Test Report of ANSI/IES LM-79-19

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

Report Number.....	:	N01A25071476L00401
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-SL01-0055-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 101 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:	**Checked by:**	**Approved by:**
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-SL01-0055-E02S
Manufacturer:	Shenzhen Fluence Lighting Technology Co., Ltd.
Product Type:	Smart Bright Solar All-in-One Street Light
Rated Voltage/Current:	DC18.9V, 2.25A
Rated Power:	42.6W
Rated Luminous Flux:	8500lm
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°C±1.2°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 paramters 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℃	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	19.39	/	2.25	43.63	1	9237.4	211.73	2.5

Mode	CCT (K)	Ra	R9	x	y	u'	v'	Duv
5700K	5525	71.5	-35	0.3319	0.3467	0.2044	0.4803	3.08e-003

5.2 Color Rendering Index

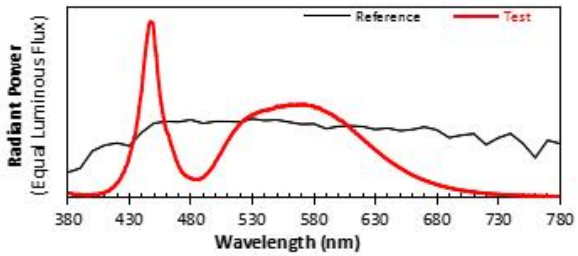
Ra
71.5

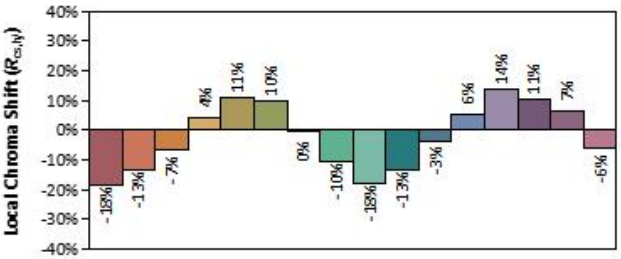
R1	R2	R3	R4	R5
69	75	80	73	71
R6	R7	R8	R9	R10
67	80	57	-35	42
R11	R12	R13	R14	R15
71	43	69	89	63

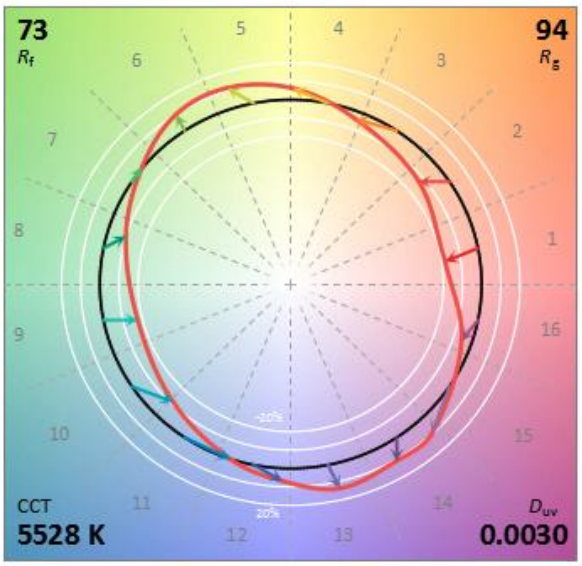
*5.3 ANSI/IES TM-30-18 Color Rendition Report

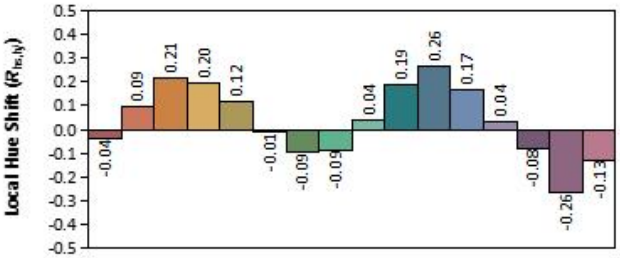
ANSI/IES TM-30-18 Color Rendition Report

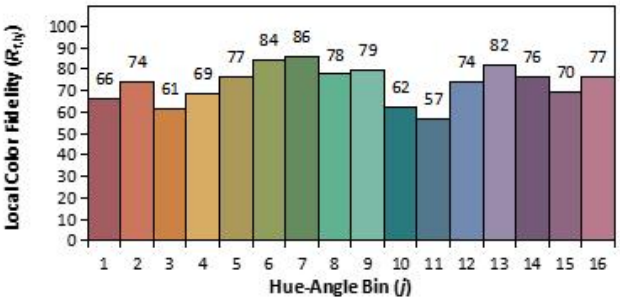
Source:		**Manufacturer:**	Shenzhen Fluence Lighting Technology Co., Ltd.
Date:	2025/8/21	**Model:**	CP-SL01-0055-E02S

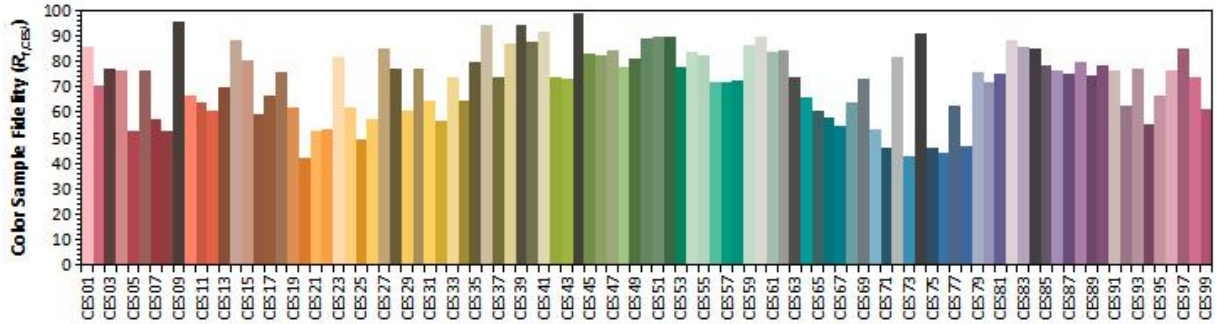












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

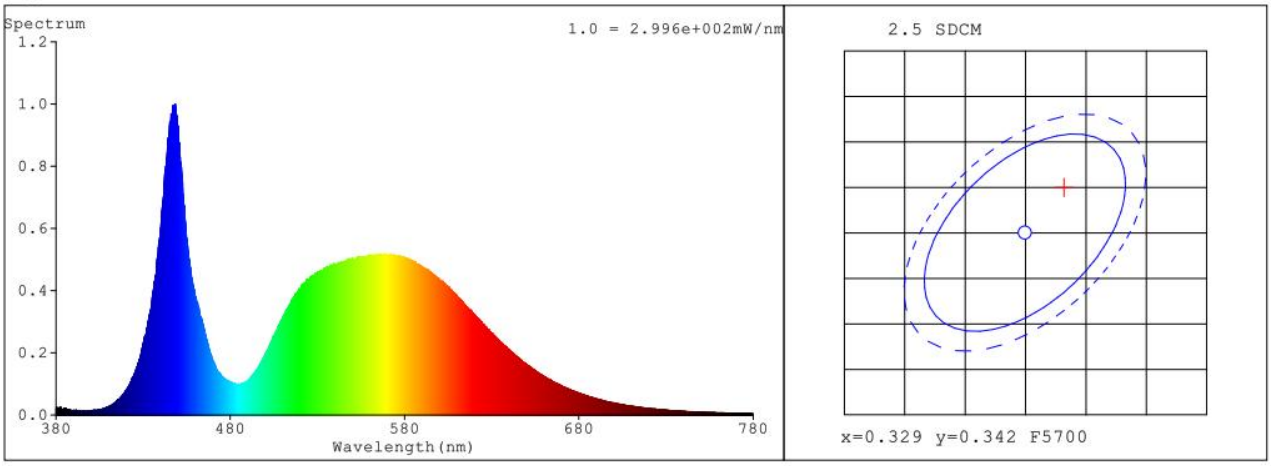
x	**0.3318**
y	**0.3465**
u'	**0.2044**
v'	**0.4802**

CIE 13.3-1995 (CRI)

R_a	71
R_9	-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	0.0204	414	0.0374	448	0.9742	482	0.0998	516	0.3733
381	0.0235	415	0.0456	449	0.9689	483	0.0991	517	0.3813
382	0.0225	416	0.0497	450	0.9213	484	0.0984	518	0.3918
383	0.0195	417	0.0543	451	0.8339	485	0.1001	519	0.3999
384	0.0164	418	0.0617	452	0.7889	486	0.0973	520	0.4048
385	0.0146	419	0.0703	453	0.6962	487	0.1001	521	0.4173
386	0.015	420	0.0789	454	0.6311	488	0.1038	522	0.4209
387	0.0159	421	0.0843	455	0.5655	489	0.1049	523	0.4246
388	0.0137	422	0.0955	456	0.5208	490	0.1094	524	0.4348
389	0.0156	423	0.1052	457	0.4742	491	0.1147	525	0.4373
390	0.0149	424	0.122	458	0.4382	492	0.1242	526	0.4423
391	0.0128	425	0.1324	459	0.4019	493	0.1281	527	0.4474
392	0.0138	426	0.1447	460	0.3738	494	0.1365	528	0.4471
393	0.0107	427	0.1673	461	0.3557	495	0.1441	529	0.4565
394	0.0129	428	0.1769	462	0.3448	496	0.1536	530	0.4573
395	0.0111	429	0.1985	463	0.3151	497	0.1616	531	0.4614
396	0.0108	430	0.2281	464	0.291	498	0.1715	532	0.4597
397	0.0111	431	0.2497	465	0.2734	499	0.1829	533	0.4655
398	0.0129	432	0.2762	466	0.2508	500	0.1969	534	0.4712
399	0.0116	433	0.3042	467	0.2315	501	0.2063	535	0.4726
400	0.0147	434	0.3333	468	0.2068	502	0.218	536	0.476
401	0.0137	435	0.3533	469	0.1948	503	0.2315	537	0.4767
402	0.0161	436	0.4053	470	0.1749	504	0.2403	538	0.4823
403	0.0134	437	0.4409	471	0.1625	505	0.2523	539	0.4813
404	0.0148	438	0.4979	472	0.1482	506	0.2657	540	0.4839
405	0.0172	439	0.5481	473	0.1394	507	0.2775	541	0.4846
406	0.0182	440	0.5904	474	0.1314	508	0.2904	542	0.4842
407	0.0204	441	0.6682	475	0.1229	509	0.3009	543	0.4888
408	0.0203	442	0.7388	476	0.1199	510	0.3143	544	0.487
409	0.0235	443	0.8006	477	0.1146	511	0.3222	545	0.4897
410	0.0257	444	0.8601	478	0.1107	512	0.3352	546	0.4899
411	0.0302	445	0.908	479	0.1089	513	0.3453	547	0.4945
412	0.0318	446	0.9571	480	0.1052	514	0.3548	548	0.4956
413	0.0349	447	0.9749	481	0.1022	515	0.3662	549	0.5007

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
550	0.5063	599	0.4383	648	0.171	697	0.0421	746	0.0098
551	0.5008	600	0.4322	649	0.1675	698	0.0405	747	0.0096
552	0.5004	601	0.4296	650	0.163	699	0.0391	748	0.0091
553	0.5079	602	0.4289	651	0.1593	700	0.0378	749	0.0089
554	0.5066	603	0.4245	652	0.1547	701	0.0371	750	0.0087
555	0.5029	604	0.4167	653	0.1519	702	0.036	751	0.0089
556	0.5093	605	0.4134	654	0.1463	703	0.035	752	0.0086
557	0.508	606	0.4054	655	0.1428	704	0.0337	753	0.0081
558	0.5085	607	0.4011	656	0.1382	705	0.0334	754	0.0077
559	0.5105	608	0.3942	657	0.1346	706	0.0317	755	0.0077
560	0.5161	609	0.3901	658	0.1305	707	0.0309	756	0.0076
561	0.5115	610	0.3821	659	0.1273	708	0.0297	757	0.0073
562	0.5143	611	0.375	660	0.1242	709	0.0295	758	0.0072
563	0.5143	612	0.3698	661	0.1198	710	0.0285	759	0.0068
564	0.511	613	0.3661	662	0.1175	711	0.0278	760	0.0068
565	0.5129	614	0.3564	663	0.1136	712	0.0269	761	0.0067
566	0.515	615	0.3521	664	0.1118	713	0.0249	762	0.0065
567	0.5112	616	0.3471	665	0.1075	714	0.0248	763	0.0065
568	0.5168	617	0.3402	666	0.1048	715	0.0244	764	0.0063
569	0.515	618	0.3346	667	0.1026	716	0.0235	765	0.0061
570	0.5139	619	0.3294	668	0.0993	717	0.0235	766	0.006
571	0.5139	620	0.3223	669	0.0969	718	0.0228	767	0.0056
572	0.517	621	0.3173	670	0.0946	719	0.0213	768	0.0057
573	0.5126	622	0.3104	671	0.0902	720	0.0206	769	0.0058
574	0.5149	623	0.3043	672	0.0889	721	0.0205	770	0.0056
575	0.5105	624	0.3002	673	0.0861	722	0.0196	771	0.0054
576	0.5107	625	0.2904	674	0.084	723	0.0191	772	0.0053
577	0.5098	626	0.2865	675	0.0819	724	0.0188	773	0.0053
578	0.5073	627	0.2809	676	0.0787	725	0.018	774	0.0048
579	0.5075	628	0.2755	677	0.0769	726	0.017	775	0.0047
580	0.5072	629	0.2686	678	0.0751	727	0.017	776	0.0045
581	0.497	630	0.2632	679	0.0722	728	0.0166	777	0.0048
582	0.5014	631	0.2586	680	0.0701	729	0.0166	778	0.0045
583	0.4976	632	0.2531	681	0.0687	730	0.0154	779	0.0044
584	0.495	633	0.2467	682	0.0654	731	0.0151	780	0.0044
585	0.4962	634	0.2413	683	0.0643	732	0.0146		
586	0.4879	635	0.2356	684	0.0623	733	0.0144		
587	0.4848	636	0.23	685	0.0607	734	0.0136		
588	0.482	637	0.2238	686	0.0586	735	0.0136		
589	0.4786	638	0.2193	687	0.0573	736	0.0131		
590	0.4757	639	0.2141	688	0.0554	737	0.0127		
591	0.4727	640	0.2095	689	0.0534	738	0.0126		
592	0.4684	641	0.2034	690	0.0521	739	0.0123		
593	0.4654	642	0.2006	691	0.0507	740	0.0111		
594	0.463	643	0.1945	692	0.0489	741	0.0112		
595	0.4599	644	0.1895	693	0.0477	742	0.0109		
596	0.4506	645	0.185	694	0.0458	743	0.0105		
597	0.4501	646	0.1806	695	0.0443	744	0.01		
598	0.4471	647	0.1765	696	0.0431	745	0.0103		

6. Goniophotometer Test Results

6.1 Test Data

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

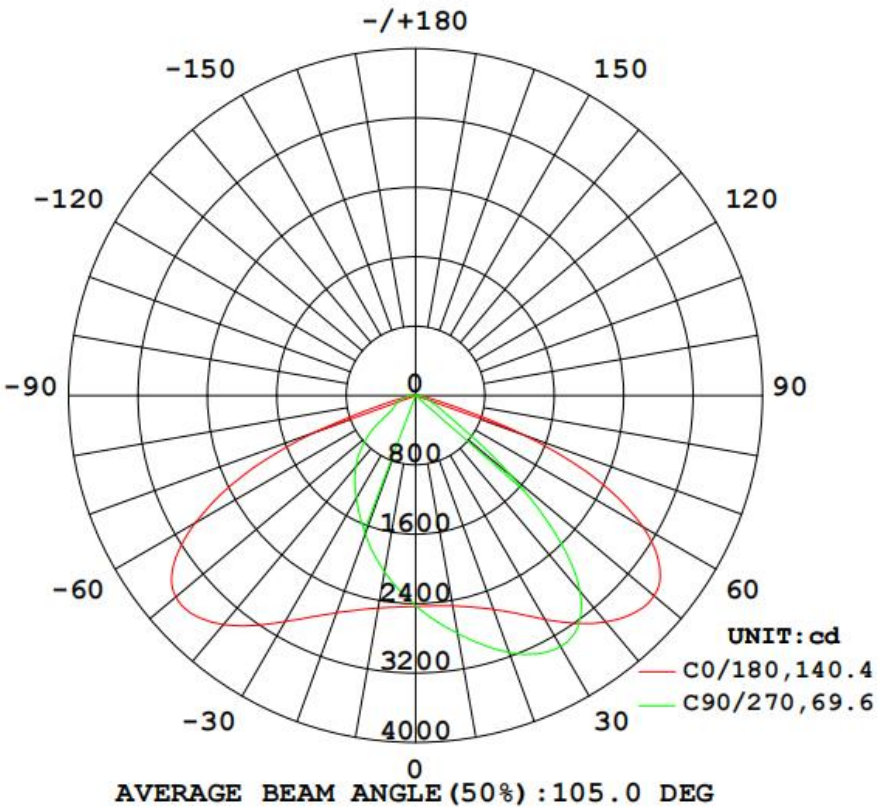
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current(A)	Power Factor	Power(W)
19.38	/	2.250	1	43.60

Optical Measurement

Luminous Flux (lm)	Efficacy(lm/W)	Imax (cd)	ŋ up(%)	ŋ down(%)
9231.13	211.70	5045	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	2463	2704	2784	2715	2487	2197	2065	2173	0- 10	232.5	232.5	2.52,2.52
20	2625	3099	3152	3138	2666	1970	1701	1947	10- 20	705.9	938.4	10.2,10.2
30	2979	3706	3342	3752	3008	1740	1369	1729	20- 30	1212	2151	23.3,23.3
40	3407	4232	2951	4270	3447	1485	1075	1470	30- 40	1739	3889	42.1,42.1
50	3590	3978	1438	4014	3610	1185	706.4	1150	40- 50	2070	5959	64.6,64.6
60	3022	1900	374.8	1899	2933	692.7	308.9	672.2	50- 60	1829	7788	84.4,84.4
70	1310	329.3	167.7	337.8	1224	262.0	214.3	290.0	60- 70	1028	8816	95.5,95.5
80	129.2	97.62	83.56	96.32	120.4	102.5	127.5	114.1	70- 80	290.8	9107	98.7,98.7
90	15.17	14.40	16.36	14.45	16.66	18.57	30.66	20.98	80- 90	63.32	9170	99.3,99.3
100	16.79	11.83	14.20	11.38	18.18	13.28	17.13	14.48	90-100	16.97	9187	99.5,99.5
110	17.92	9.027	11.23	8.466	18.10	10.34	13.43	11.05	100-110	14.36	9202	99.7,99.7
120	6.520	7.768	12.07	7.367	5.535	8.934	13.29	9.527	110-120	10.10	9212	99.8,99.8
130	4.238	6.220	8.117	5.903	3.632	7.409	10.12	7.141	120-130	6.866	9218	99.9,99.9
140	3.745	5.398	6.734	4.999	3.642	6.702	8.968	6.562	130-140	4.811	9223	99.9,99.9
150	3.101	4.758	5.892	4.167	3.834	6.127	8.393	6.587	140-150	3.525	9227	100,100
160	3.291	4.854	5.221	4.188	4.003	5.125	7.346	6.624	150-160	2.433	9229	100,100
170	3.792	4.830	5.102	4.125	4.220	4.691	6.399	5.856	160-170	1.418	9231	100,100
180	4.165	4.679	4.793	3.929	4.156	4.128	5.164	4.392	170-180	0.4484	9231	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	2431	2433	2430	2429	2424	2421	2417	2415	2431	2433	2430	2429	2424	2421	2417	2415			
5	2434	2504	2556	2590	2602	2590	2555	2500	2448	2378	2312	2266	2245	2255	2291	2349			
10	2463	2602	2704	2762	2784	2770	2715	2612	2487	2337	2197	2102	2065	2090	2173	2301			
15	2525	2738	2876	2946	2973	2965	2905	2760	2558	2309	2084	1938	1883	1926	2060	2267			
20	2625	2933	3099	3141	3152	3168	3138	2969	2666	2290	1970	1772	1701	1761	1947	2250			
25	2774	3202	3378	3331	3286	3363	3423	3248	2813	2284	1856	1610	1527	1598	1835	2249			
30	2979	3559	3706	3478	3342	3507	3752	3605	3008	2284	1740	1459	1369	1447	1729	2264			
35	3206	3976	4022	3509	3258	3534	4061	4019	3235	2275	1616	1315	1224	1305	1609	2256			
40	3407	4391	4232	3341	2951	3365	4270	4435	3447	2234	1485	1168	1075	1162	1470	2201			
45	3551	4749	4253	2883	2327	2899	4297	4805	3589	2179	1350	1005	907	1001	1323	2132			
50	3590	4987	3978	2018	1438	2031	4014	5031	3610	2065	1185	816	706	811	1150	2013			
55	3434	4937	3223	1041	678	1050	3251	4941	3409	1821	964	603	450	604	931	1768			
60	3022	4364	1900	461	375	464	1899	4294	2933	1392	693	362	309	368	672	1367			
65	2328	3155	681	315	250	316	671	3034	2219	911	432	258	256	261	440	903			
70	1310	1703	329	195	168	198	338	1576	1224	498	262	207	214	211	290	508			
75	361	465	195	128	122	129	201	440	377	244	171	160	168	161	197	278			
80	129	145	97.6	81.3	83.6	80.8	96.3	143	120	102	103	116	127	117	114	118			
85	53.6	57.2	46.2	43.1	44.9	43.0	45.4	54.6	52.5	45.3	53.2	74.9	84.1	76.2	55.8	49.1			
90	15.2	15.1	14.4	16.9	16.4	17.3	14.4	15.9	16.7	14.4	18.6	31.8	30.7	33.3	21.0	16.8			
95	15.5	17.2	13.0	14.4	15.1	14.5	12.4	15.8	14.9	12.8	14.2	18.6	18.5	19.0	15.5	14.4			
100	16.8	17.6	11.8	13.3	14.2	13.4	11.4	18.4	18.2	12.9	13.3	16.5	17.1	17.0	14.5	13.9			
105	19.6	16.3	10.3	11.4	13.6	11.5	9.86	16.1	19.6	11.5	11.5	13.9	15.4	14.0	12.4	12.8			
110	17.9	13.4	9.03	10.1	11.2	10.1	8.47	12.4	18.1	9.55	10.3	12.6	13.4	12.7	11.0	10.2			
115	10.2	8.10	8.61	10.1	10.8	10.0	8.28	7.19	9.58	7.40	10.0	12.3	12.8	12.2	11.2	7.93			
120	6.52	6.55	7.77	10.7	12.1	10.7	7.37	6.37	5.53	6.29	8.93	12.9	13.3	12.8	9.53	6.57			
125	4.69	5.21	6.95	8.61	9.61	8.42	6.60	5.17	4.24	5.40	7.99	10.6	12.1	10.4	8.34	5.50			
130	4.24	4.62	6.22	7.63	8.12	7.35	5.90	4.61	3.63	5.12	7.41	9.48	10.1	9.23	7.14	5.08			
135	4.01	4.33	5.73	7.07	7.32	6.65	5.41	4.33	3.62	5.15	6.96	9.09	9.46	8.70	6.38	5.07			
140	3.74	4.12	5.40	6.62	6.73	6.09	5.00	4.00	3.64	5.09	6.70	8.03	8.97	7.11	6.56	5.10			
145	3.30	3.80	5.07	6.28	6.21	5.68	4.57	3.72	3.75	5.03	6.42	8.04	8.37	7.71	6.64	5.10			
150	3.10	3.68	4.76	5.95	5.89	5.34	4.17	3.54	3.83	4.77	6.13	7.62	8.39	7.66	6.59	5.27			
155	3.17	3.75	4.78	5.49	5.48	4.88	4.14	3.54	3.91	4.50	5.66	7.19	7.88	7.48	6.63	5.37			
160	3.29	3.81	4.85	5.48	5.22	4.81	4.19	3.54	4.00	4.25	5.12	6.67	7.35	7.34	6.62	5.36			
165	3.53	3.90	4.87	5.59	5.25	4.90	4.16	3.58	4.08	4.08	4.81	5.85	6.92	6.89	6.19	5.12			
170	3.79	3.88	4.83	5.46	5.10	4.80	4.12	3.68	4.22	4.22	4.69	5.57	6.40	6.30	5.86	5.04			
175	4.03	3.95	4.54	5.33	4.93	4.61	4.00	3.61	4.25	4.24	4.33	5.14	5.74	5.51	5.17	4.46			
180	4.17	4.13	4.68	5.19	4.79	4.41	3.93	3.70	4.16	4.16	4.13	4.65	5.16	4.85	4.39	3.92			

7. Photo of Sample

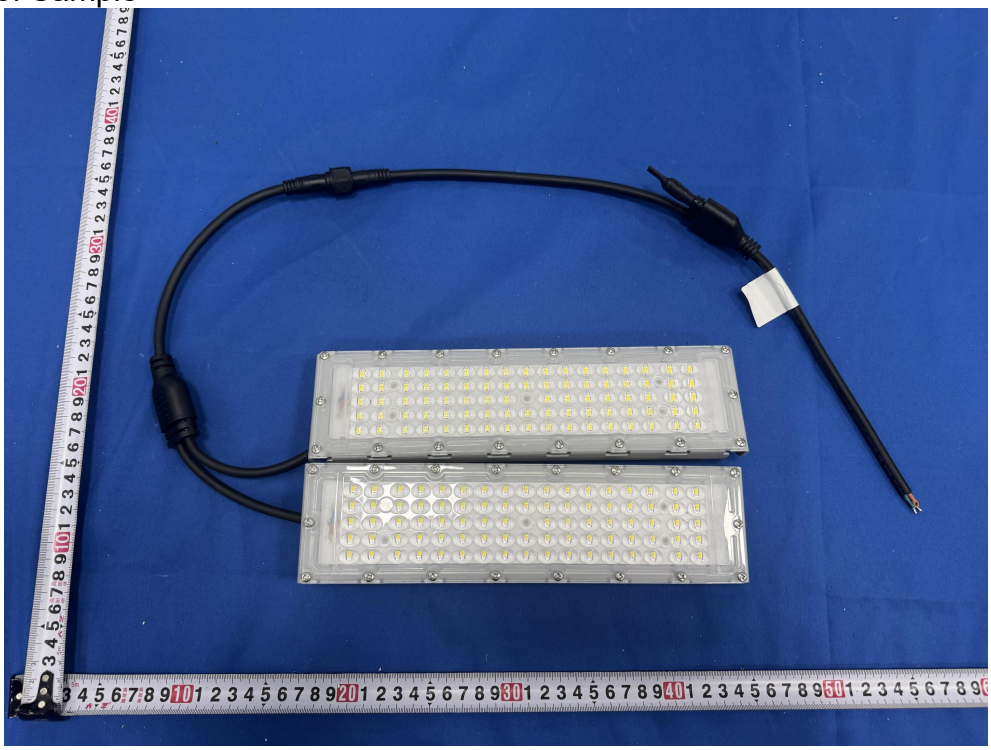


Figure 1 Overview

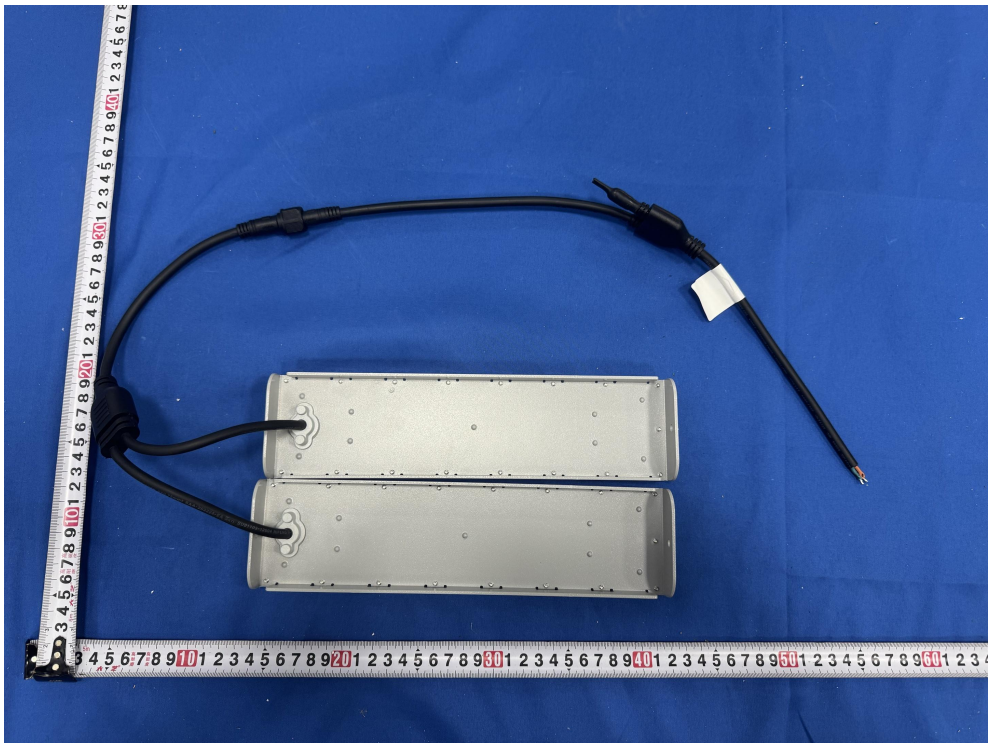


Figure 2 Overview

---End of Report---