



Test Report Of ANSI/IES LM-79-19

APPROVED METHOD FOR OPTICAL AND ELECTRICAL MEASUREMENTS OF SOLID-STATE LIGHTING PRODUCTS

Report Number..... : N02A23090145L01201

Client..... : Luci Pte. Ltd.

Address..... : 52A Tanjong Pagar Road, Singapore 088473

Test Model..... : LFAY-0500-L27-CL-I-2/4/6/10/15

Brand Name..... : N/A

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

Address..... : 1st floor, B Area, Jinbaisheng Industrial Park, Headquarters 2 Road, Songshan Lake Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr., China.

Testing Location..... : As above

Date of receipt..... : Sep. 28, 2023

Date of test : Sep. 28, 2023 – Oct. 18, 2023

Date of report..... : Oct. 19, 2023

Tested by:

Jarvis Zhang

Jarvis Zhang/ Test Engineer

Checked by:

Sandy Chen

Sandy Chen/ Project Engineer

Approved by:

Jessie Li

Jessie Li/ Technical Manager

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 Meide 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.

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Note 3: This report contains data that are not covered by the NVLAP accreditation. It is marked * in the title.

1. Product Description for Equipment under Test (EUT)

Representative (Tested) Model: LFAY-0500-L27-CL-I-2/4/6/10/15
Manufacturer:
Product Type: SHIN FLEX alpha
Rated Voltage/Frequency: DC24V
Rated Power: 2W, 4W, 6W, 10W, 15W
Rated luminous flux: /
Nominal CCT: 2700K

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	MD-E028	GO-R5000	2024/09/17
Digital Power Meter	MD-E001	PF2010	2024/09/17
AC Testing Power Source	MD-E002	DPS1060	2024/09/17
Total Spectral Radiant Flux Standard Lamp	MD-E007	D908S	2024/10/13
Integrating Sphere System	MD-E029	2M	2024/09/17
High Accuracy Array Spectroradio Meter	MD-E011	HAAS-3000	2024/09/17
Digital Power Meter	MD-E008	PF310	2024/09/17
AC Testing Power Source	MD-E010	DPS1010	2024/09/17
Standard Lamp	MD-E036	D204	2024/10/13

Statement of Traceability: Guangdong Meide 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 for LFAY-0500-L27-CL-I-2/4/6/10/15

5.1 Test Data

Test Ambient Temperature (Integrating sphere internal temperature)	25.1℃	Test orientation	Downward
Operate time(Min.)	30	stabilization time(Min.)	0

Optical and Electrical Measurement Result

Number	Time	Current (A)	Voltage (V)	Power (W)	Flux(lm)	x	y	u'	v'	CCT (K)	Ra
0	00h00m00s	0.2842	23.998	6.8202	927.38	0.4587	0.4075	0.2631	0.526	2693	94.2
1	00h00m10s	0.2852	23.998	6.8442	927.46	0.4585	0.4076	0.263	0.526	2696	94.3
2	00h00m20s	0.2858	23.998	6.8586	927.76	0.4585	0.4073	0.2631	0.5259	2694	94.3
3	00h00m30s	0.2863	23.998	6.8706	928.13	0.4587	0.4073	0.2633	0.5259	2690	94.3
4	00h00m40s	0.2868	23.998	6.8826	927.53	0.4586	0.407	0.2633	0.5258	2689	94.3
5	00h00m50s	0.2872	23.998	6.8922	928.44	0.4587	0.407	0.2634	0.5258	2689	94.2
6	00h01m00s	0.2876	23.998	6.9018	928.04	0.4589	0.4068	0.2636	0.5258	2684	94.2
7	00h01m10s	0.288	23.998	6.9114	927.76	0.4587	0.4066	0.2636	0.5256	2684	94.2
8	00h01m20s	0.2883	23.998	6.9186	927.91	0.4586	0.4066	0.2635	0.5256	2686	94.2
9	00h01m30s	0.2886	23.998	6.9258	928.58	0.4588	0.4066	0.2636	0.5256	2684	94.2
10	00h01m40s	0.2889	23.998	6.933	927.87	0.4587	0.4063	0.2637	0.5255	2683	94.2
11	00h01m50s	0.2892	23.998	6.9402	928.18	0.4587	0.4063	0.2637	0.5255	2682	94.2
12	00h02m00s	0.2894	23.998	6.945	927.79	0.4588	0.4064	0.2637	0.5256	2682	94.2
13	00h02m10s	0.2896	23.998	6.9498	928.09	0.4589	0.4062	0.2639	0.5255	2678	94.1
14	00h02m20s	0.2898	23.998	6.9546	928.58	0.4589	0.4062	0.2638	0.5255	2680	94.2
15	00h02m30s	0.2901	23.998	6.9618	927.74	0.4589	0.406	0.2639	0.5254	2678	94.2
16	00h02m40s	0.2902	23.998	6.9642	927.84	0.4589	0.406	0.264	0.5254	2677	94.2
17	00h02m50s	0.2904	23.998	6.969	927.88	0.4588	0.406	0.2639	0.5254	2679	94.2
18	00h03m00s	0.2906	23.998	6.9738	928.65	0.459	0.4061	0.264	0.5255	2677	94.2
19	00h03m10s	0.2907	23.998	6.9762	928.45	0.459	0.4059	0.264	0.5254	2676	94.1
20	00h03m20s	0.2909	23.998	6.981	928.19	0.4589	0.4059	0.264	0.5254	2676	94.2
21	00h03m30s	0.291	23.998	6.9834	927.61	0.4589	0.4058	0.2641	0.5253	2675	94.1

22	00h03m40s	0.2911	23.998	6.9858	927.9	0.459	0.4059	0.2641	0.5254	2675	94.1
23	00h03m50s	0.2913	23.998	6.9906	927.35	0.459	0.4057	0.2642	0.5253	2673	94.1
24	00h04m00s	0.2914	23.998	6.993	927.78	0.4591	0.4058	0.2642	0.5254	2673	94.1
25	00h04m10s	0.2915	23.998	6.9954	927.5	0.459	0.4055	0.2642	0.5253	2673	94.1
26	00h04m20s	0.2916	23.998	6.9978	927.57	0.4588	0.4056	0.2641	0.5253	2676	94.1
27	00h04m30s	0.2917	23.998	7.0002	927.91	0.4589	0.4057	0.2641	0.5253	2675	94.1
28	00h04m40s	0.2917	23.998	7.0002	927.57	0.4588	0.4054	0.2642	0.5252	2674	94.1
29	00h04m50s	0.2918	23.998	7.0026	927.84	0.459	0.4056	0.2642	0.5253	2674	94.1
30	00h05m00s	0.2919	23.998	7.005	928.01	0.459	0.4056	0.2642	0.5253	2673	94.1
31	00h05m10s	0.292	23.998	7.0074	928.16	0.4591	0.4056	0.2643	0.5253	2671	94.1
32	00h05m20s	0.2921	23.998	7.0098	928.25	0.4592	0.4058	0.2642	0.5254	2672	94.1
33	00h05m30s	0.2921	23.998	7.0098	928.26	0.459	0.4055	0.2642	0.5253	2673	94.1
34	00h05m40s	0.2922	23.998	7.0122	927.48	0.4589	0.4054	0.2643	0.5252	2672	94.1
35	00h05m50s	0.2922	23.998	7.0122	928.46	0.4589	0.4055	0.2642	0.5252	2674	94.1
36	00h06m00s	0.2923	23.998	7.0146	927.61	0.4591	0.4056	0.2642	0.5253	2672	94.1
37	00h06m10s	0.2923	23.998	7.0146	927.83	0.459	0.4055	0.2643	0.5253	2671	94.1
38	00h06m20s	0.2924	23.998	7.017	928.51	0.459	0.4055	0.2642	0.5253	2672	94.1
39	00h06m30s	0.2924	23.998	7.017	928.38	0.4588	0.4054	0.2642	0.5252	2674	94.1
40	00h06m40s	0.2925	23.998	7.0194	927.87	0.459	0.4053	0.2644	0.5252	2670	94.1
41	00h06m50s	0.2925	23.998	7.0194	927.56	0.459	0.4053	0.2643	0.5252	2671	94.1
42	00h07m00s	0.2925	23.998	7.0194	928.04	0.459	0.4055	0.2643	0.5252	2672	94.1
43	00h07m10s	0.2926	23.998	7.0218	927.72	0.459	0.4054	0.2643	0.5252	2672	94.1
44	00h07m20s	0.2926	23.998	7.0218	927.57	0.4591	0.4055	0.2644	0.5253	2670	94.1
45	00h07m30s	0.2926	23.998	7.0218	928.09	0.4592	0.4055	0.2644	0.5253	2670	94.1
46	00h07m40s	0.2927	23.998	7.0242	927.53	0.4591	0.4054	0.2644	0.5252	2670	94.1
47	00h07m50s	0.2927	23.998	7.0242	927.73	0.459	0.4053	0.2644	0.5252	2670	94.1
48	00h08m00s	0.2927	23.998	7.0242	927.93	0.459	0.4054	0.2643	0.5252	2672	94.1
49	00h08m10s	0.2927	23.998	7.0242	927.83	0.4591	0.4054	0.2644	0.5252	2670	94.1
50	00h08m20s	0.2928	23.998	7.0266	927.64	0.4591	0.4052	0.2644	0.5252	2668	94
51	00h08m30s	0.2928	23.998	7.0266	928.25	0.459	0.4053	0.2643	0.5252	2670	94.1
52	00h08m40s	0.2928	23.998	7.0266	927.38	0.4589	0.4051	0.2644	0.5251	2670	94.1

53	00h08m50s	0.2928	23.998	7.0266	927.97	0.4588	0.4054	0.2642	0.5252	2673	94.1
54	00h09m00s	0.2928	23.998	7.0266	927.45	0.459	0.4052	0.2644	0.5251	2669	94.1
55	00h09m10s	0.2929	23.998	7.029	927.63	0.4592	0.4054	0.2644	0.5252	2668	94.1
56	00h09m20s	0.2929	23.998	7.029	927.9	0.459	0.4053	0.2643	0.5252	2670	94.1
57	00h09m30s	0.2929	23.998	7.029	928.8	0.459	0.4053	0.2643	0.5252	2671	94.1
58	00h09m40s	0.2929	23.998	7.029	927.91	0.4591	0.4053	0.2644	0.5252	2669	94.1
59	00h09m50s	0.2929	23.998	7.029	927.48	0.4591	0.4053	0.2644	0.5252	2669	94.1
60	00h10m00s	0.2929	23.998	7.029	927.72	0.4589	0.4053	0.2643	0.5252	2671	94.1
61	00h10m10s	0.293	23.998	7.0314	928.3	0.4589	0.4053	0.2643	0.5252	2672	94.1
62	00h10m20s	0.293	23.998	7.0314	927.81	0.459	0.4053	0.2643	0.5252	2671	94.1
63	00h10m30s	0.293	23.998	7.0314	927.78	0.459	0.4053	0.2643	0.5252	2671	94.1
64	00h10m40s	0.293	23.998	7.0314	927.72	0.4591	0.4053	0.2644	0.5252	2670	94.1
65	00h10m50s	0.293	23.998	7.0314	927.37	0.4591	0.4051	0.2644	0.5251	2669	94.1
66	00h11m00s	0.293	23.998	7.0314	928.23	0.4591	0.4053	0.2644	0.5252	2669	94.1
67	00h11m10s	0.293	23.998	7.0314	927.65	0.4591	0.4054	0.2644	0.5252	2670	94.1
68	00h11m20s	0.293	23.998	7.0314	928.23	0.459	0.4054	0.2643	0.5252	2671	94.1
69	00h11m30s	0.293	23.998	7.0314	928.04	0.4591	0.4053	0.2644	0.5252	2669	94.1
70	00h11m40s	0.293	23.998	7.0314	927.41	0.459	0.4052	0.2644	0.5251	2669	94.1
71	00h11m50s	0.293	23.998	7.0314	928.27	0.459	0.4052	0.2644	0.5251	2670	94.1
72	00h12m00s	0.2931	23.998	7.0338	928.22	0.459	0.4053	0.2644	0.5252	2670	94.1
73	00h12m10s	0.2931	23.998	7.0338	928.42	0.4591	0.4054	0.2644	0.5252	2670	94.1
74	00h12m20s	0.2931	23.998	7.0338	928.4	0.4591	0.4052	0.2645	0.5252	2668	94
75	00h12m30s	0.2931	23.998	7.0338	927.7	0.4591	0.4054	0.2644	0.5252	2670	94.2
76	00h12m40s	0.2931	23.998	7.0338	927.86	0.459	0.4052	0.2643	0.5251	2671	94.1
77	00h12m50s	0.2931	23.998	7.0338	927.72	0.4592	0.4053	0.2645	0.5252	2668	94.1
78	00h13m00s	0.2931	23.998	7.0338	928.66	0.459	0.4052	0.2643	0.5252	2671	94.1
79	00h13m10s	0.2931	23.998	7.0338	927.92	0.459	0.4052	0.2644	0.5251	2669	94.1
80	00h13m20s	0.2931	23.998	7.0338	927.71	0.459	0.4054	0.2643	0.5252	2671	94.1
81	00h13m30s	0.2931	23.998	7.0338	927.98	0.4591	0.4053	0.2644	0.5252	2669	94.1
82	00h13m40s	0.2931	23.998	7.0338	928.07	0.4589	0.4053	0.2642	0.5252	2673	94.1
83	00h13m50s	0.2931	23.998	7.0338	927.89	0.4591	0.4052	0.2645	0.5251	2668	94

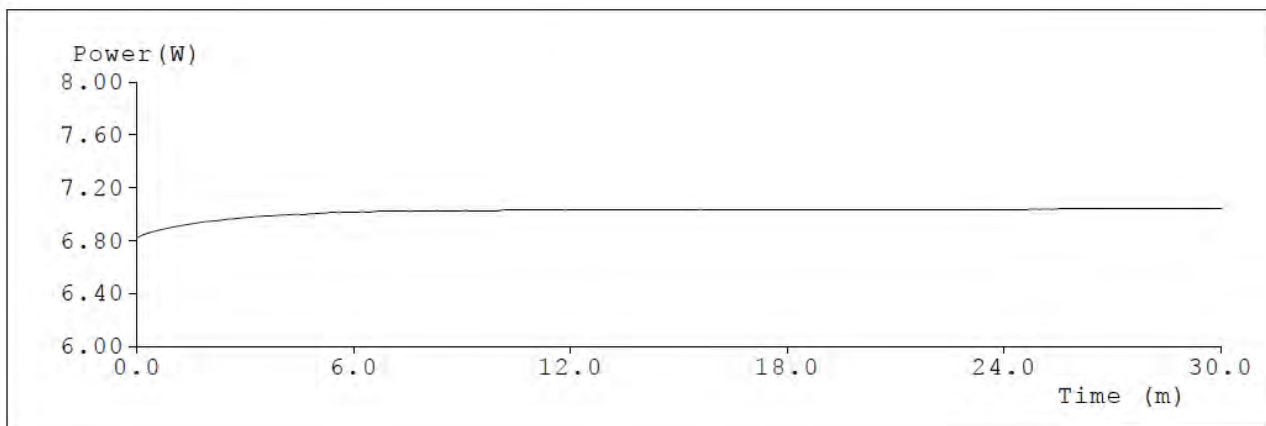
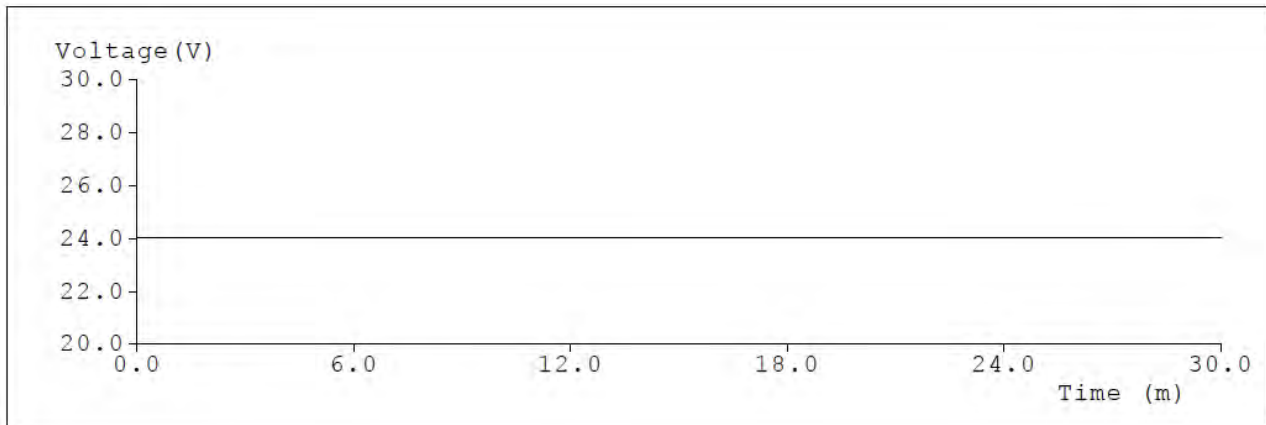
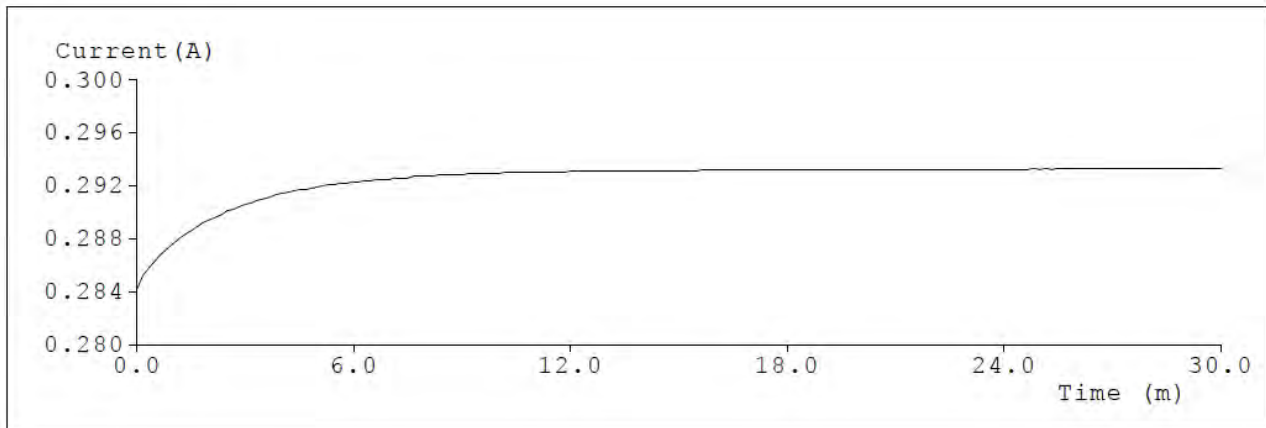
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86	00h14m20s	0.2931	23.998	7.0338	928.14	0.459	0.4051	0.2644	0.5251	2669	94
87	00h14m30s	0.2931	23.998	7.0338	928.23	0.459	0.4052	0.2644	0.5251	2670	94.1
88	00h14m40s	0.2931	23.998	7.0338	928.4	0.4592	0.4052	0.2645	0.5252	2668	94.1
89	00h14m50s	0.2931	23.998	7.0338	928.81	0.459	0.4053	0.2643	0.5252	2671	94.1
90	00h15m00s	0.2931	23.998	7.0338	928.29	0.4589	0.4053	0.2643	0.5252	2672	94.1
91	00h15m10s	0.2931	23.998	7.0338	928.28	0.4591	0.4053	0.2644	0.5252	2670	94.1
92	00h15m20s	0.2931	23.998	7.0338	927.76	0.4591	0.4053	0.2644	0.5252	2668	94.1
93	00h15m30s	0.2931	23.998	7.0338	927.91	0.4589	0.4053	0.2643	0.5252	2671	94.1
94	00h15m40s	0.2932	23.998	7.0362	927.85	0.4591	0.4052	0.2644	0.5252	2669	94.1
95	00h15m50s	0.2932	23.998	7.0362	927.9	0.4591	0.4053	0.2644	0.5252	2669	94.1
96	00h16m00s	0.2932	23.998	7.0362	927.57	0.459	0.4051	0.2644	0.5251	2669	94.1
97	00h16m10s	0.2932	23.998	7.0362	928.01	0.459	0.4052	0.2644	0.5252	2669	94.1
98	00h16m20s	0.2932	23.998	7.0362	927.66	0.4591	0.4051	0.2645	0.5251	2667	94.1
99	00h16m30s	0.2932	23.998	7.0362	928.09	0.4591	0.4053	0.2644	0.5252	2669	94.1
100	00h16m40s	0.2932	23.998	7.0362	928.01	0.4591	0.4052	0.2644	0.5252	2669	94.1
101	00h16m50s	0.2932	23.998	7.0362	928.17	0.4591	0.4054	0.2644	0.5252	2670	94.1
102	00h17m00s	0.2932	23.998	7.0362	927.8	0.459	0.4052	0.2644	0.5252	2670	94.1
103	00h17m10s	0.2932	23.998	7.0362	927.98	0.4591	0.4053	0.2644	0.5252	2670	94.1
104	00h17m20s	0.2932	23.998	7.0362	928.21	0.4589	0.4052	0.2643	0.5251	2671	94.1
105	00h17m30s	0.2932	23.998	7.0362	927.55	0.4592	0.4052	0.2645	0.5252	2667	94.1
106	00h17m40s	0.2932	23.998	7.0362	928.14	0.4589	0.4052	0.2643	0.5251	2671	94
107	00h17m50s	0.2932	23.998	7.0362	928.2	0.459	0.4053	0.2643	0.5252	2671	94.1
108	00h18m00s	0.2932	23.998	7.0362	927.68	0.4589	0.4052	0.2644	0.5251	2670	94.1
109	00h18m10s	0.2932	23.998	7.0362	928.29	0.4592	0.4053	0.2644	0.5252	2668	94.1
110	00h18m20s	0.2932	23.998	7.0362	927.82	0.4593	0.4053	0.2645	0.5252	2667	94.1
111	00h18m30s	0.2932	23.998	7.0362	927.79	0.4591	0.4054	0.2644	0.5252	2669	94.1
112	00h18m40s	0.2932	23.998	7.0362	928.42	0.459	0.4052	0.2644	0.5251	2670	94.1
113	00h18m50s	0.2932	23.998	7.0362	927.41	0.459	0.4052	0.2644	0.5251	2670	94.1
114	00h19m00s	0.2932	23.998	7.0362	928.21	0.4591	0.4052	0.2644	0.5252	2669	94.1

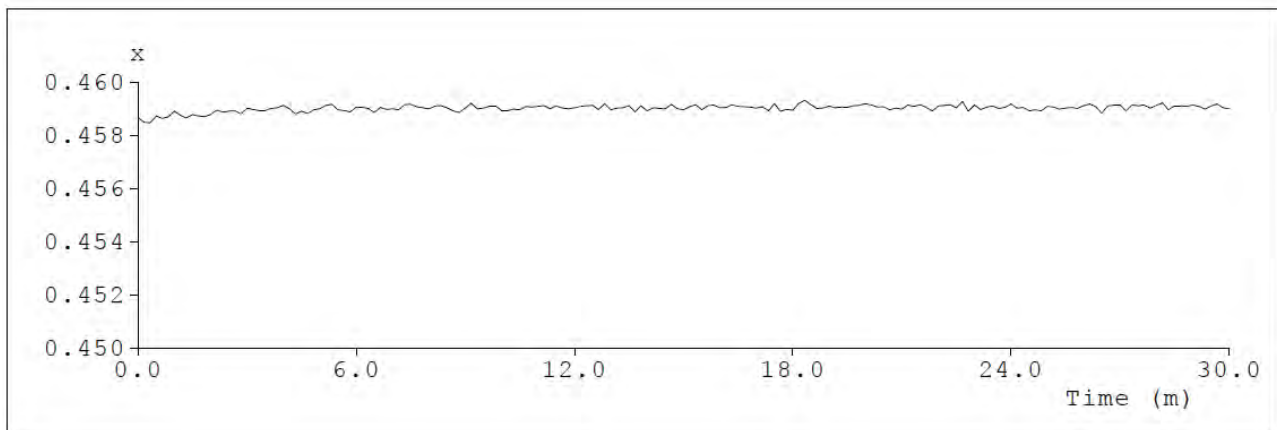
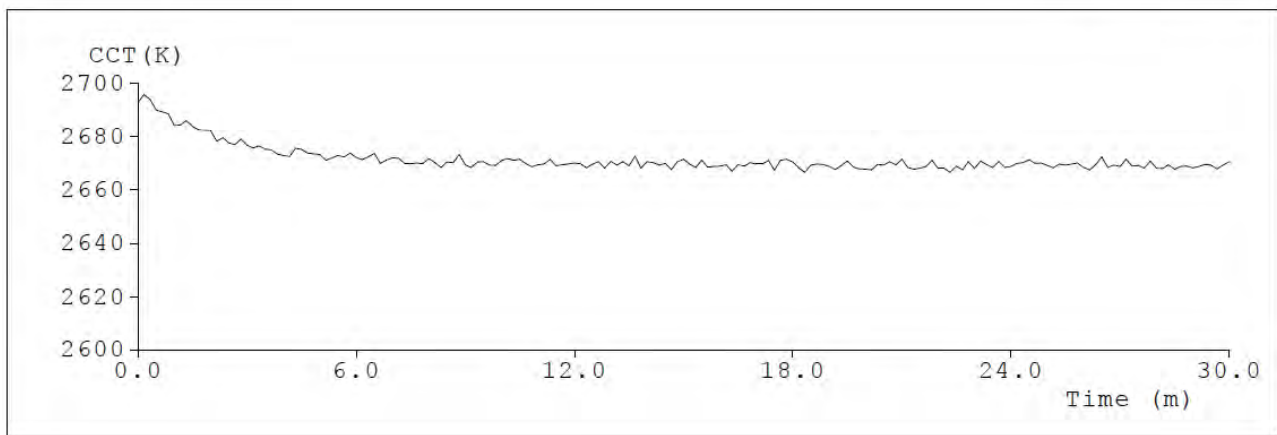
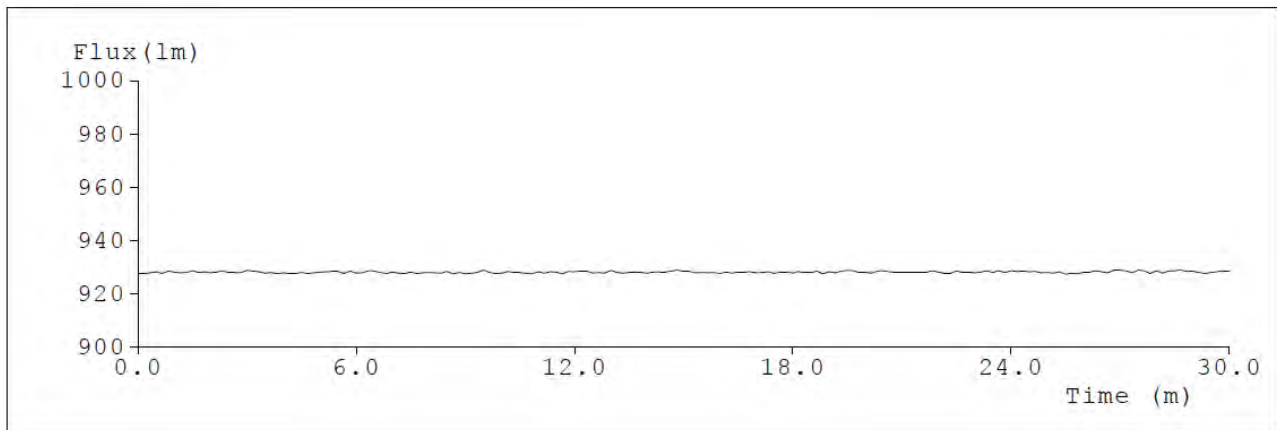
115	00h19m10s	0.2932	23.998	7.0362	927.77	0.459	0.405	0.2645	0.5251	2668	94
116	00h19m20s	0.2932	23.998	7.0362	928.46	0.4591	0.4052	0.2644	0.5252	2669	94.1
117	00h19m30s	0.2932	23.998	7.0362	928.69	0.459	0.4054	0.2643	0.5252	2671	94.1
118	00h19m40s	0.2932	23.998	7.0362	928.55	0.4591	0.4052	0.2644	0.5252	2669	94.1
119	00h19m50s	0.2932	23.998	7.0362	927.96	0.4591	0.4052	0.2645	0.5252	2668	94.1
120	00h20m00s	0.2932	23.998	7.0362	927.96	0.4592	0.4053	0.2645	0.5252	2668	94.1
121	00h20m10s	0.2932	23.998	7.0362	927.68	0.4591	0.4052	0.2645	0.5251	2668	94.1
122	00h20m20s	0.2932	23.998	7.0362	928.39	0.4591	0.4053	0.2644	0.5252	2670	94.1
123	00h20m30s	0.2932	23.998	7.0362	928.59	0.4591	0.4052	0.2644	0.5252	2669	94
124	00h20m40s	0.2932	23.998	7.0362	928.21	0.459	0.4052	0.2643	0.5251	2671	94.1
125	00h20m50s	0.2932	23.998	7.0362	927.87	0.459	0.4052	0.2644	0.5251	2669	94.1
126	00h21m00s	0.2932	23.998	7.0362	927.95	0.459	0.4054	0.2643	0.5252	2671	94.1
127	00h21m10s	0.2932	23.998	7.0362	927.93	0.4591	0.4053	0.2644	0.5252	2668	94.1
128	00h21m20s	0.2932	23.998	7.0362	927.91	0.4591	0.4051	0.2645	0.5251	2668	94.1
129	00h21m30s	0.2932	23.998	7.0362	927.93	0.4591	0.4052	0.2645	0.5252	2668	94.1
130	00h21m40s	0.2932	23.998	7.0362	927.93	0.4591	0.4052	0.2644	0.5251	2669	94.1
131	00h21m50s	0.2932	23.998	7.0362	928.53	0.4589	0.4052	0.2643	0.5251	2671	94.1
132	00h22m00s	0.2932	23.998	7.0362	928.08	0.4591	0.4051	0.2645	0.5251	2668	94
133	00h22m10s	0.2932	23.998	7.0362	927.7	0.4591	0.4052	0.2645	0.5252	2668	94
134	00h22m20s	0.2932	23.998	7.0362	927.66	0.4592	0.4051	0.2645	0.5251	2667	94
135	00h22m30s	0.2932	23.998	7.0362	928.4	0.459	0.4051	0.2644	0.5251	2669	94.1
136	00h22m40s	0.2932	23.998	7.0362	928.06	0.4593	0.4054	0.2645	0.5252	2667	94.1
137	00h22m50s	0.2932	23.998	7.0362	928.07	0.4589	0.4051	0.2644	0.5251	2671	94.1
138	00h23m00s	0.2932	23.998	7.0362	927.79	0.4591	0.4052	0.2645	0.5252	2668	94.1
139	00h23m10s	0.2932	23.998	7.0362	928.01	0.459	0.4053	0.2643	0.5252	2671	94.1
140	00h23m20s	0.2932	23.998	7.0362	928.62	0.4591	0.4053	0.2644	0.5252	2669	94.1
141	00h23m30s	0.2932	23.998	7.0362	927.93	0.4591	0.4052	0.2645	0.5252	2668	94.1
142	00h23m40s	0.2932	23.998	7.0362	928.56	0.459	0.4053	0.2643	0.5252	2671	94.1
143	00h23m50s	0.2932	23.998	7.0362	927.97	0.459	0.4051	0.2645	0.5251	2668	94
144	00h24m00s	0.2932	23.998	7.0362	928.52	0.4592	0.4054	0.2644	0.5252	2669	94.1
145	00h24m10s	0.2932	23.998	7.0362	928.24	0.459	0.4052	0.2644	0.5252	2670	94.1

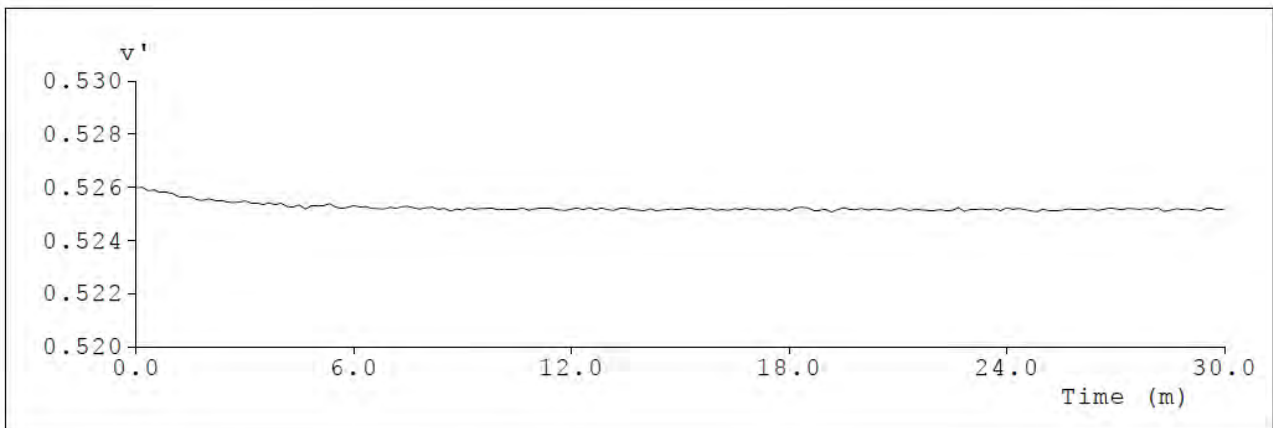
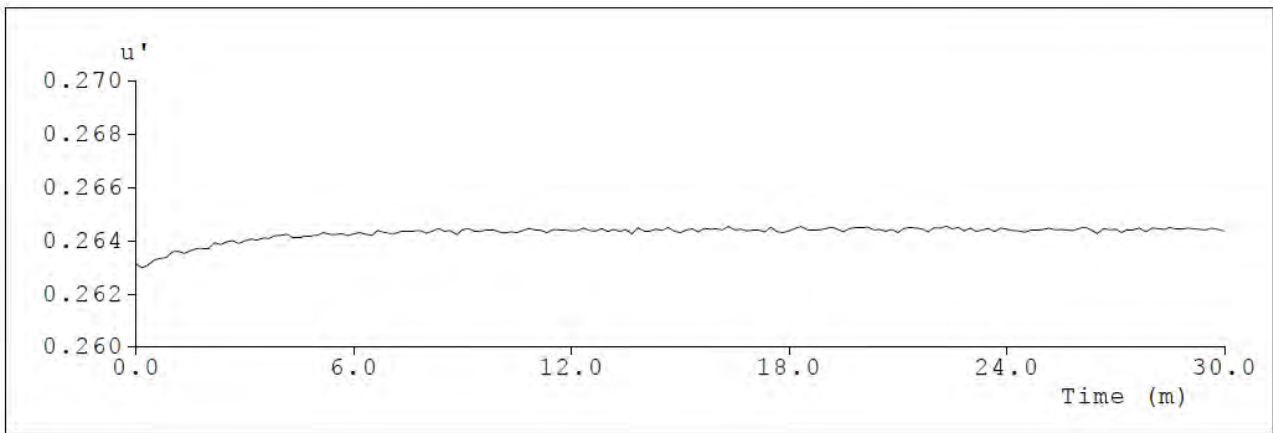
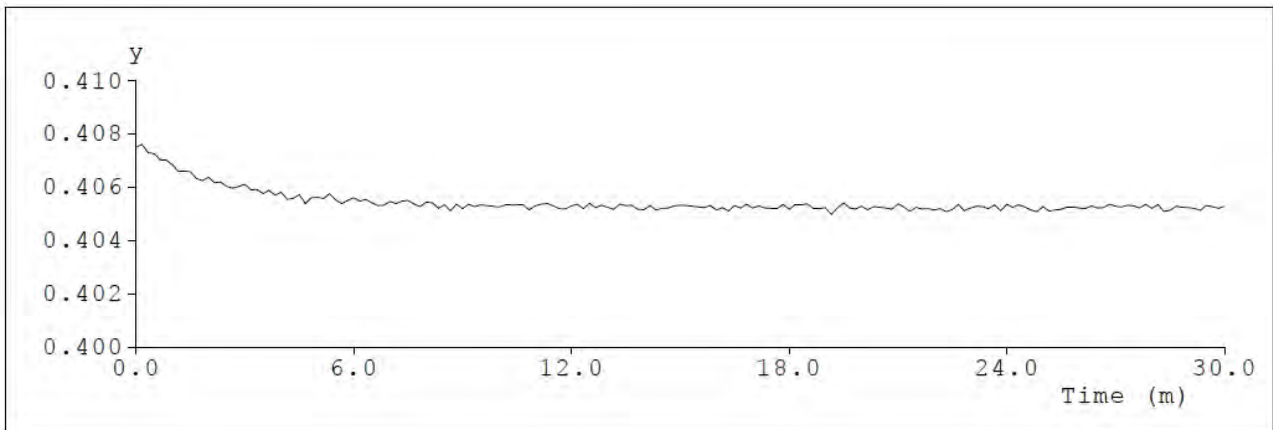
146	00h24m20s	0.2932	23.998	7.0362	928.38	0.459	0.4053	0.2644	0.5252	2670	94.1
147	00h24m30s	0.2932	23.998	7.0362	928.18	0.4589	0.4053	0.2643	0.5252	2671	94.1
148	00h24m40s	0.2932	23.998	7.0362	928.34	0.459	0.4051	0.2644	0.5251	2670	94.1
149	00h24m50s	0.2933	23.998	7.0386	927.85	0.4589	0.4051	0.2644	0.5251	2670	94.1
150	00h25m00s	0.2932	23.998	7.0362	927.87	0.4591	0.4053	0.2644	0.5252	2669	94.1
151	00h25m10s	0.2933	23.998	7.0386	927.68	0.4591	0.4051	0.2645	0.5251	2668	94.1
152	00h25m20s	0.2932	23.998	7.0362	928.17	0.459	0.4051	0.2644	0.5251	2670	94.1
153	00h25m30s	0.2933	23.998	7.0386	927.26	0.459	0.4052	0.2644	0.5251	2669	94.1
154	00h25m40s	0.2933	23.998	7.0386	927.61	0.459	0.4053	0.2644	0.5252	2670	94.1
155	00h25m50s	0.2933	23.998	7.0386	927.42	0.459	0.4053	0.2644	0.5252	2670	94.1
156	00h26m00s	0.2933	23.998	7.0386	928.09	0.4591	0.4052	0.2644	0.5252	2668	94.1
157	00h26m10s	0.2933	23.998	7.0386	928.01	0.4592	0.4052	0.2645	0.5252	2667	94.1
158	00h26m20s	0.2933	23.998	7.0386	928.53	0.4591	0.4053	0.2644	0.5252	2670	94.1
159	00h26m30s	0.2933	23.998	7.0386	928.14	0.4588	0.4052	0.2643	0.5251	2672	94.1
160	00h26m40s	0.2933	23.998	7.0386	927.85	0.4591	0.4052	0.2644	0.5252	2668	94.1
161	00h26m50s	0.2933	23.998	7.0386	928.69	0.4591	0.4054	0.2644	0.5252	2669	94.1
162	00h27m00s	0.2933	23.998	7.0386	928.66	0.4591	0.4053	0.2644	0.5252	2669	94.1
163	00h27m10s	0.2933	23.998	7.0386	928.6	0.4589	0.4053	0.2643	0.5252	2672	94.1
164	00h27m20s	0.2933	23.998	7.0386	927.75	0.4591	0.4053	0.2644	0.5252	2669	94.1
165	00h27m30s	0.2933	23.998	7.0386	928.79	0.4591	0.4053	0.2644	0.5252	2669	94.1
166	00h27m40s	0.2933	23.998	7.0386	928.56	0.4591	0.4052	0.2645	0.5252	2668	94.1
167	00h27m50s	0.2933	23.998	7.0386	927.6	0.459	0.4054	0.2643	0.5252	2671	94.1
168	00h28m00s	0.2933	23.998	7.0386	928.55	0.4591	0.4052	0.2645	0.5252	2668	94.1
169	00h28m10s	0.2933	23.998	7.0386	927.71	0.4592	0.4053	0.2645	0.5252	2668	94.1
170	00h28m20s	0.2933	23.998	7.0386	928.46	0.459	0.4051	0.2644	0.5251	2669	94
171	00h28m30s	0.2933	23.998	7.0386	928.54	0.4591	0.4051	0.2645	0.5251	2668	94.1
172	00h28m40s	0.2933	23.998	7.0386	928.88	0.4591	0.4053	0.2644	0.5252	2669	94.1
173	00h28m50s	0.2933	23.998	7.0386	928.33	0.4591	0.4052	0.2644	0.5252	2669	94.1
174	00h29m00s	0.2933	23.998	7.0386	928.39	0.4591	0.4052	0.2645	0.5252	2668	94.1
175	00h29m10s	0.2933	23.998	7.0386	927.96	0.4591	0.4052	0.2644	0.5252	2669	94.1
176	00h29m20s	0.2933	23.998	7.0386	927.57	0.459	0.4051	0.2644	0.5251	2670	94.1

177	00h29m30s	0.2933	23.998	7.0386	927.92	0.4591	0.4053	0.2644	0.5252	2669	94.1
178	00h29m40s	0.2933	23.998	7.0386	928.15	0.4592	0.4053	0.2645	0.5252	2668	94.1
179	00h29m50s	0.2933	23.998	7.0386	928.54	0.459	0.4052	0.2644	0.5251	2669	94.1
180	00h30m00s	0.2933	23.998	7.0386	928.52	0.459	0.4053	0.2643	0.5252	2671	94.1

Test curves

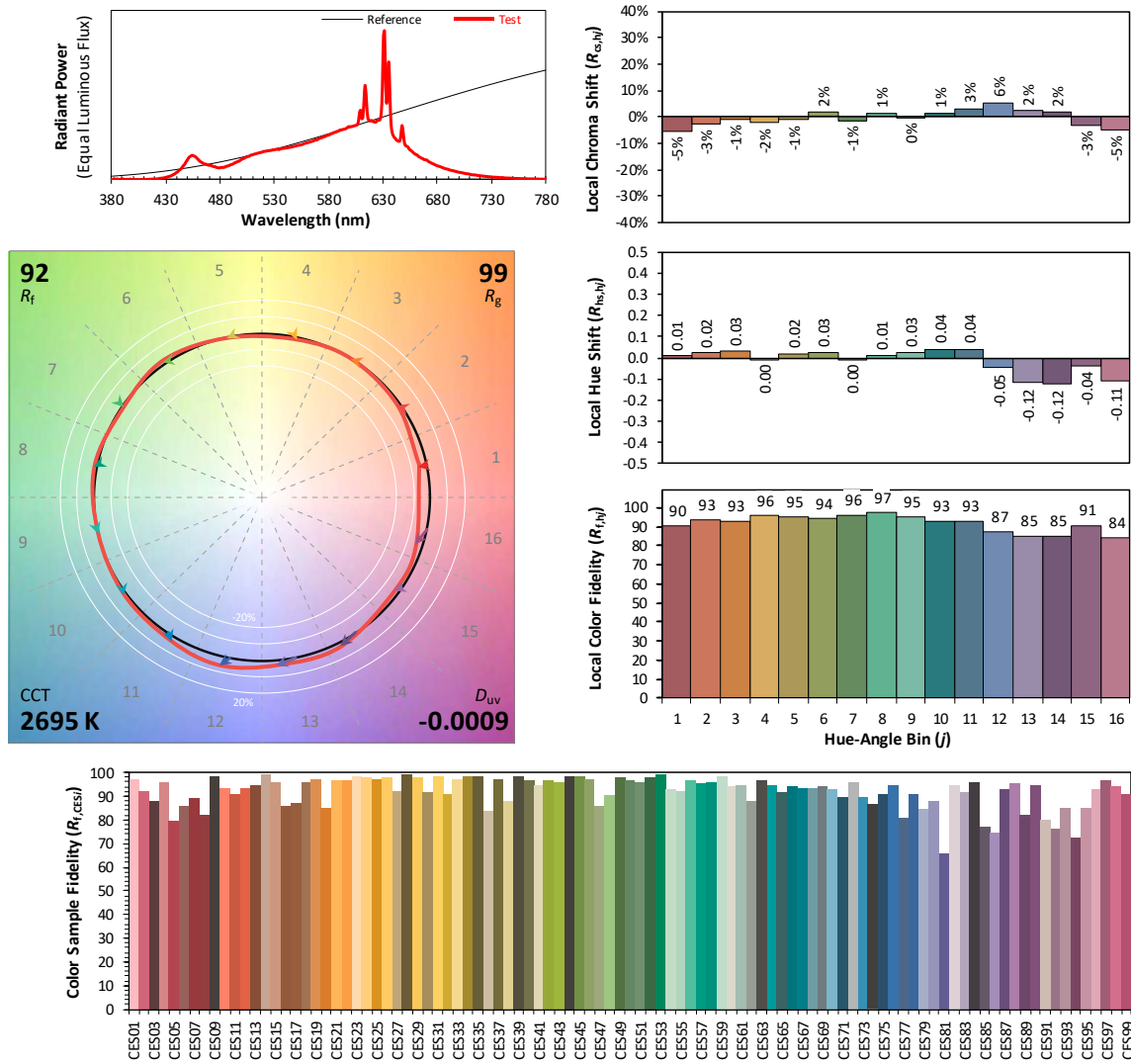






***5.2 ANSI/IES TM-30-18 Color Rendition Report**
ANSI/IES TM-30-18 Color Rendition Report

Source: Manufacturer:
Date: 2023/10/19 Model: LFAY-0500-L27-CL-I-2/4/6/10/15



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

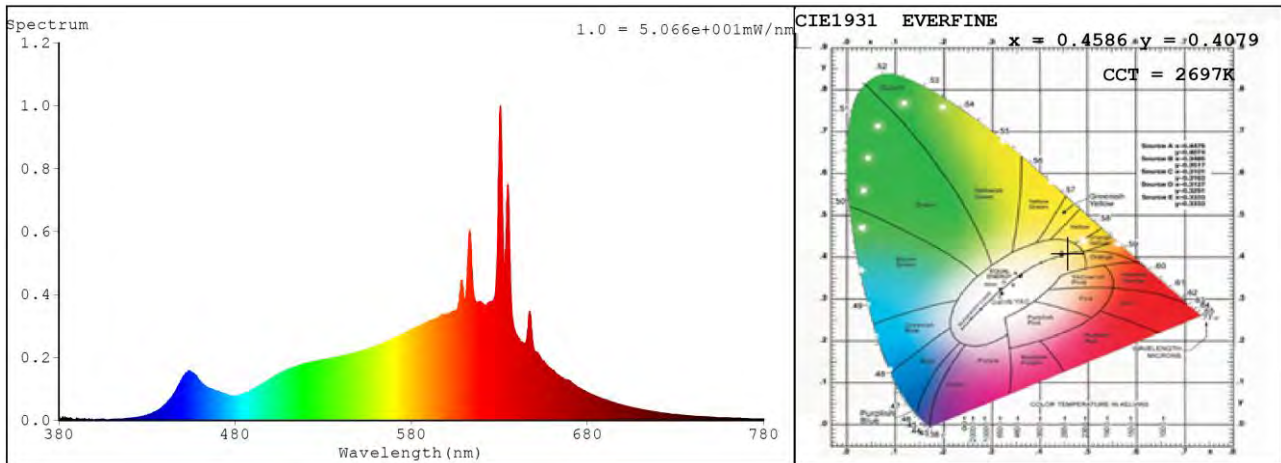
x	0.4586
y	0.4078
u'	0.2630
v'	0.5261

CIE 13.3-1995 (CRI)

R_a	94
R_g	59

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

5.3 Relative Spectral Power Distribution



nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0019	414	0.0045	448	0.1111	482	0.0785	516	0.1727
381	0.0029	415	0.003	449	0.122	483	0.0801	517	0.1745
382	0.008	416	0.0047	450	0.1328	484	0.0808	518	0.1755
383	0.0039	417	0.0044	451	0.1426	485	0.0854	519	0.1789
384	0.0034	418	0.005	452	0.148	486	0.0872	520	0.1812
385	0.0065	419	0.0055	453	0.1526	487	0.0883	521	0.1814
386	0.0008	420	0.0059	454	0.1566	488	0.0917	522	0.1823
387	0.0024	421	0.005	455	0.1527	489	0.0946	523	0.1849
388	0.0042	422	0.0074	456	0.1507	490	0.0976	524	0.1852
389	0.0025	423	0.0069	457	0.1461	491	0.0995	525	0.1858
390	0.0074	424	0.0096	458	0.1396	492	0.1028	526	0.1874
391	0.0024	425	0.0101	459	0.1324	493	0.1082	527	0.1877
392	0	426	0.0111	460	0.1255	494	0.1097	528	0.1907
393	0.0046	427	0.0112	461	0.1183	495	0.1144	529	0.1904
394	0.0017	428	0.0136	462	0.1139	496	0.117	530	0.1919
395	0.0038	429	0.0144	463	0.1095	497	0.1183	531	0.1938
396	0.0019	430	0.0159	464	0.1056	498	0.124	532	0.1942
397	0.0054	431	0.019	465	0.1004	499	0.1275	533	0.1946
398	0.001	432	0.0202	466	0.1009	500	0.1325	534	0.1925
399	0.0026	433	0.0226	467	0.0974	501	0.1348	535	0.1978
400	0.0021	434	0.0248	468	0.096	502	0.1379	536	0.1982
401	0.0013	435	0.0273	469	0.0927	503	0.1426	537	0.2001
402	0.0019	436	0.0319	470	0.0933	504	0.1455	538	0.1999
403	0.002	437	0.035	471	0.0909	505	0.149	539	0.2022
404	0.0023	438	0.0387	472	0.089	506	0.1491	540	0.202
405	0.0014	439	0.0449	473	0.086	507	0.1529	541	0.2029
406	0.0009	440	0.049	474	0.0839	508	0.1574	542	0.2048
407	0.0021	441	0.0541	475	0.0837	509	0.1586	543	0.2063
408	0.0019	442	0.0622	476	0.0798	510	0.1603	544	0.2066
409	0.003	443	0.0661	477	0.0781	511	0.1634	545	0.2097
410	0.0029	444	0.0731	478	0.0769	512	0.1646	546	0.2091
411	0.0029	445	0.0826	479	0.0759	513	0.1671	547	0.2122
412	0.0029	446	0.0915	480	0.078	514	0.1688	548	0.214
413	0.0027	447	0.0991	481	0.0794	515	0.1706	549	0.2144

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
550	0.2168	599	0.3356	648	0.3121	697	0.0529	746	0.0113
551	0.2191	600	0.3387	649	0.2482	698	0.0512	747	0.0113
552	0.2198	601	0.3383	650	0.2214	699	0.0487	748	0.0104
553	0.2209	602	0.3415	651	0.2148	700	0.0482	749	0.01
554	0.2232	603	0.3431	652	0.2122	701	0.0467	750	0.0101
555	0.2238	604	0.3454	653	0.2044	702	0.0454	751	0.0091
556	0.2271	605	0.3467	654	0.1927	703	0.0444	752	0.0091
557	0.2309	606	0.3521	655	0.1886	704	0.0424	753	0.0092
558	0.2317	607	0.3732	656	0.1821	705	0.041	754	0.0089
559	0.2351	608	0.4272	657	0.1766	706	0.0399	755	0.0089
560	0.2354	609	0.4413	658	0.1696	707	0.0386	756	0.008
561	0.2383	610	0.3886	659	0.1649	708	0.0381	757	0.0079
562	0.2404	611	0.3944	660	0.1603	709	0.0368	758	0.0082
563	0.242	612	0.4911	661	0.1586	710	0.0344	759	0.0074
564	0.2443	613	0.5989	662	0.1499	711	0.0333	760	0.0077
565	0.2464	614	0.5403	663	0.1461	712	0.0321	761	0.0074
566	0.2483	615	0.4296	664	0.1421	713	0.0321	762	0.007
567	0.2539	616	0.384	665	0.1376	714	0.031	763	0.0064
568	0.2533	617	0.3755	666	0.1359	715	0.031	764	0.0063
569	0.2551	618	0.3745	667	0.1301	716	0.0289	765	0.0062
570	0.2599	619	0.378	668	0.1287	717	0.0281	766	0.0065
571	0.263	620	0.3731	669	0.1273	718	0.0268	767	0.0065
572	0.2661	621	0.3685	670	0.1257	719	0.0261	768	0.0059
573	0.2673	622	0.3678	671	0.1191	720	0.026	769	0.0057
574	0.2716	623	0.3667	672	0.114	721	0.0245	770	0.0054
575	0.2727	624	0.375	673	0.1115	722	0.0238	771	0.0054
576	0.2748	625	0.3779	674	0.1067	723	0.0234	772	0.0052
577	0.2789	626	0.3789	675	0.1041	724	0.0222	773	0.0049
578	0.2824	627	0.3855	676	0.1008	725	0.0216	774	0.0047
579	0.2832	628	0.4255	677	0.0981	726	0.0209	775	0.0048
580	0.2864	629	0.584	678	0.094	727	0.02	776	0.005
581	0.2894	630	0.9117	679	0.0909	728	0.0198	777	0.0046
582	0.2933	631	0.9443	680	0.0884	729	0.0191	778	0.004
583	0.2948	632	0.6206	681	0.0869	730	0.0177	779	0.0047
584	0.2995	633	0.4864	682	0.0841	731	0.0177	780	0.0047
585	0.3014	634	0.6318	683	0.0817	732	0.0173		
586	0.3026	635	0.7465	684	0.0787	733	0.0169		
587	0.3071	636	0.5231	685	0.0764	734	0.0161		
588	0.3087	637	0.3553	686	0.0734	735	0.0161		
589	0.311	638	0.3021	687	0.0713	736	0.0151		
590	0.3174	639	0.2815	688	0.0692	737	0.0146		
591	0.3164	640	0.2695	689	0.0682	738	0.0143		
592	0.3188	641	0.2628	690	0.0655	739	0.014		
593	0.3209	642	0.2518	691	0.0632	740	0.0141		
594	0.3221	643	0.2496	692	0.061	741	0.0128		
595	0.3242	644	0.2448	693	0.0598	742	0.0126		
596	0.3283	645	0.2467	694	0.0576	743	0.012		
597	0.3331	646	0.2798	695	0.0574	744	0.0118		
598	0.339	647	0.3441	696	0.0542	745	0.0113		

6. Goniophotometer Test results for LFAY-0500-L27-CL-I-2/4/6/10/15

6.1 Test Data

Test Ambient Temperature	25.2°C	Test orientation	Downward
Operate time(Min.)	90	stabilization time(Min.)	30

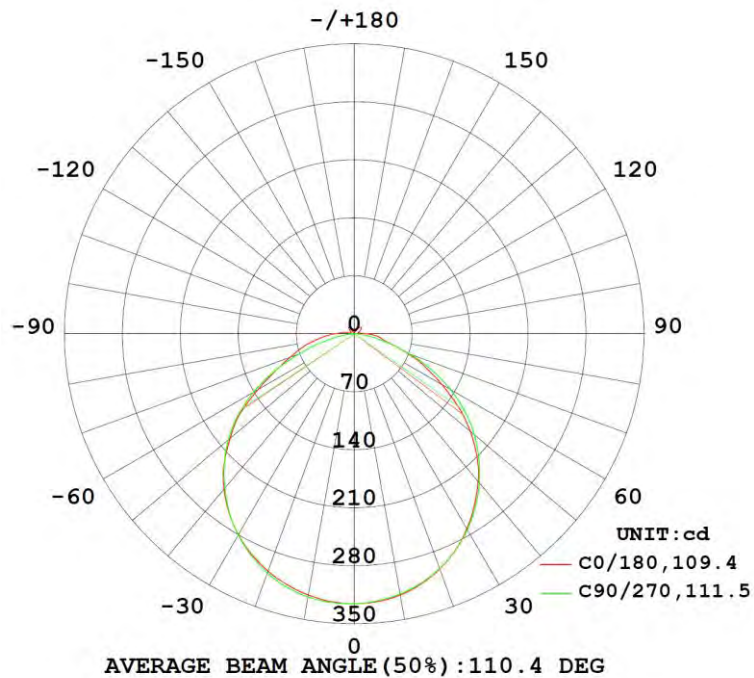
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current(A)	Power Factor	Power(W)
24.001	--	0.304	1.0000	7.2961

Optical Measurement

Luminous Flux (lm)	Efficacy(lm/W)	Imax (cd)	η up (%)	η down (%)
937.047	128.43	325.9	3.9	96.1

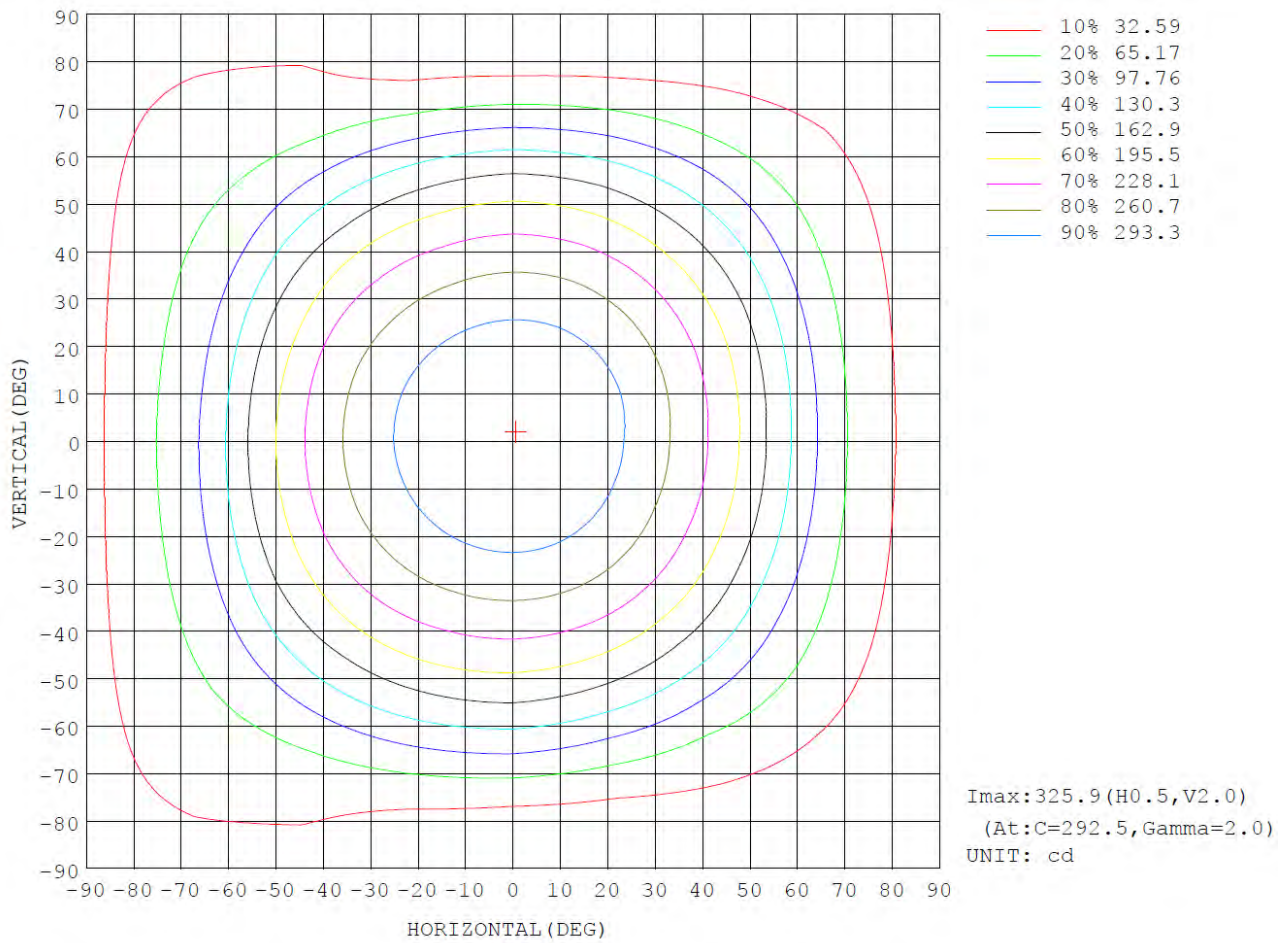
6.2 Luminous Intensity Distribution



6.3 Zonal Flux Diagram

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	320.1	318.9	318.7	319.0	320.1	321.3	322.4	322.0	0- 10	30.83	30.83	3.29,3.29
20	302.1	300.9	301.6	302.4	304.9	305.9	307.1	306.7	10- 20	88.48	119.3	12.7,12.7
30	272.0	271.9	273.1	275.8	279.9	279.5	280.4	279.4	20- 30	134.4	253.7	27.1,27.1
40	233.0	231.5	235.2	239.8	245.0	242.5	243.4	240.7	30- 40	161.9	415.6	44.4,44.4
50	183.0	180.1	189.4	192.3	195.6	193.8	198.7	191.6	40- 50	166.6	582.2	62.1,62.1
60	122.3	119.9	134.2	135.0	134.2	131.6	140.3	133.0	50- 60	144.6	726.8	77.6,77.6
70	68.10	61.06	70.98	75.51	82.34	68.93	71.75	67.82	60- 70	99.18	826.0	88.2,88.2
80	33.61	24.15	20.80	39.54	49.39	36.71	20.13	28.40	70- 80	51.60	877.6	93.7,93.7
90	15.70	11.62	3.036	19.35	24.26	16.67	1.775	10.79	80- 90	23.04	900.6	96.1,96.1
100	5.587	5.606	0	7.205	10.11	6.560	0.4715	5.140	90-100	9.271	909.9	97.1,97.1
110	5.192	9.721	0	5.861	4.501	6.301	1.170	9.058	100-110	5.867	915.8	97.7,97.7
120	8.774	12.96	0	8.306	4.585	7.929	0.8465	12.51	110-120	6.931	922.7	98.5,98.5
130	11.24	10.97	0	10.05	7.102	9.693	0.4188	11.21	120-130	6.352	929.1	99.1,99.1
140	10.50	5.729	0.2521	3.724	10.72	4.761	0.3477	6.062	130-140	4.854	933.9	99.7,99.7
150	6.102	2.428	0.3260	0.5775	3.242	1.163	0.4462	2.161	140-150	2.359	936.3	99.9,99.9
160	1.940	0.6612	0.3971	0.4136	0.5366	0.5494	0.5188	0.6102	150-160	0.5672	936.8	100,100
170	0.4316	0.4442	0.4734	0.4782	0.5132	0.5474	0.5350	0.5296	160-170	0.1533	937.0	100,100
180	0.4773	0.4773	0.7226	0.7226	0.7226	0.7226	0.4773	0.4773	170-180	0.0480	937.0	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

6.4 Isocandela Diagram



6.5 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	326	326	326	326	326	326	326	326	326	326	326	326	326	326	326	326			
5	324	324	324	324	323	324	324	324	324	324	325	325	325	325	325	325			
10	320	319	319	319	319	319	319	319	320	321	321	322	322	322	322	321			
15	313	312	311	311	311	312	312	312	314	314	315	316	316	316	316	315			
20	302	301	301	301	302	302	302	303	305	305	306	306	307	307	307	305			
25	289	287	288	289	289	289	290	292	294	294	294	294	295	295	295	293			
30	272	271	272	273	273	274	276	278	280	280	280	279	280	281	279	277			
35	253	251	253	254	255	256	259	262	264	264	262	262	263	264	261	258			
40	233	231	231	233	235	236	240	244	245	245	243	241	243	243	241	238			
45	210	207	207	210	213	214	218	222	222	223	220	220	222	221	218	215			
50	183	180	180	184	189	191	192	195	196	194	194	195	199	196	192	189			
55	153	150	151	156	163	164	164	168	169	166	163	166	172	169	163	160			
60	122	119	120	125	134	135	135	136	134	132	132	135	140	138	133	129			
65	93.8	89.9	88.7	93.8	103	104	105	105	104	99.5	99.0	101	106	105	102	96.9			
70	68.1	65.8	61.1	63.2	71.0	73.6	75.5	80.1	82.3	75.1	68.9	68.1	71.8	72.2	67.8	71.9			
75	44.6	41.8	41.2	37.7	41.7	46.8	52.8	62.4	66.0	59.3	47.4	41.0	42.4	44.1	45.9	47.9			
80	33.6	29.6	24.2	20.3	20.8	27.1	39.5	48.1	49.4	45.7	36.7	22.8	20.1	23.3	28.4	33.0			
85	26.0	23.9	17.7	10.6	4.31	15.5	29.1	34.4	35.6	32.3	26.8	13.3	4.13	10.8	17.1	25.5			
90	15.7	14.4	11.6	6.67	3.04	10.2	19.4	23.6	24.3	21.4	16.7	8.76	1.77	5.45	10.8	15.2			
95	9.22	8.47	6.91	5.21	0.00	6.73	12.1	15.4	16.1	13.6	10.1	5.58	0.21	3.80	6.36	9.05			
100	5.59	5.65	5.61	7.20	0.00	5.29	7.20	9.34	10.1	8.48	6.56	5.14	0.47	5.25	5.14	5.67			
105	4.44	5.01	6.63	9.46	0.00	5.71	5.49	5.43	5.43	5.46	5.79	5.96	0.86	8.21	5.94	4.88			
110	5.19	6.31	9.72	10.3	0.00	5.79	5.86	4.90	4.50	5.00	6.30	7.98	1.17	9.98	9.06	6.22			
115	7.35	8.51	11.6	8.50	0.00	9.53	7.04	5.13	4.37	5.11	7.05	9.21	1.19	9.73	11.6	8.67			
120	8.77	10.2	13.0	5.85	0.00	7.49	8.31	6.04	4.59	5.81	7.93	7.82	0.85	6.95	12.5	10.3			
125	10.3	11.7	12.6	4.03	0.00	3.74	8.36	7.75	5.52	6.90	9.15	4.11	0.57	4.47	12.3	11.6			
130	11.2	12.1	11.0	2.83	0.00	1.33	10.0	8.71	7.10	7.97	9.69	1.52	0.42	3.21	11.2	11.8			
135	11.2	11.5	7.66	1.84	0.11	0.55	7.74	11.0	9.41	10.1	7.61	0.57	0.32	2.17	8.48	11.4			
140	10.5	10.2	5.73	1.41	0.25	0.38	3.72	9.35	10.7	9.50	4.76	0.41	0.35	1.46	6.06	10.2			
145	8.86	7.66	3.90	1.01	0.29	0.37	1.50	5.20	7.88	6.44	2.51	0.44	0.40	1.05	3.85	7.69			
150	6.10	5.00	2.43	0.73	0.33	0.37	0.58	1.79	3.24	2.80	1.16	0.48	0.45	0.68	2.16	4.59			
155	3.50	2.84	1.29	0.42	0.36	0.38	0.40	0.49	0.94	0.93	0.63	0.52	0.49	0.49	1.12	2.63			
160	1.94	1.45	0.66	0.41	0.40	0.40	0.41	0.43	0.54	0.54	0.55	0.54	0.52	0.51	0.61	1.19			
165	0.55	0.45	0.42	0.42	0.44	0.44	0.45	0.46	0.53	0.54	0.56	0.54	0.53	0.53	0.53	0.53			
170	0.43	0.44	0.44	0.45	0.47	0.47	0.48	0.49	0.51	0.54	0.55	0.54	0.53	0.53	0.53	0.49			
175	0.45	0.46	0.46	0.47	0.51	0.51	0.51	0.52	0.56	0.51	0.53	0.53	0.53	0.53	0.52	0.49			
180	0.48	0.48	0.48	0.48	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.72	0.48	0.48	0.48	0.48			

7. Photo of sample

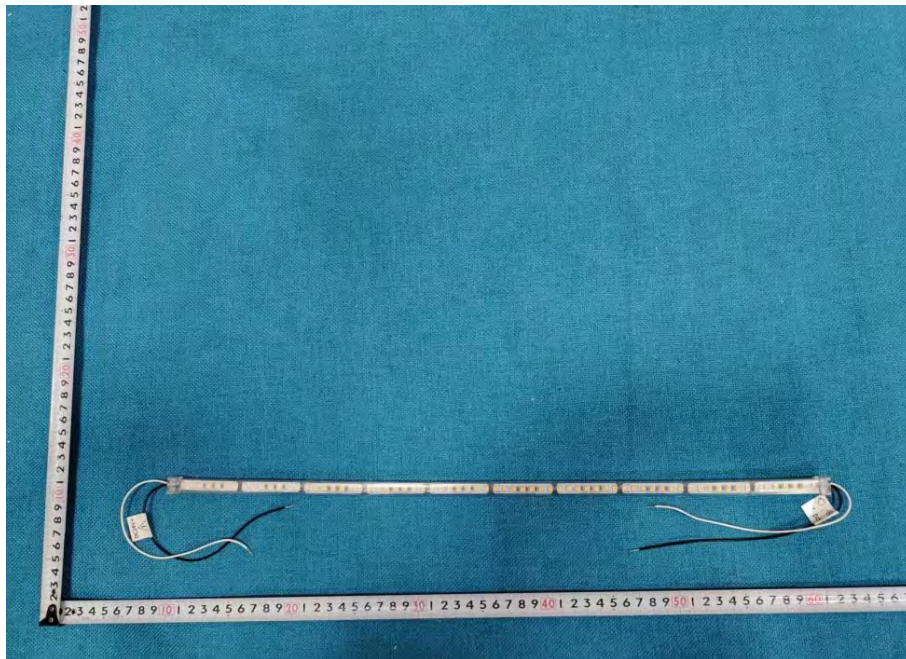


Figure 1 Overview

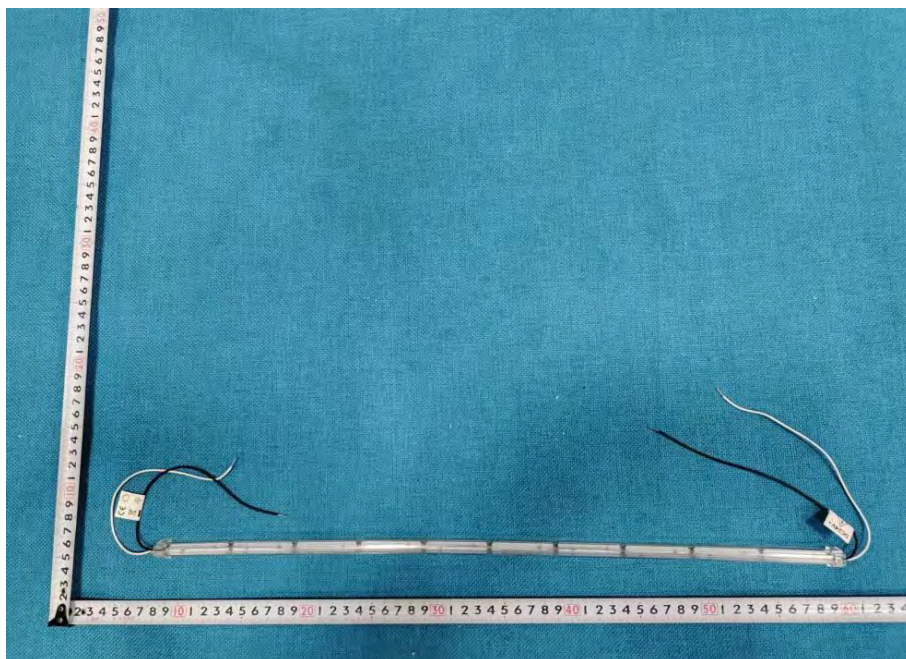


Figure 2 Overview

---End of Report---