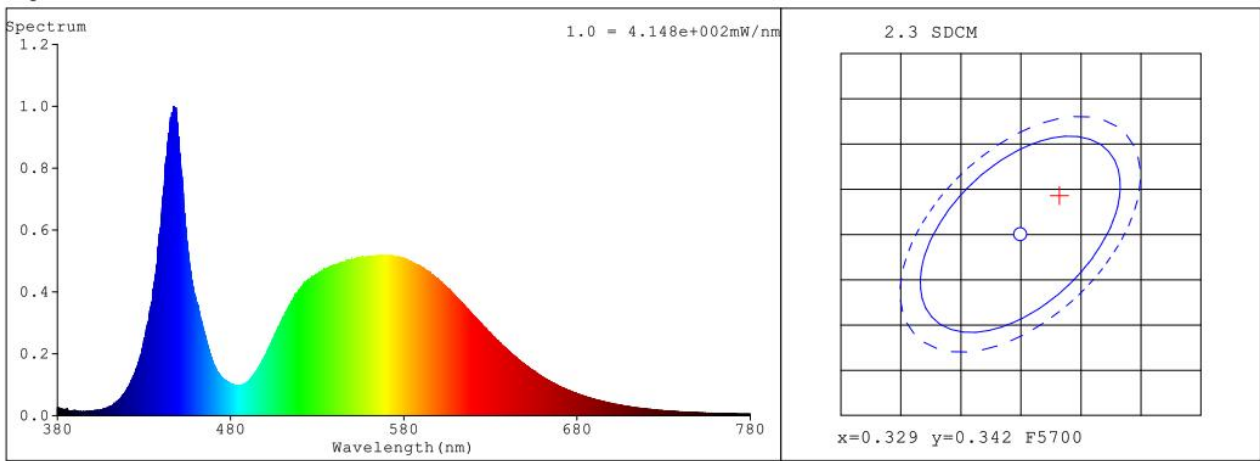
Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

x **0.3319**
 y **0.3458**
 u' **0.2047**
 v' **0.4798**

CIE 13.3-1995 (CRI)
 R_a 71
 R_g -35

Colors are for visual orientation purposes only. Created with the ANSI/IES TM-30-18 Calculator Version 2.00.

5.4 Relative Spectral Power Distribution



nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0245	414	0.04	448	0.9563	482	0.0989	516	0.3735
381	0.0246	415	0.0454	449	0.9521	483	0.0954	517	0.3833
382	0.0199	416	0.0527	450	0.8981	484	0.0981	518	0.3898
383	0.0165	417	0.0589	451	0.8115	485	0.0976	519	0.4017
384	0.0131	418	0.0683	452	0.7653	486	0.0961	520	0.41
385	0.0179	419	0.0738	453	0.6677	487	0.0995	521	0.4151
386	0.0135	420	0.0825	454	0.6109	488	0.1018	522	0.4218
387	0.0144	421	0.0865	455	0.5551	489	0.1049	523	0.4295
388	0.0144	422	0.1023	456	0.5059	490	0.1085	524	0.4359
389	0.0167	423	0.1137	457	0.4628	491	0.1144	525	0.4405
390	0.0149	424	0.1283	458	0.4262	492	0.123	526	0.4417
391	0.0145	425	0.1417	459	0.394	493	0.1266	527	0.45
392	0.0125	426	0.1537	460	0.365	494	0.135	528	0.4495
393	0.0117	427	0.1739	461	0.3485	495	0.144	529	0.4565
394	0.0119	428	0.1921	462	0.3362	496	0.1531	530	0.4572
395	0.0137	429	0.2137	463	0.307	497	0.1612	531	0.4624
396	0.0109	430	0.2458	464	0.2819	498	0.171	532	0.462
397	0.0118	431	0.2665	465	0.264	499	0.1842	533	0.4663
398	0.0126	432	0.295	466	0.2425	500	0.1953	534	0.4719
399	0.0131	433	0.3233	467	0.2224	501	0.2062	535	0.4737
400	0.0138	434	0.354	468	0.1988	502	0.2192	536	0.4772
401	0.0135	435	0.3774	469	0.1876	503	0.2319	537	0.4778
402	0.0165	436	0.4299	470	0.167	504	0.2398	538	0.4835
403	0.0158	437	0.4679	471	0.1556	505	0.2512	539	0.4836
404	0.0161	438	0.5335	472	0.1446	506	0.2682	540	0.4863
405	0.0172	439	0.5856	473	0.1343	507	0.2774	541	0.4858
406	0.0194	440	0.6265	474	0.1277	508	0.2904	542	0.4838
407	0.0223	441	0.7092	475	0.1208	509	0.301	543	0.4887
408	0.0228	442	0.7703	476	0.1171	510	0.3142	544	0.4905
409	0.0273	443	0.8369	477	0.1106	511	0.3203	545	0.4919
410	0.0291	444	0.8888	478	0.108	512	0.3367	546	0.4945
411	0.031	445	0.9308	479	0.1063	513	0.3471	547	0.4981
412	0.0335	446	0.9688	480	0.1027	514	0.3566	548	0.4995
413	0.0381	447	0.9746	481	0.1011	515	0.3643	549	0.5009

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
550	0.5095	599	0.4406	648	0.173	697	0.042	746	0.0102
551	0.5036	600	0.437	649	0.1683	698	0.0412	747	0.0097
552	0.5033	601	0.4334	650	0.1645	699	0.0399	748	0.0094
553	0.5105	602	0.4313	651	0.16	700	0.0387	749	0.0091
554	0.5095	603	0.4232	652	0.1554	701	0.0376	750	0.0093
555	0.5056	604	0.4194	653	0.1516	702	0.0365	751	0.0088
556	0.5149	605	0.4122	654	0.1477	703	0.0352	752	0.0084
557	0.5111	606	0.4076	655	0.1421	704	0.0341	753	0.0082
558	0.5092	607	0.4035	656	0.139	705	0.0332	754	0.0083
559	0.5138	608	0.3944	657	0.1359	706	0.0325	755	0.0077
560	0.5156	609	0.3908	658	0.1326	707	0.0309	756	0.0075
561	0.5149	610	0.385	659	0.1296	708	0.0301	757	0.0075
562	0.5146	611	0.3778	660	0.1258	709	0.0294	758	0.0076
563	0.5153	612	0.3724	661	0.1221	710	0.0288	759	0.0074
564	0.5138	613	0.3689	662	0.1176	711	0.0279	760	0.007
565	0.5141	614	0.3583	663	0.1141	712	0.027	761	0.0067
566	0.5142	615	0.3553	664	0.1121	713	0.0263	762	0.0067
567	0.5126	616	0.3483	665	0.108	714	0.0252	763	0.0062
568	0.5168	617	0.3431	666	0.1052	715	0.0246	764	0.0063
569	0.5145	618	0.3358	667	0.1031	716	0.0239	765	0.0064
570	0.5152	619	0.3302	668	0.1016	717	0.0231	766	0.0058
571	0.5169	620	0.3234	669	0.0966	718	0.0227	767	0.0058
572	0.5164	621	0.3196	670	0.0944	719	0.0222	768	0.0056
573	0.5121	622	0.3133	671	0.0912	720	0.0215	769	0.0056
574	0.5118	623	0.3066	672	0.0891	721	0.0202	770	0.0054
575	0.5117	624	0.3014	673	0.0867	722	0.0198	771	0.0054
576	0.5111	625	0.2931	674	0.0843	723	0.0194	772	0.0053
577	0.5141	626	0.2879	675	0.0817	724	0.0188	773	0.0049
578	0.5088	627	0.2819	676	0.0794	725	0.0182	774	0.0047
579	0.5096	628	0.2771	677	0.077	726	0.0174	775	0.005
580	0.5092	629	0.2699	678	0.0747	727	0.0169	776	0.0047
581	0.5004	630	0.2659	679	0.0731	728	0.0167	777	0.0046
582	0.501	631	0.2596	680	0.0705	729	0.0165	778	0.0047
583	0.4993	632	0.2554	681	0.0684	730	0.0156	779	0.0045
584	0.4961	633	0.2486	682	0.0668	731	0.0157	780	0.0045
585	0.4937	634	0.2427	683	0.0652	732	0.0154		
586	0.4894	635	0.2366	684	0.0629	733	0.0146		
587	0.489	636	0.2331	685	0.0616	734	0.0139		
588	0.4845	637	0.2254	686	0.0591	735	0.0135		
589	0.4822	638	0.2213	687	0.0576	736	0.0135		
590	0.4795	639	0.2171	688	0.0549	737	0.0129		
591	0.4744	640	0.2109	689	0.0547	738	0.0124		
592	0.4719	641	0.2071	690	0.0527	739	0.0121		
593	0.4678	642	0.201	691	0.051	740	0.012		
594	0.4645	643	0.1957	692	0.0494	741	0.0116		
595	0.4635	644	0.192	693	0.0478	742	0.0109		
596	0.4539	645	0.1864	694	0.0469	743	0.0107		
597	0.454	646	0.1804	695	0.0445	744	0.0109		
598	0.4475	647	0.1779	696	0.0435	745	0.0101		

6. Goniophotometer Test Results

6.1 Test Data

Test Ambient Temperature	25.2°C	Test Orientation	Downward
Operate Time(Min.)	90	Stabilization Time(Min.)	30

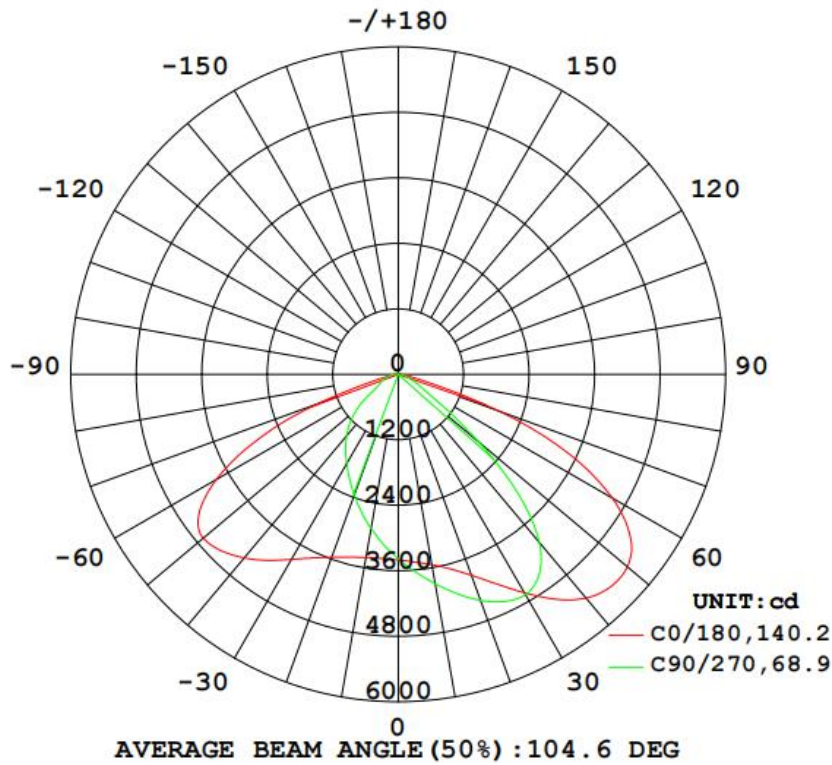
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current(A)	Power Factor	Power(W)
18.90	/	3.180	1	60.10

Optical Measurement

Luminous Flux (lm)	Efficacy(lm/W)	Imax (cd)	η up(%)	η down(%)
12828	213.44	7192	0.7	99.3

6.2 Luminous Intensity Distribution



6.3 Zonal Flux Diagram

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	3541	3853	3894	3691	3409	3013	2869	3048	0- 10	324.1	324.1	2.53,2.53
20	3917	4539	4407	4200	3566	2658	2358	2778	10- 20	987.0	1311	10.2,10.2
30	4619	5534	4661	4932	3915	2301	1892	2525	20- 30	1702	3013	23.5,23.5
40	5351	6207	4027	5589	4391	1925	1476	2155	30- 40	2433	5446	42.5,42.5
50	5486	5551	1926	5343	4669	1512	982.4	1666	40- 50	2862	8308	64.8,64.8
60	4529	2486	524.1	2844	3845	892.0	433.6	956.8	50- 60	2516	10824	84.4,84.4
70	1968	481.1	231.9	469.5	1543	342.5	297.3	410.0	60- 70	1426	12251	95.5,95.5
80	193.9	148.4	117.0	136.1	155.6	132.9	176.5	152.7	70- 80	403.1	12654	98.6,98.6
90	23.41	22.86	23.97	21.28	21.85	21.91	36.50	26.72	80- 90	88.91	12743	99.3,99.3
100	24.69	17.82	21.53	16.07	21.78	16.66	22.31	18.24	90-100	23.28	12766	99.5,99.5
110	25.66	13.20	15.97	12.26	21.43	13.23	16.52	14.33	100-110	19.52	12786	99.7,99.7
120	9.220	11.13	16.10	10.45	8.245	12.09	17.12	12.39	110-120	13.62	12799	99.8,99.8
130	5.917	9.116	11.60	8.830	5.643	10.56	13.72	10.09	120-130	9.546	12809	99.9,99.9
140	5.254	8.276	9.877	7.797	5.924	10.31	12.63	9.712	130-140	7.031	12816	99.9,99.9
150	4.482	7.884	9.027	7.086	6.075	9.496	12.74	9.883	140-150	5.434	12821	99.9,99.9
160	4.765	7.821	8.618	7.037	5.990	8.375	11.07	9.817	150-160	3.845	12825	100,100
170	5.529	7.676	8.123	6.916	6.144	7.369	9.789	9.073	160-170	2.222	12827	100,100
180	5.940	6.413	6.812	5.663	5.928	5.795	7.055	6.219	170-180	0.6752	12828	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

6.4 Luminous Distribution Intensity Data

Table--1

UNIT: cd

C (DEG) γ (DEG)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
0	3402	3396	3390	3384	3376	3372	3335	3349	3402	3396	3390	3384	3376	3372	3335	3349			
5	3451	3537	3602	3634	3631	3598	3498	3427	3389	3285	3199	3144	3128	3155	3191	3301			
10	3541	3727	3853	3904	3894	3841	3691	3542	3409	3197	3013	2899	2869	2932	3048	3280			
15	3689	3994	4155	4189	4158	4094	3921	3708	3467	3126	2833	2660	2615	2707	2910	3282			
20	3917	4366	4539	4492	4407	4356	4200	3936	3566	3062	2658	2418	2358	2487	2778	3320			
25	4231	4860	5017	4788	4591	4603	4539	4244	3711	3009	2480	2186	2113	2269	2657	3383			
30	4619	5471	5534	5000	4661	4774	4932	4653	3915	2969	2301	1971	1892	2065	2525	3453			
35	5030	6110	5968	5006	4496	4769	5313	5145	4161	2917	2114	1767	1686	1866	2355	3475			
40	5351	6675	6207	4715	4027	4493	5589	5666	4391	2832	1925	1558	1476	1658	2155	3435			
45	5503	7058	6123	3992	3140	3825	5644	6172	4577	2733	1735	1336	1249	1431	1933	3331			
50	5486	7188	5551	2748	1926	2652	5343	6574	4669	2587	1512	1085	982	1169	1666	3094			
55	5195	6885	4290	1417	930	1361	4439	6625	4460	2306	1228	805	648	887	1332	2649			
60	4529	5857	2486	664	524	618	2844	5945	3845	1774	892	494	434	564	957	1993			
65	3462	4086	1035	454	347	417	1171	4387	2862	1157	564	350	359	380	628	1281			
70	1968	2159	481	278	232	264	470	2385	1543	627	342	280	297	305	410	708			
75	541	602	286	183	169	169	283	696	446	308	222	217	234	231	279	379			
80	194	217	148	119	117	106	136	211	156	127	133	158	176	167	153	164			
85	83.0	94.5	72.5	65.4	64.9	58.1	68.8	79.8	68.1	56.1	68.9	100	115	107	71.0	65.8			
90	23.4	23.6	22.9	25.4	24.0	23.2	21.3	23.1	21.9	17.5	21.9	40.6	36.5	41.8	26.7	21.2			
95	21.6	24.1	20.2	22.4	22.5	20.5	17.2	21.4	19.6	14.3	18.5	23.6	24.8	24.4	20.3	20.9			
100	24.7	24.7	17.8	20.4	21.5	18.8	16.1	23.8	21.8	13.4	16.7	20.8	22.3	21.3	18.2	19.9			
105	29.3	24.3	14.9	17.1	19.9	15.8	13.8	26.1	21.6	13.3	14.7	17.8	19.9	18.1	16.4	18.2			
110	25.7	18.0	13.2	14.7	16.0	13.7	12.3	20.2	21.4	12.4	13.2	15.4	16.5	15.5	14.3	14.6			
115	14.1	11.1	12.8	14.5	14.6	14.0	11.9	11.8	11.7	10.3	13.4	15.4	16.1	15.2	13.9	10.8			
120	9.22	9.33	11.1	14.9	16.1	14.0	10.5	8.78	8.25	9.56	12.1	16.8	17.1	16.3	12.4	9.24			
125	6.57	7.80	9.96	12.3	13.6	11.6	9.67	7.69	6.27	8.25	11.1	13.9	15.6	13.5	10.9	7.80			
130	5.92	7.11	9.12	10.9	11.6	10.3	8.83	7.33	5.64	7.70	10.6	12.9	13.7	12.3	10.1	7.25			
135	5.59	6.81	8.56	10.3	10.6	9.67	8.35	7.14	5.67	7.78	10.4	12.3	12.7	11.7	9.62	7.30			
140	5.25	6.40	8.28	9.67	9.88	9.00	7.80	6.89	5.92	8.06	10.3	12.3	12.6	11.6	9.71	7.40			
145	4.54	6.15	8.08	9.29	9.39	8.58	7.38	6.43	6.02	8.23	9.96	12.1	12.8	11.7	9.84	7.72			
150	4.48	6.12	7.88	8.95	9.03	8.26	7.09	6.23	6.07	8.01	9.50	11.7	12.7	11.8	9.88	8.05			
155	4.60	6.23	7.82	8.83	8.80	8.17	7.06	6.12	5.95	7.50	8.99	10.9	12.0	11.5	9.91	8.31			
160	4.76	6.35	7.82	8.75	8.62	8.11	7.04	6.11	5.99	6.91	8.37	10.1	11.1	11.0	9.82	8.34			
165	5.12	6.32	7.79	8.65	8.39	7.89	6.92	6.09	6.05	6.04	7.80	9.36	10.4	10.3	9.52	8.21			
170	5.53	5.59	7.68	8.52	8.12	7.68	6.92	5.78	6.14	6.13	7.37	8.87	9.79	9.66	9.07	7.96			
175	5.76	5.68	6.37	7.68	7.45	7.00	6.11	5.33	6.12	6.11	6.37	7.60	8.87	8.48	7.69	6.60			
180	5.94	5.85	6.41	7.10	6.81	6.18	5.66	5.48	5.93	5.92	5.80	6.44	7.06	6.82	6.22	5.69			

7. Photo of Sample



Figure 1 Overview



Figure 2 Overview

---End of Report---