Test Report Of ANSI/IES LM-79-19

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

Report Number	:	N02A23090145L00301
Client	:	Luci Pte. Ltd.
Address	:	52A Tanjong Pagar Road, Singapore 088473
Test Model	:	LCETHY-1000-NL27-DF-I-10 LCETHY-1000-NL27-DF-I-21 LCETHY-1000-NL27-DF-I-31
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. 09, 2023
Date of test	:	Sep. 09, 2023 – Sep. 15, 2023
Date of report	:	Sep. 15, 2023

Tested by:	**Checked by:**	**Approved by:**
Jarvis Zhang	Sandy Chen	
Jarvis Zhang/ Test Engineer	Sandy Chen/ Project Engineer	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:	LCETHY-1000-NL27-DF-I-10 LCETHY-1000-NL27-DF-I-21 LCETHY-1000-NL27-DF-I-31
Manufacturer:	
Product Type:	SHIN Creide THOF
Rated Voltage/Frequency:	DC24V
Rated Power:	10W, 21W, 31W
Rated luminous flux:	/
Nominal CCT:	4000K

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	2023/09/17
Digital Power Meter	MD-E001	PF2010	2023/09/17
AC Testing Power Source	MD-E002	DPS1060	2023/09/17
Total Spectral Radiant Flux Standard Lamp	MD-E007	D908S	2023/10/13
Integrating Sphere System	MD-E029	2M	2023/09/17
High Accuracy Array Spectroradio Meter	MD-E011	HAAS-3000	2023/09/17
Digital Power Meter	MD-E008	PF310	2023/09/17
AC Testing Power Source	MD-E010	DPS1010	2023/09/17
Standard Lamp	MD-E036	D204	2023/10/13

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°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 for LCETHY-1000-NL27-DF-I-10

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	0.3727	23.998	8.9441	924.42	0.394	0.3811	0.2323	0.5055	3683	96.5
1	00h00m10s	0.3728	23.998	8.9465	924.46	0.3941	0.3811	0.2323	0.5055	3682	96.5
2	00h00m20s	0.3729	23.998	8.9489	924.64	0.394	0.3811	0.2323	0.5055	3684	96.5
3	00h00m30s	0.373	23.998	8.9513	924.87	0.3939	0.3811	0.2322	0.5055	3685	96.5
4	00h00m40s	0.3731	23.998	8.9537	924.74	0.394	0.381	0.2323	0.5055	3682	96.5
5	00h00m50s	0.3731	23.998	8.9537	924.16	0.394	0.381	0.2323	0.5054	3682	96.5
6	00h01m00s	0.3732	23.998	8.9561	924.75	0.3941	0.3809	0.2324	0.5054	3679	96.5
7	00h01m10s	0.3733	23.998	8.9585	924.59	0.3939	0.3808	0.2323	0.5054	3684	96.5
8	00h01m20s	0.3733	23.998	8.9585	924.63	0.394	0.3809	0.2324	0.5054	3681	96.6
9	00h01m30s	0.3734	23.998	8.9609	925.02	0.394	0.3811	0.2323	0.5055	3682	96.5
10	00h01m40s	0.3735	23.998	8.9633	924.95	0.394	0.3809	0.2324	0.5054	3681	96.6
11	00h01m50s	0.3735	23.998	8.9633	925.26	0.3939	0.3809	0.2323	0.5054	3683	96.5
12	00h02m00s	0.3736	23.998	8.9657	925.45	0.394	0.3809	0.2324	0.5054	3682	96.5
13	00h02m10s	0.3736	23.998	8.9657	925.28	0.3939	0.3809	0.2323	0.5054	3684	96.5
14	00h02m20s	0.3737	23.998	8.9681	925.69	0.3941	0.381	0.2324	0.5055	3680	96.5
15	00h02m30s	0.3738	23.998	8.9705	924.85	0.394	0.3807	0.2324	0.5053	3680	96.5
16	00h02m40s	0.3738	23.998	8.9705	925.36	0.394	0.3807	0.2324	0.5053	3680	96.5
17	00h02m50s	0.3739	23.998	8.9729	925.37	0.3941	0.3811	0.2324	0.5055	3680	96.5
18	00h03m00s	0.3739	23.998	8.9729	925.11	0.3941	0.3808	0.2325	0.5054	3678	96.6
19	00h03m10s	0.374	23.998	8.9753	925.44	0.394	0.3808	0.2324	0.5054	3680	96.5
20	00h03m20s	0.374	23.998	8.9753	925.03	0.3943	0.3809	0.2325	0.5055	3675	96.6
21	00h03m30s	0.374	23.998	8.9753	925.61	0.3941	0.3809	0.2325	0.5054	3678	96.5

22	00h03m40s	0.3741	23.998	8.9777	925.95	0.394	0.3807	0.2324	0.5053	3680	96.5
23	00h03m50s	0.3741	23.998	8.9777	925.22	0.3939	0.3808	0.2324	0.5053	3682	96.6
24	00h04m00s	0.3742	23.998	8.9801	925.8	0.3941	0.3808	0.2325	0.5054	3678	96.5
25	00h04m10s	0.3742	23.998	8.9801	925.53	0.3939	0.3808	0.2324	0.5053	3682	96.6
26	00h04m20s	0.3742	23.998	8.9801	924.68	0.3942	0.3807	0.2325	0.5054	3676	96.5
27	00h04m30s	0.3743	23.998	8.9825	925.39	0.3941	0.3807	0.2325	0.5054	3678	96.6
28	00h04m40s	0.3743	23.998	8.9825	925.61	0.3942	0.3808	0.2325	0.5054	3677	96.6
29	00h04m50s	0.3744	23.998	8.9849	925.66	0.3941	0.3808	0.2324	0.5054	3680	96.5
30	00h05m00s	0.3744	23.998	8.9849	925.08	0.394	0.3807	0.2324	0.5053	3680	96.6
31	00h05m10s	0.3744	23.998	8.9849	925.39	0.3941	0.3808	0.2324	0.5054	3679	96.5
32	00h05m20s	0.3745	23.998	8.9873	925.28	0.3942	0.3808	0.2325	0.5054	3676	96.6
33	00h05m30s	0.3745	23.998	8.9873	925.67	0.3941	0.3808	0.2325	0.5054	3678	96.5
34	00h05m40s	0.3745	23.998	8.9873	925.73	0.3941	0.3808	0.2324	0.5054	3679	96.6
35	00h05m50s	0.3746	23.998	8.9897	925.38	0.394	0.3806	0.2325	0.5053	3679	96.6
36	00h06m00s	0.3746	23.998	8.9897	925.62	0.3942	0.3808	0.2325	0.5054	3677	96.5
37	00h06m10s	0.3746	23.998	8.9897	925.36	0.3941	0.3807	0.2325	0.5053	3678	96.6
38	00h06m20s	0.3746	23.998	8.9897	925.47	0.3942	0.3806	0.2326	0.5053	3675	96.6
39	00h06m30s	0.3747	23.998	8.9921	925.65	0.3942	0.3807	0.2326	0.5054	3675	96.6
40	00h06m40s	0.3747	23.998	8.9921	925.27	0.3942	0.3808	0.2326	0.5054	3675	96.6
41	00h06m50s	0.3747	23.998	8.9921	925.91	0.394	0.3807	0.2324	0.5053	3681	96.6
42	00h07m00s	0.3747	23.998	8.9921	925.53	0.3944	0.3809	0.2326	0.5055	3673	96.6
43	00h07m10s	0.3748	23.998	8.9944	925.33	0.3942	0.3805	0.2326	0.5053	3675	96.6
44	00h07m20s	0.3748	23.998	8.9944	925.85	0.3941	0.3806	0.2326	0.5053	3677	96.6
45	00h07m30s	0.3748	23.998	8.9944	925.79	0.3941	0.3804	0.2326	0.5052	3675	96.6
46	00h07m40s	0.3748	23.998	8.9944	925.33	0.3941	0.3805	0.2326	0.5053	3676	96.6
47	00h07m50s	0.3749	23.998	8.9969	925.57	0.3941	0.3806	0.2325	0.5053	3677	96.6
48	00h08m00s	0.3749	23.998	8.9969	925.77	0.3943	0.3806	0.2326	0.5053	3673	96.6
49	00h08m10s	0.3749	23.998	8.9969	925.74	0.3941	0.3805	0.2326	0.5052	3677	96.6
50	00h08m20s	0.3749	23.998	8.9969	925.56	0.3942	0.3807	0.2325	0.5053	3676	96.6
51	00h08m30s	0.3749	23.998	8.9969	925.28	0.3942	0.3806	0.2326	0.5053	3675	96.6
52	00h08m40s	0.3749	23.998	8.9969	926.49	0.3941	0.3806	0.2325	0.5053	3677	96.6

53	00h08m50s	0.375	23.998	8.9992	925.66	0.3942	0.3808	0.2325	0.5054	3677	96.6
54	00h09m00s	0.375	23.998	8.9992	925.11	0.3942	0.3805	0.2327	0.5053	3674	96.6
55	00h09m10s	0.375	23.998	8.9992	925.6	0.3941	0.3805	0.2326	0.5053	3676	96.5
56	00h09m20s	0.375	23.998	8.9992	925.95	0.3942	0.3808	0.2325	0.5054	3676	96.6
57	00h09m30s	0.375	23.998	8.9992	925.84	0.3942	0.3808	0.2325	0.5054	3676	96.5
58	00h09m40s	0.375	23.998	8.9992	926.09	0.394	0.3805	0.2325	0.5052	3678	96.5
59	00h09m50s	0.375	23.998	8.9992	925.67	0.3942	0.3807	0.2325	0.5054	3676	96.5
60	00h10m00s	0.3751	23.998	9.0016	925.48	0.3941	0.3806	0.2325	0.5053	3678	96.6
61	00h10m10s	0.3751	23.998	9.0016	925.48	0.394	0.3806	0.2325	0.5053	3678	96.6
62	00h10m20s	0.3751	23.998	9.0016	926.05	0.3941	0.3806	0.2326	0.5053	3676	96.6
63	00h10m30s	0.3751	23.998	9.0016	925.41	0.394	0.3805	0.2325	0.5052	3678	96.6
64	00h10m40s	0.3751	23.998	9.0016	925.83	0.3941	0.3807	0.2325	0.5053	3677	96.5
65	00h10m50s	0.3751	23.998	9.0016	926.04	0.3941	0.3806	0.2326	0.5053	3676	96.6
66	00h11m00s	0.3751	23.998	9.0016	925.89	0.3942	0.3805	0.2326	0.5053	3674	96.6
67	00h11m10s	0.3752	23.998	9.004	925.72	0.3941	0.3804	0.2327	0.5052	3674	96.6
68	00h11m20s	0.3752	23.998	9.004	925.73	0.3941	0.3807	0.2325	0.5053	3677	96.6
69	00h11m30s	0.3752	23.998	9.004	925.83	0.3942	0.3807	0.2326	0.5053	3676	96.6
70	00h11m40s	0.3752	23.998	9.004	925.86	0.3942	0.3806	0.2326	0.5053	3675	96.5
71	00h11m50s	0.3752	23.998	9.004	926.31	0.3941	0.3805	0.2326	0.5053	3675	96.6
72	00h12m00s	0.3752	23.998	9.004	925.82	0.3941	0.3805	0.2326	0.5053	3676	96.6
73	00h12m10s	0.3752	23.998	9.004	926.23	0.3941	0.3805	0.2326	0.5053	3677	96.6
74	00h12m20s	0.3752	23.998	9.004	926.06	0.3941	0.3806	0.2325	0.5053	3677	96.6
75	00h12m30s	0.3752	23.998	9.004	925.46	0.3942	0.3804	0.2327	0.5052	3673	96.6
76	00h12m40s	0.3752	23.998	9.004	926.18	0.3942	0.3807	0.2326	0.5054	3675	96.6
77	00h12m50s	0.3753	23.998	9.0064	926.09	0.3941	0.3805	0.2326	0.5053	3676	96.6
78	00h13m00s	0.3753	23.998	9.0064	926.07	0.3942	0.3806	0.2326	0.5053	3675	96.6
79	00h13m10s	0.3753	23.998	9.0064	925.68	0.3942	0.3805	0.2326	0.5053	3674	96.6
80	00h13m20s	0.3753	23.998	9.0064	925.91	0.3942	0.3804	0.2327	0.5052	3673	96.6
81	00h13m30s	0.3753	23.998	9.0064	925.69	0.394	0.3804	0.2326	0.5052	3677	96.6
82	00h13m40s	0.3753	23.998	9.0064	925.54	0.3942	0.3805	0.2326	0.5053	3674	96.6
83	00h13m50s	0.3753	23.998	9.0064	925.63	0.3941	0.3805	0.2326	0.5053	3676	96.6

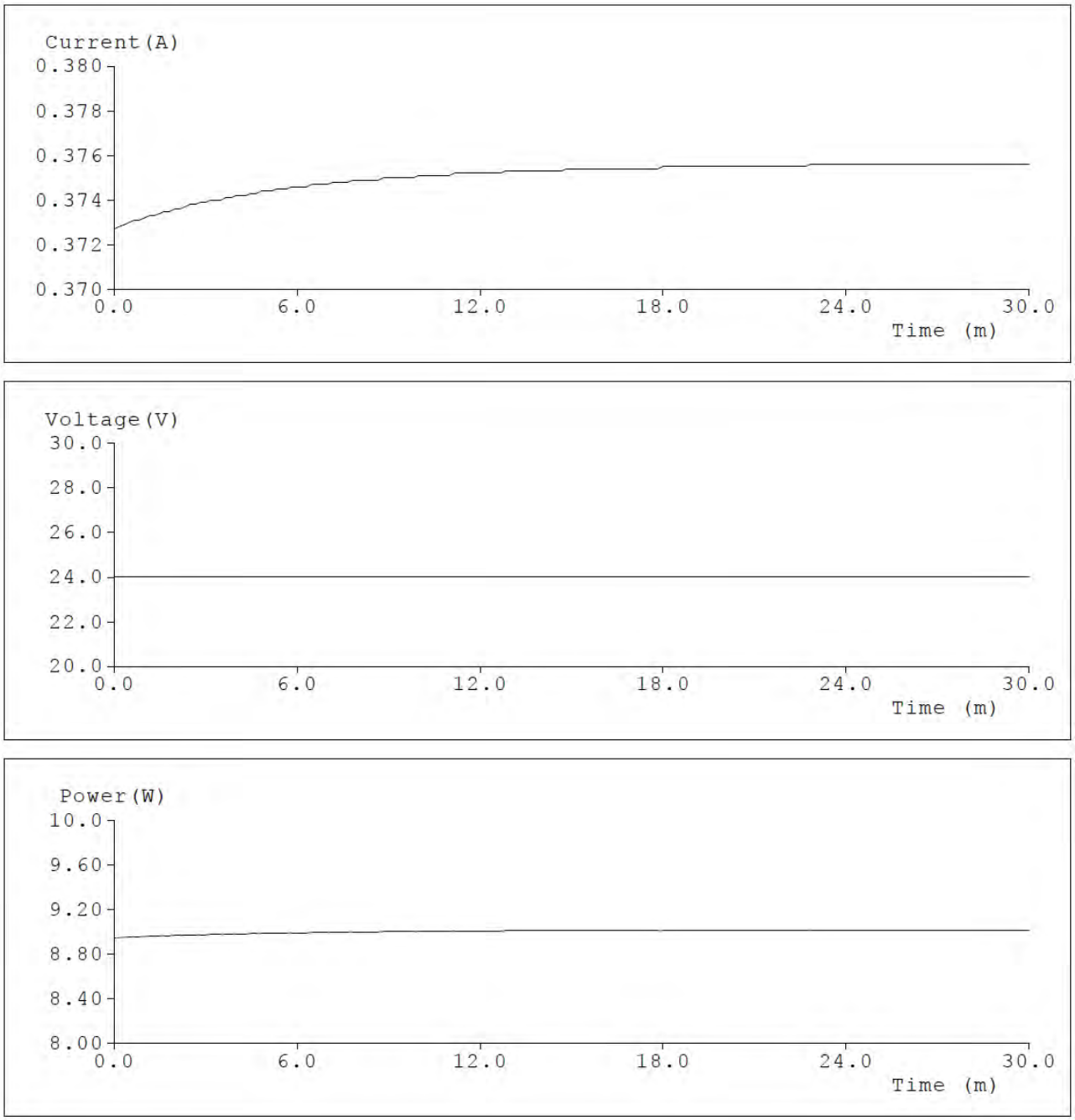
84	00h14m00s	0.3753	23.998	9.0064	925.96	0.3942	0.3806	0.2326	0.5053	3676	96.6
85	00h14m10s	0.3753	23.998	9.0064	925.74	0.3941	0.3805	0.2326	0.5052	3676	96.6
86	00h14m20s	0.3753	23.998	9.0064	925.81	0.3941	0.3806	0.2325	0.5053	3677	96.6
87	00h14m30s	0.3753	23.998	9.0064	925.54	0.3942	0.3806	0.2326	0.5053	3675	96.6
88	00h14m40s	0.3753	23.998	9.0064	925.77	0.3941	0.3805	0.2326	0.5053	3676	96.6
89	00h14m50s	0.3754	23.998	9.0088	925.75	0.3942	0.3805	0.2327	0.5053	3673	96.6
90	00h15m00s	0.3754	23.998	9.0088	925.6	0.3942	0.3806	0.2326	0.5053	3675	96.6
91	00h15m10s	0.3754	23.998	9.0088	925.52	0.3944	0.3805	0.2327	0.5053	3670	96.6
92	00h15m20s	0.3754	23.998	9.0088	925.94	0.3942	0.3805	0.2326	0.5053	3674	96.6
93	00h15m30s	0.3754	23.998	9.0088	925.87	0.3942	0.3805	0.2326	0.5053	3674	96.6
94	00h15m40s	0.3754	23.998	9.0088	926.11	0.394	0.3804	0.2325	0.5052	3678	96.5
95	00h15m50s	0.3754	23.998	9.0088	926.27	0.3941	0.3806	0.2325	0.5053	3676	96.5
96	00h16m00s	0.3754	23.998	9.0088	925.56	0.3942	0.3805	0.2326	0.5053	3673	96.7
97	00h16m10s	0.3754	23.998	9.0088	925.19	0.3942	0.3804	0.2326	0.5052	3674	96.6
98	00h16m20s	0.3754	23.998	9.0088	926.07	0.3941	0.3805	0.2326	0.5053	3675	96.6
99	00h16m30s	0.3754	23.998	9.0088	925.97	0.3942	0.3806	0.2326	0.5053	3675	96.6
100	00h16m40s	0.3754	23.998	9.0088	925.84	0.3941	0.3805	0.2326	0.5053	3676	96.6
101	00h16m50s	0.3754	23.998	9.0088	925.46	0.3943	0.3807	0.2326	0.5054	3674	96.6
102	00h17m00s	0.3754	23.998	9.0088	925.76	0.3942	0.3806	0.2326	0.5053	3674	96.6
103	00h17m10s	0.3754	23.998	9.0088	926.06	0.3942	0.3806	0.2326	0.5053	3675	96.6
104	00h17m20s	0.3754	23.998	9.0088	925.67	0.3939	0.3803	0.2326	0.5051	3678	96.6
105	00h17m30s	0.3754	23.998	9.0088	926.01	0.3941	0.3804	0.2326	0.5052	3676	96.6
106	00h17m40s	0.3754	23.998	9.0088	925.78	0.3941	0.3805	0.2326	0.5053	3677	96.6
107	00h17m50s	0.3754	23.998	9.0088	925.6	0.3941	0.3804	0.2326	0.5052	3675	96.6
108	00h18m00s	0.3755	23.998	9.0112	925.67	0.3942	0.3806	0.2326	0.5053	3674	96.6
109	00h18m10s	0.3755	23.998	9.0112	925.88	0.3942	0.3805	0.2327	0.5053	3673	96.6
110	00h18m20s	0.3755	23.998	9.0112	925.71	0.3941	0.3805	0.2326	0.5053	3675	96.6
111	00h18m30s	0.3755	23.998	9.0112	925.99	0.3942	0.3807	0.2325	0.5054	3677	96.6
112	00h18m40s	0.3755	23.998	9.0112	925.65	0.3942	0.3805	0.2327	0.5053	3674	96.6
113	00h18m50s	0.3755	23.998	9.0112	925.83	0.3941	0.3806	0.2325	0.5053	3676	96.6
114	00h19m00s	0.3755	23.998	9.0112	925.91	0.3941	0.3805	0.2326	0.5052	3675	96.6

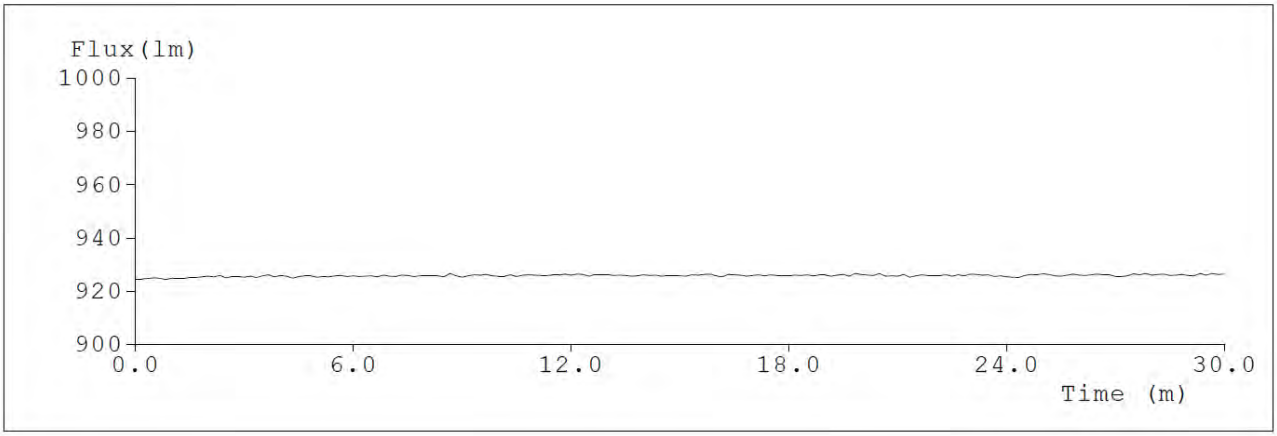
115	00h19m10s	0.3755	23.998	9.0112	925.49	0.3941	0.3804	0.2326	0.5052	3675	96.7
116	00h19m20s	0.3755	23.998	9.0112	925.87	0.3941	0.3805	0.2326	0.5052	3676	96.6
117	00h19m30s	0.3755	23.998	9.0112	926.13	0.3941	0.3805	0.2326	0.5053	3675	96.5
118	00h19m40s	0.3755	23.998	9.0112	925.5	0.3942	0.3805	0.2327	0.5053	3672	96.6
119	00h19m50s	0.3755	23.998	9.0112	926.51	0.3942	0.3806	0.2326	0.5053	3674	96.5
120	00h20m00s	0.3755	23.998	9.0112	926.13	0.3943	0.3807	0.2327	0.5054	3672	96.6
121	00h20m10s	0.3755	23.998	9.0112	925.81	0.3941	0.3804	0.2326	0.5052	3675	96.6
122	00h20m20s	0.3755	23.998	9.0112	925.69	0.3943	0.3806	0.2327	0.5053	3673	96.6
123	00h20m30s	0.3755	23.998	9.0112	926.51	0.3942	0.3806	0.2326	0.5053	3674	96.6
124	00h20m40s	0.3755	23.998	9.0112	925.47	0.3941	0.3804	0.2327	0.5052	3674	96.6
125	00h20m50s	0.3755	23.998	9.0112	925.65	0.3941	0.3806	0.2326	0.5053	3677	96.6
126	00h21m00s	0.3755	23.998	9.0112	925.46	0.3942	0.3807	0.2326	0.5053	3675	96.6
127	00h21m10s	0.3755	23.998	9.0112	926.17	0.3942	0.3804	0.2327	0.5052	3673	96.6
128	00h21m20s	0.3755	23.998	9.0112	925.15	0.3942	0.3805	0.2327	0.5053	3673	96.6
129	00h21m30s	0.3755	23.998	9.0112	925.65	0.3941	0.3804	0.2326	0.5052	3676	96.6
130	00h21m40s	0.3755	23.998	9.0112	925.95	0.3943	0.3807	0.2326	0.5054	3674	96.6
131	00h21m50s	0.3755	23.998	9.0112	925.7	0.3941	0.3804	0.2326	0.5052	3674	96.6
132	00h22m00s	0.3755	23.998	9.0112	925.7	0.3941	0.3806	0.2326	0.5053	3676	96.6
133	00h22m10s	0.3755	23.998	9.0112	925.78	0.3942	0.3804	0.2327	0.5052	3673	96.6
134	00h22m20s	0.3755	23.998	9.0112	926.01	0.3939	0.3804	0.2325	0.5052	3679	96.6
135	00h22m30s	0.3755	23.998	9.0112	925.54	0.3943	0.3804	0.2327	0.5052	3671	96.6
136	00h22m40s	0.3755	23.998	9.0112	925.94	0.3942	0.3806	0.2326	0.5053	3673	96.6
137	00h22m50s	0.3756	23.998	9.0136	925.61	0.3942	0.3804	0.2327	0.5052	3673	96.6
138	00h23m00s	0.3756	23.998	9.0136	926.31	0.3942	0.3804	0.2327	0.5052	3674	96.6
139	00h23m10s	0.3756	23.998	9.0136	926.08	0.394	0.3803	0.2326	0.5052	3676	96.6
140	00h23m20s	0.3756	23.998	9.0136	925.88	0.3943	0.3805	0.2327	0.5053	3672	96.6
141	00h23m30s	0.3756	23.998	9.0136	925.93	0.3942	0.3804	0.2327	0.5052	3673	96.6
142	00h23m40s	0.3756	23.998	9.0136	925.3	0.3942	0.3805	0.2326	0.5052	3674	96.6
143	00h23m50s	0.3756	23.998	9.0136	925.6	0.3943	0.3805	0.2327	0.5053	3672	96.6
144	00h24m00s	0.3756	23.998	9.0136	925.22	0.3941	0.3804	0.2327	0.5052	3674	96.6
145	00h24m10s	0.3756	23.998	9.0136	925.09	0.394	0.3803	0.2326	0.5051	3677	96.6

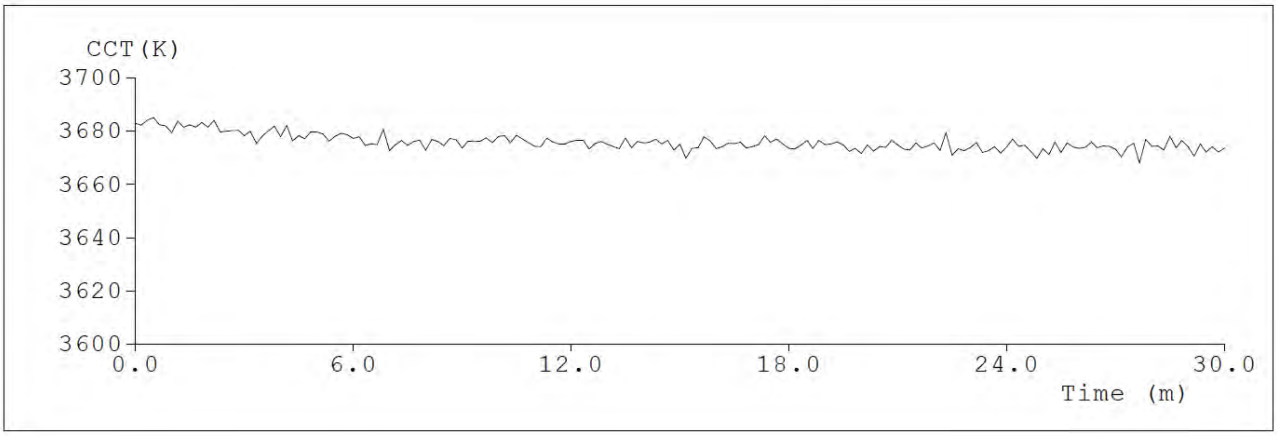
146	00h24m20s	0.3756	23.998	9.0136	924.97	0.3941	0.3804	0.2327	0.5052	3674	96.6
147	00h24m30s	0.3756	23.998	9.0136	925.73	0.3941	0.3804	0.2326	0.5052	3675	96.6
148	00h24m40s	0.3756	23.998	9.0136	926.07	0.3942	0.3803	0.2327	0.5052	3672	96.6
149	00h24m50s	0.3756	23.998	9.0136	925.99	0.3944	0.3805	0.2327	0.5053	3670	96.6
150	00h25m00s	0.3756	23.998	9.0136	926.41	0.3943	0.3807	0.2326	0.5053	3673	96.6
151	00h25m10s	0.3756	23.998	9.0136	926.07	0.3944	0.3807	0.2327	0.5054	3671	96.6
152	00h25m20s	0.3756	23.998	9.0136	925.57	0.3941	0.3806	0.2326	0.5053	3676	96.6
153	00h25m30s	0.3756	23.998	9.0136	925.52	0.3943	0.3805	0.2327	0.5053	3672	96.5
154	00h25m40s	0.3756	23.998	9.0136	925.91	0.3941	0.3805	0.2326	0.5052	3676	96.6
155	00h25m50s	0.3756	23.998	9.0136	926.2	0.3942	0.3804	0.2326	0.5052	3674	96.6
156	00h26m00s	0.3756	23.998	9.0136	925.83	0.3941	0.3803	0.2327	0.5052	3674	96.6
157	00h26m10s	0.3756	23.998	9.0136	925.74	0.3942	0.3806	0.2326	0.5053	3674	96.6
158	00h26m20s	0.3756	23.998	9.0136	925.95	0.394	0.3803	0.2326	0.5052	3676	96.6
159	00h26m30s	0.3756	23.998	9.0136	926.24	0.3942	0.3805	0.2326	0.5053	3674	96.6
160	00h26m40s	0.3756	23.998	9.0136	925.98	0.3941	0.3804	0.2326	0.5052	3674	96.6
161	00h26m50s	0.3756	23.998	9.0136	926.04	0.3942	0.3805	0.2326	0.5053	3674	96.6
162	00h27m00s	0.3756	23.998	9.0136	925.37	0.3942	0.3805	0.2327	0.5053	3673	96.6
163	00h27m10s	0.3756	23.998	9.0136	925.4	0.3943	0.3804	0.2327	0.5053	3670	96.6
164	00h27m20s	0.3756	23.998	9.0136	925.65	0.3941	0.3803	0.2327	0.5052	3674	96.6
165	00h27m30s	0.3756	23.998	9.0136	926.32	0.3941	0.3804	0.2326	0.5052	3675	96.6
166	00h27m40s	0.3756	23.998	9.0136	925.99	0.3944	0.3805	0.2328	0.5053	3668	96.6
167	00h27m50s	0.3756	23.998	9.0136	926.47	0.394	0.3804	0.2326	0.5052	3677	96.6
168	00h28m00s	0.3756	23.998	9.0136	925.81	0.3941	0.3804	0.2327	0.5052	3674	96.6
169	00h28m10s	0.3756	23.998	9.0136	926.14	0.3941	0.3803	0.2327	0.5052	3674	96.6
170	00h28m20s	0.3756	23.998	9.0136	926.25	0.3943	0.3807	0.2326	0.5053	3673	96.6
171	00h28m30s	0.3756	23.998	9.0136	925.74	0.394	0.3803	0.2326	0.5052	3678	96.6
172	00h28m40s	0.3756	23.998	9.0136	925.9	0.3941	0.3803	0.2327	0.5052	3674	96.6
173	00h28m50s	0.3756	23.998	9.0136	926.07	0.394	0.3804	0.2326	0.5052	3676	96.6
174	00h29m00s	0.3756	23.998	9.0136	925.74	0.3942	0.3805	0.2326	0.5053	3674	96.6
175	00h29m10s	0.3756	23.998	9.0136	925.62	0.3943	0.3804	0.2328	0.5052	3671	96.6
176	00h29m20s	0.3756	23.998	9.0136	926.47	0.3941	0.3804	0.2326	0.5052	3675	96.6

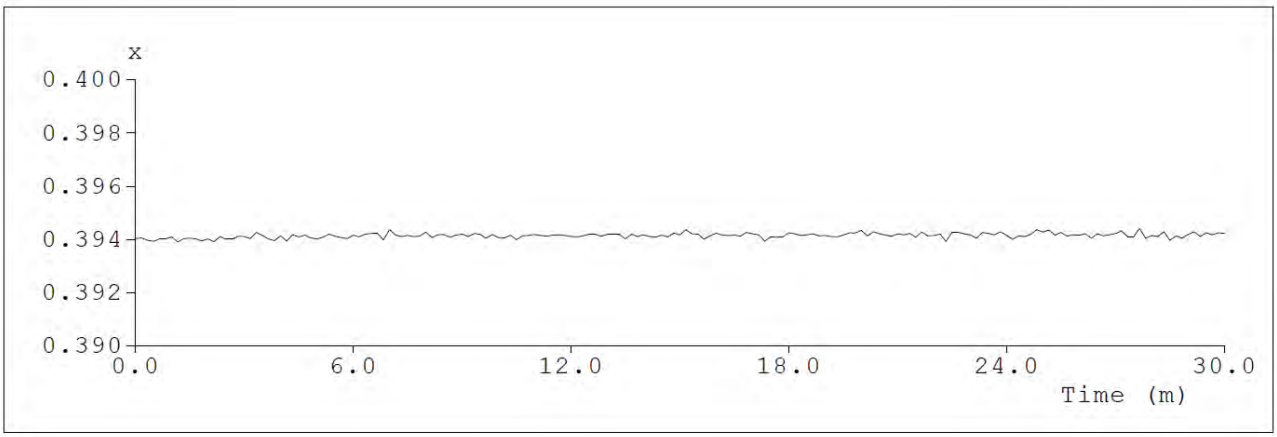
177	00h29m30s	0.3756	23.998	9.0136	925.83	0.3942	0.3804	0.2327	0.5052	3672	96.6
178	00h29m40s	0.3756	23.998	9.0136	926.52	0.3942	0.3805	0.2326	0.5053	3674	96.6
179	00h29m50s	0.3756	23.998	9.0136	926.14	0.3942	0.3805	0.2327	0.5053	3672	96.6
180	00h30m00s	0.3756	23.998	9.0136	926.23	0.3942	0.3806	0.2326	0.5053	3674	96.6

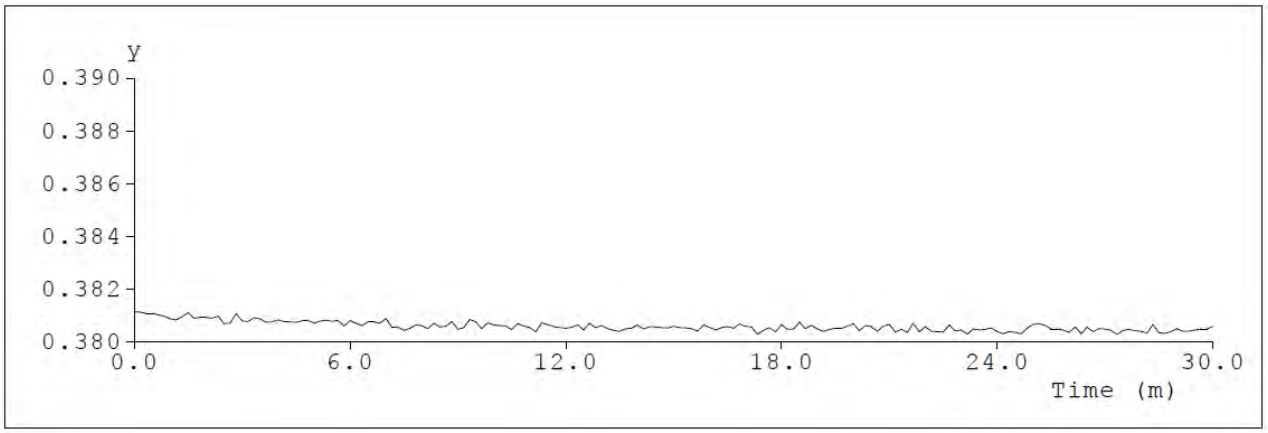
Test curves

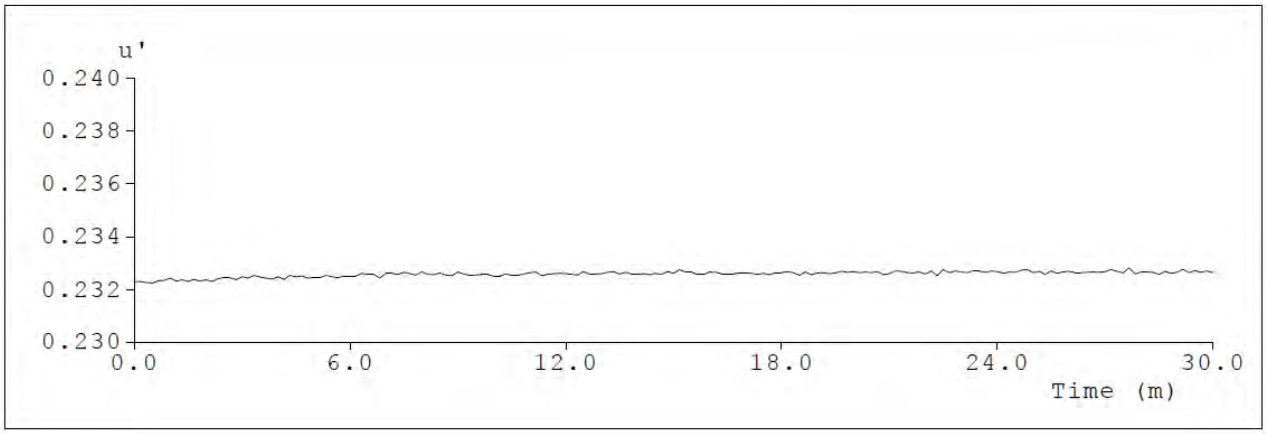


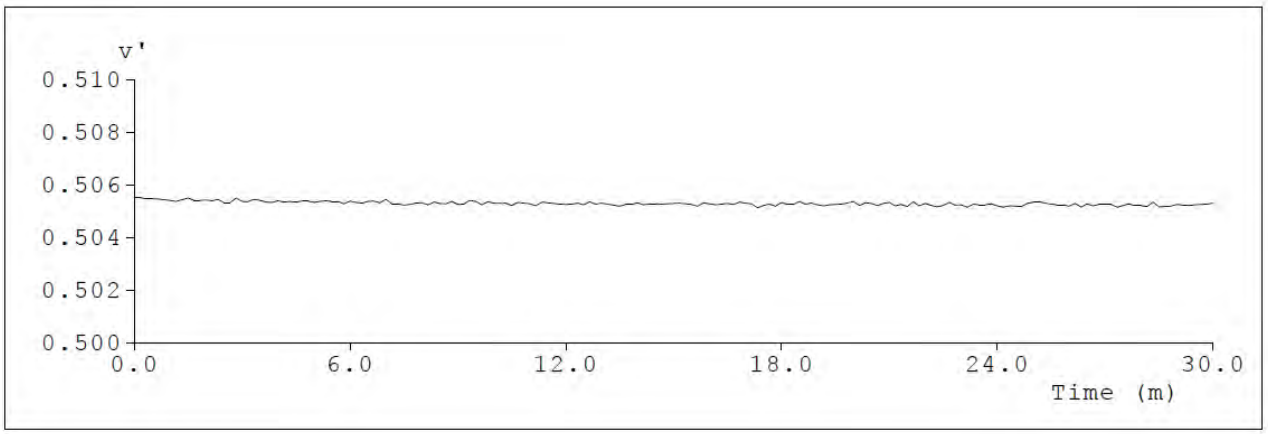

Flux(lm)
1000
980
960
940
920
900
0.0
6.0
12.0
18.0
24.0
30.0
Time (m)


CCT(K)
3700
3680
3660
3640
3620
3600
0.0
6.0
12.0
18.0
24.0
30.0
Time (m)


x
0.400
0.398
0.396
0.394
0.392
0.390
0.0
6.0
12.0
18.0
24.0
30.0
Time (m)


y
0.390
0.388
0.386
0.384
0.382
0.380
0.0
6.0
12.0
18.0
24.0
30.0
Time (m)


u'
0.240
0.238
0.236
0.234
0.232
0.230
0.0
6.0
12.0
18.0
24.0
30.0
Time (m)

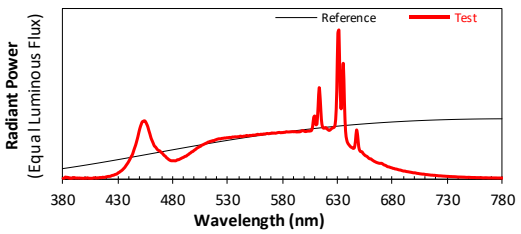

v'
0.510
0.508
0.506
0.504
0.502
0.500
0.0
6.0
12.0
18.0
24.0
30.0
Time (m)

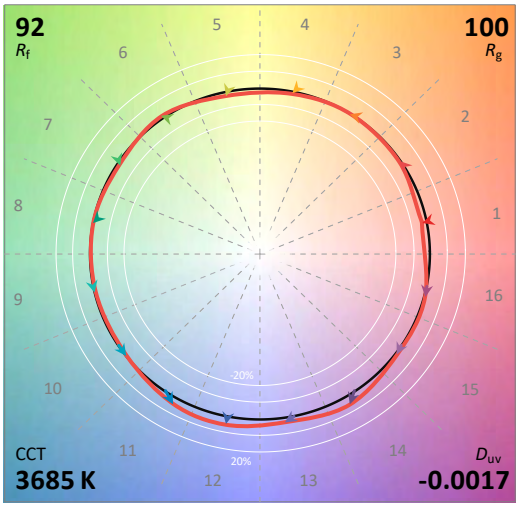
*5.2 ANSI/IES TM-30-18 Color Rendition Report

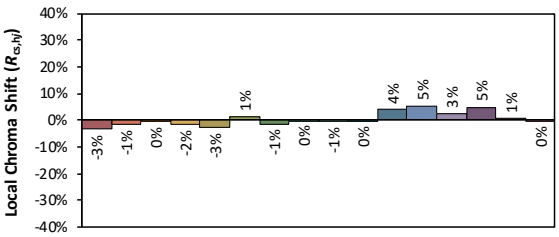
ANSI/IES TM-30-18 Color Rendition Report

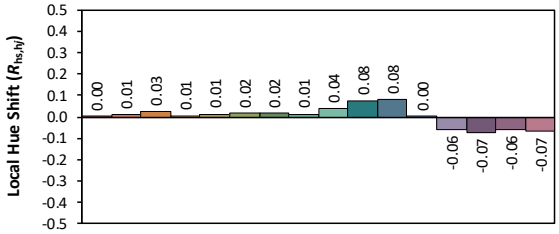
Source: Manufacturer:

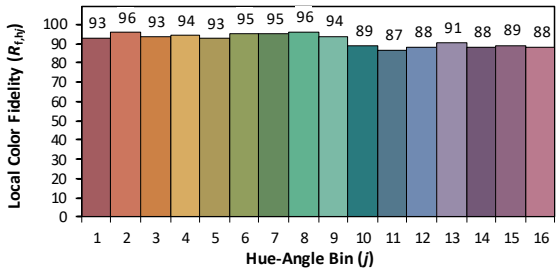
Date: 2023/9/15 Model: LCETHY-1000-NL27-DF-I-10

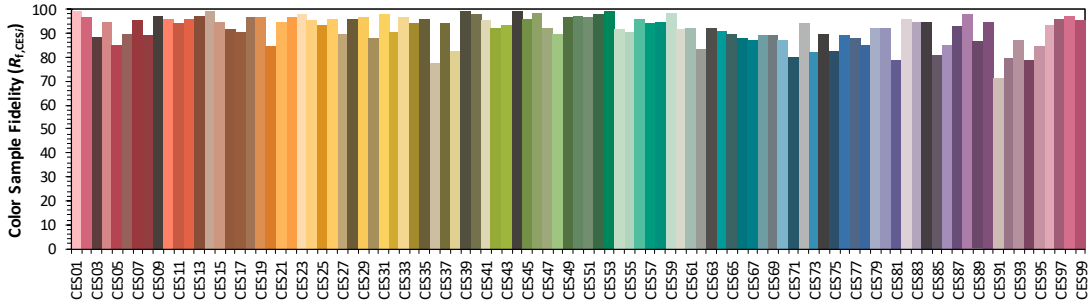












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

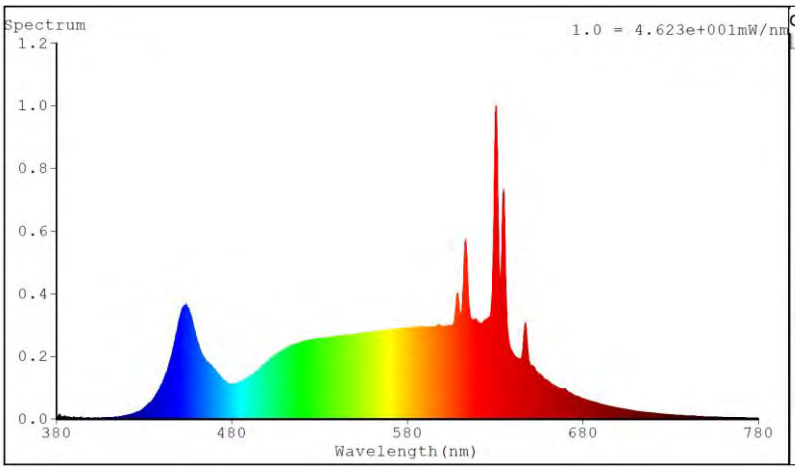
x	0.3939
y	0.3811
u'	0.2322
v'	0.5055

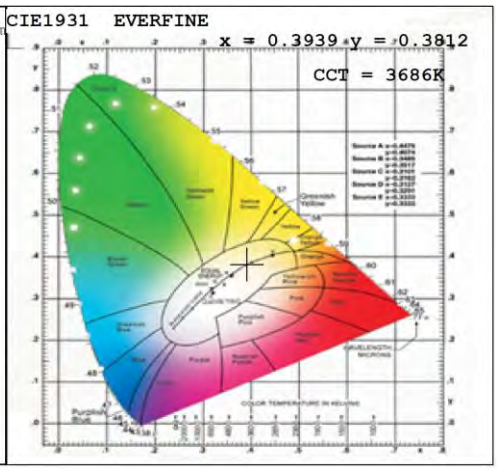
CIE 13.3-1995 (CRI)

R_a	96
R_9	80

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	0.0021	414	0.0067	448	0.2621	482	0.1114	516	0.2382
381	0.0024	415	0.006	449	0.2927	483	0.1135	517	0.2369
382	0.0099	416	0.0088	450	0.3188	484	0.1183	518	0.2411
383	0.0069	417	0.0074	451	0.3391	485	0.1182	519	0.2436
384	0.0082	418	0.0085	452	0.3557	486	0.1218	520	0.2464
385	0.0031	419	0.0106	453	0.3591	487	0.1251	521	0.2483
386	0.0052	420	0.0123	454	0.3626	488	0.1289	522	0.2499
387	0.001	421	0.0138	455	0.3561	489	0.1319	523	0.2488
388	0.0046	422	0.0141	456	0.3422	490	0.1352	524	0.2514
389	0.0026	423	0.0147	457	0.3256	491	0.1396	525	0.2524
390	0.0071	424	0.0183	458	0.3011	492	0.1409	526	0.2532
391	0.0038	425	0.0203	459	0.2788	493	0.1472	527	0.2548
392	0.0035	426	0.0216	460	0.2542	494	0.1511	528	0.2541
393	0.004	427	0.025	461	0.2374	495	0.1574	529	0.2565
394	0.003	428	0.0272	462	0.2212	496	0.1614	530	0.2561
395	0.004	429	0.0296	463	0.2048	497	0.1677	531	0.2578
396	0.0022	430	0.036	464	0.1988	498	0.17	532	0.2582
397	0.0029	431	0.0392	465	0.1892	499	0.1763	533	0.2574
398	0.0016	432	0.0447	466	0.1807	500	0.1808	534	0.2609
399	0.0025	433	0.0493	467	0.1761	501	0.1861	535	0.2603
400	0.0028	434	0.0551	468	0.1732	502	0.1924	536	0.2616
401	0.0024	435	0.0624	469	0.1655	503	0.1953	537	0.262
402	0.0053	436	0.0696	470	0.1605	504	0.2002	538	0.2614
403	0.0029	437	0.0797	471	0.1527	505	0.2024	539	0.2628
404	0.0023	438	0.0897	472	0.1448	506	0.2087	540	0.2622
405	0.0021	439	0.0996	473	0.1402	507	0.2116	541	0.2659
406	0.0019	440	0.1117	474	0.1316	508	0.2149	542	0.2653
407	0.0026	441	0.1245	475	0.1263	509	0.2185	543	0.2634
408	0.0053	442	0.1386	476	0.1201	510	0.2216	544	0.2658
409	0.0046	443	0.1502	477	0.1159	511	0.2248	545	0.2665
410	0.0032	444	0.171	478	0.1126	512	0.2293	546	0.2671
411	0.0049	445	0.1916	479	0.112	513	0.2301	547	0.2707
412	0.0045	446	0.2112	480	0.1119	514	0.2341	548	0.2682
413	0.0062	447	0.2362	481	0.1122	515	0.2341	549	0.2687

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
550	0.271	599	0.2989	648	0.2688	697	0.039	746	0.0085
551	0.2699	600	0.2955	649	0.1989	698	0.0374	747	0.0078
552	0.2715	601	0.2952	650	0.1752	699	0.0363	748	0.0079
553	0.2728	602	0.297	651	0.1689	700	0.0364	749	0.0082
554	0.272	603	0.298	652	0.168	701	0.0349	750	0.0079
555	0.2738	604	0.2978	653	0.1574	702	0.0331	751	0.0073
556	0.2752	605	0.299	654	0.1502	703	0.0324	752	0.007
557	0.2778	606	0.3018	655	0.144	704	0.031	753	0.0068
558	0.2757	607	0.3262	656	0.1408	705	0.0299	754	0.0068
559	0.2761	608	0.3825	657	0.1359	706	0.0291	755	0.0068
560	0.2785	609	0.3916	658	0.1288	707	0.0281	756	0.0061
561	0.277	610	0.3377	659	0.1243	708	0.0282	757	0.0062
562	0.2791	611	0.3429	660	0.1239	709	0.0268	758	0.0061
563	0.2799	612	0.4507	661	0.1181	710	0.0255	759	0.0062
564	0.2797	613	0.5703	662	0.1134	711	0.0251	760	0.0059
565	0.2821	614	0.4917	663	0.1088	712	0.0243	761	0.0056
566	0.2829	615	0.372	664	0.1055	713	0.0234	762	0.005
567	0.2813	616	0.325	665	0.1019	714	0.0226	763	0.0048
568	0.2828	617	0.316	666	0.0995	715	0.0216	764	0.0055
569	0.2837	618	0.3174	667	0.0974	716	0.0217	765	0.0053
570	0.2863	619	0.3202	668	0.0959	717	0.0206	766	0.005
571	0.2846	620	0.3124	669	0.0959	718	0.0209	767	0.0044
572	0.2859	621	0.307	670	0.0953	719	0.0196	768	0.0045
573	0.2845	622	0.3022	671	0.0907	720	0.019	769	0.0046
574	0.2856	623	0.3054	672	0.086	721	0.0183	770	0.0047
575	0.2877	624	0.3119	673	0.0837	722	0.0173	771	0.0043
576	0.289	625	0.317	674	0.0804	723	0.0174	772	0.0044
577	0.2894	626	0.3195	675	0.0755	724	0.0169	773	0.0043
578	0.2874	627	0.3258	676	0.0739	725	0.0163	774	0.0044
579	0.2888	628	0.3696	677	0.0724	726	0.0157	775	0.0039
580	0.2884	629	0.5515	678	0.0693	727	0.0154	776	0.0038
581	0.2904	630	0.9101	679	0.0678	728	0.0148	777	0.004
582	0.29	631	0.9293	680	0.0646	729	0.0143	778	0.0038
583	0.2938	632	0.5724	681	0.0637	730	0.014	779	0.0035
584	0.2927	633	0.4373	682	0.0609	731	0.0137	780	0.0035
585	0.2924	634	0.5983	683	0.0601	732	0.0128		
586	0.2927	635	0.7199	684	0.0583	733	0.013		
587	0.2933	636	0.4741	685	0.0561	734	0.0123		
588	0.2938	637	0.2976	686	0.0542	735	0.0122		
589	0.2945	638	0.2451	687	0.0535	736	0.012		
590	0.2935	639	0.2231	688	0.0509	737	0.0116		
591	0.2947	640	0.213	689	0.0488	738	0.011		
592	0.2928	641	0.2042	690	0.0471	739	0.0103		
593	0.2927	642	0.1971	691	0.0473	740	0.01		
594	0.2931	643	0.1945	692	0.0449	741	0.0099		
595	0.2932	644	0.1893	693	0.0438	742	0.0097		
596	0.2947	645	0.1936	694	0.0428	743	0.0095		
597	0.2986	646	0.2348	695	0.0415	744	0.0092		
598	0.3008	647	0.3041	696	0.0403	745	0.0091		

6. Goniophotometer Test results for LCETHY-1000-NL27-DF-I-10

6.1 Test Data

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

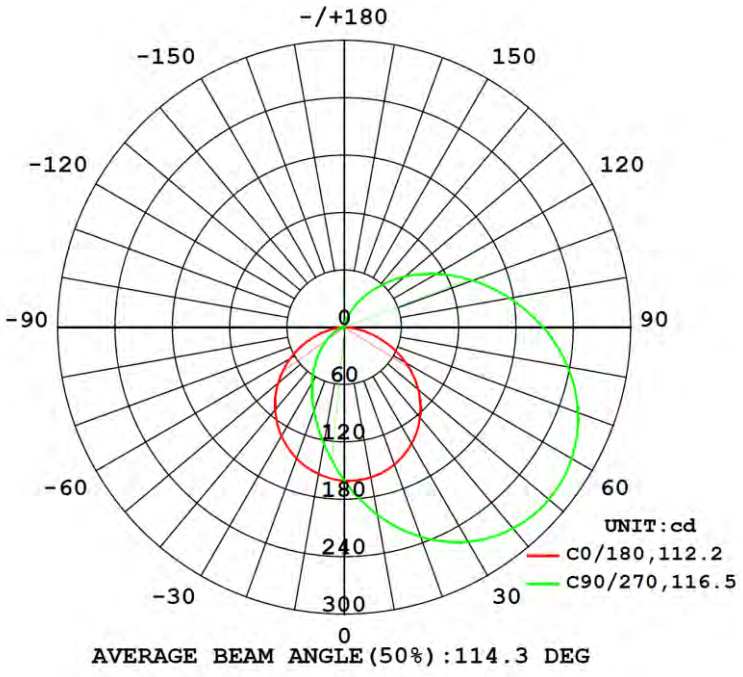
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current(A)	Power Factor	Power(W)
24	--	0.38	1.0000	9.12

Optical Measurement

Luminous Flux (lm)	Efficacy(lm/W)	Imax (cd)	η up (%)	η down (%)
915.448	100.38	279.8	21.8	78.2

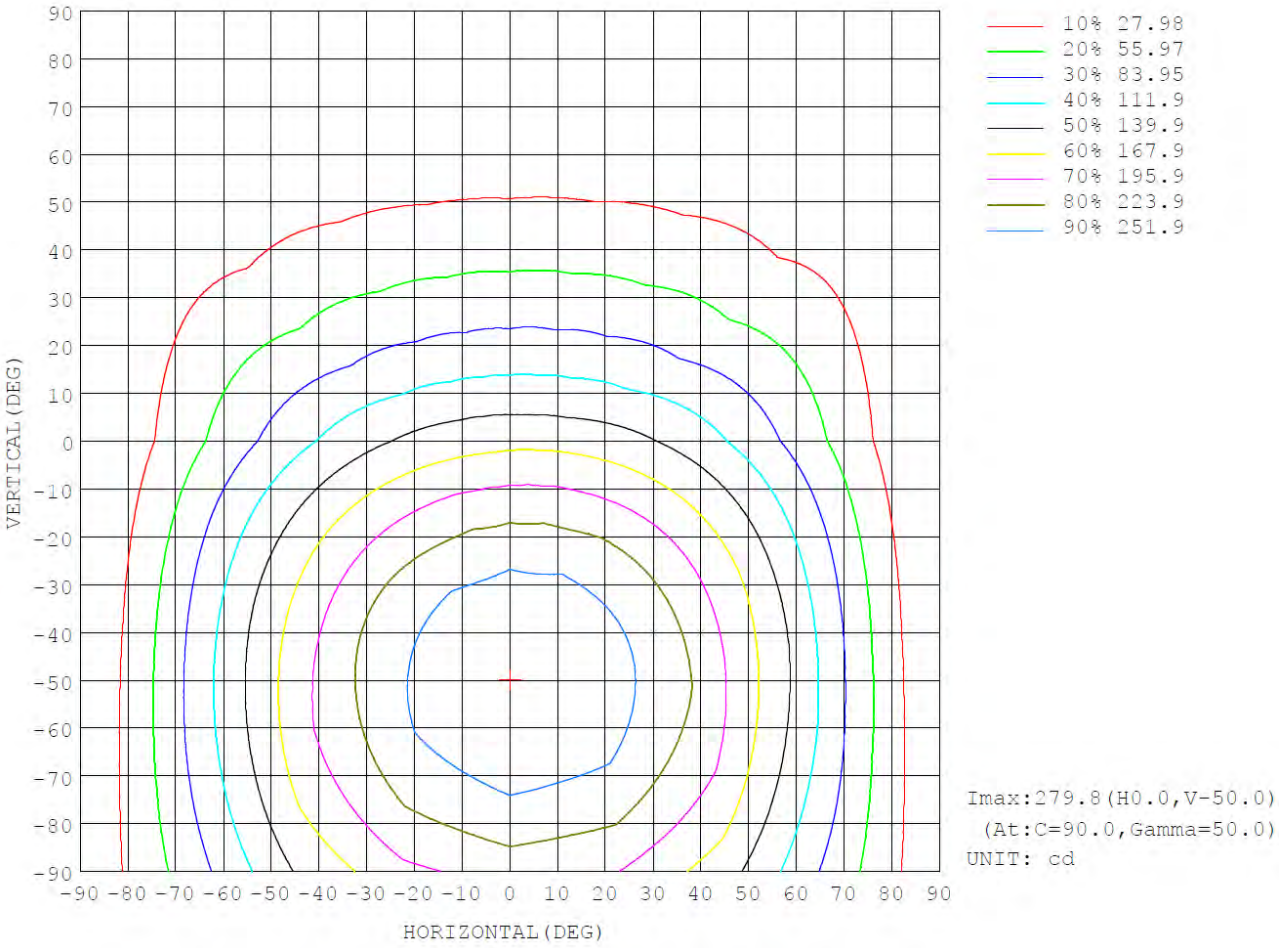
6.2 Luminous Intensity Distribution



6.3 Zonal Flux Diagram

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	159.5	187.8	198.8	184.4	155.9	132.1	124.0	133.5	0- 10	15.26	15.26	1.67,1.67
20	152.9	210.9	233.1	204.2	146.2	104.7	93.26	107.4	10- 20	44.80	60.06	6.56,6.56
30	140.8	227.1	258.9	217.3	131.7	79.62	67.88	82.89	20- 30	71.16	131.2	14.3,14.3
40	123.4	235.3	274.6	222.6	113.0	57.18	46.44	60.40	30- 40	91.93	223.1	24.4,24.4
50	101.1	234.7	279.8	219.9	90.67	37.36	28.94	40.03	40- 50	105.0	328.2	35.8,35.8
60	74.69	225.3	274.9	209.5	65.63	21.06	15.63	22.85	50- 60	109.4	437.6	47.8,47.8
70	45.64	207.6	260.4	192.0	39.25	9.378	6.737	10.26	60- 70	105.2	542.8	59.3,59.3
80	17.71	182.6	237.5	168.7	14.84	3.040	1.828	3.244	70- 80	94.03	636.8	69.6,69.6
90	2.578	152.5	208.4	141.3	2.255	1.434	0.6861	1.294	80- 90	79.10	715.9	78.2,78.2
100	2.384	122.0	176.1	113.8	2.122	1.125	0.6402	0.8812	90-100	64.30	780.2	85.2,85.2
110	2.105	94.12	143.4	88.77	1.931	0.6633	0.5372	0.4712	100-110	49.70	829.9	90.7,90.7
120	1.730	69.64	112.0	66.65	1.660	0.3256	0.4058	0.2604	110-120	36.02	865.9	94.6,94.6
130	1.335	48.27	82.65	47.09	1.335	0.2642	0.3227	0.2600	120-130	24.14	890.0	97.2,97.2
140	0.9586	30.26	55.76	30.26	1.028	0.3238	0.3200	0.3306	130-140	14.48	904.5	98.8,98.8
150	0.6360	16.46	32.25	16.15	0.7260	0.3968	0.3413	0.3524	140-150	7.330	911.9	99.6,99.6
160	0.3766	7.219	14.37	6.480	0.4968	0.3916	0.3252	0.3349	150-160	2.830	914.7	99.9,99.9
170	0.3183	1.912	3.843	1.762	0.3635	0.3430	0.3136	0.3073	160-170	0.6975	915.4	100,100
180	0.3737	0.3530	0.2176	0.3000	0.3716	0.3631	0.3371	0.3098	170-180	0.0688	915.4	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	160	161	161	160	160	160	160	160	160	161	161	160	160	160	160	160
5	161	168	174	179	180	177	173	166	159	152	146	143	142	143	147	153
10	160	175	188	196	199	194	184	170	156	142	132	126	124	127	134	145
15	157	180	200	213	217	210	195	174	152	132	118	110	108	111	120	136
20	153	184	211	228	233	224	204	176	146	121	105	95.7	93.3	97.0	107	126
25	148	186	220	241	247	237	212	177	139	110	91.8	82.3	80.0	83.8	94.9	115
30	141	187	227	252	259	246	217	176	132	98.9	79.6	70.2	67.9	71.7	82.9	104
35	133	186	232	261	268	254	221	174	123	87.2	68.1	58.9	56.7	60.4	71.4	93.0
40	123	183	235	267	275	259	223	170	113	75.6	57.2	48.5	46.4	49.9	60.4	81.4
45	113	179	236	270	279	262	222	165	102	64.2	46.9	39.0	37.2	40.3	49.9	69.8
50	101	173	235	271	280	262	220	158	90.7	53.1	37.4	30.5	28.9	31.6	40.0	58.3
55	88.3	165	231	269	279	260	216	150	78.4	42.4	28.7	23.0	21.7	23.9	31.0	47.1
60	74.7	156	225	265	275	255	209	141	65.6	32.3	21.1	16.6	15.6	17.3	22.9	36.3
65	60.3	145	217	259	269	249	202	131	52.5	23.1	14.6	11.3	10.6	11.8	15.9	26.3
70	45.6	133	208	250	260	240	192	119	39.3	15.2	9.38	7.19	6.74	7.50	10.3	17.4
75	31.1	119	196	239	250	230	181	107	26.5	8.89	5.56	4.16	3.84	4.32	6.07	10.3
80	17.7	105	183	227	238	218	169	93.8	14.8	4.67	3.04	2.08	1.83	2.11	3.24	5.42
85	7.29	89.4	168	212	224	204	155	80.4	6.04	2.54	1.63	0.92	0.72	0.85	1.61	2.82
90	2.58	74.7	152	197	208	189	141	67.6	2.25	2.01	1.43	0.86	0.69	0.77	1.29	1.97
95	2.45	61.8	137	181	192	174	127	56.5	2.08	1.62	1.32	0.83	0.67	0.73	1.11	1.30
100	2.38	51.3	122	165	176	159	114	47.4	2.12	0.99	1.12	0.77	0.64	0.67	0.88	0.63
105	2.27	42.6	108	148	160	143	101	39.9	2.06	0.48	0.89	0.69	0.59	0.60	0.66	0.26
110	2.11	35.3	94.1	132	143	128	88.8	32.2	1.93	0.23	0.66	0.60	0.54	0.52	0.47	0.20
115	1.92	29.1	81.5	117	127	113	77.4	25.9	1.82	0.20	0.47	0.50	0.47	0.44	0.33	0.23
120	1.73	23.7	69.6	102	112	99.4	66.6	22.0	1.66	0.23	0.33	0.42	0.41	0.36	0.26	0.30
125	1.53	19.1	58.6	87.7	97.1	85.8	56.5	18.4	1.50	0.30	0.27	0.35	0.35	0.31	0.25	0.40
130	1.34	15.2	48.3	74.1	82.6	72.8	47.1	15.2	1.34	0.38	0.26	0.32	0.32	0.29	0.26	0.48
135	1.14	12.0	38.8	61.2	68.9	60.4	38.3	12.3	1.18	0.46	0.29	0.31	0.32	0.29	0.29	0.53
140	0.96	9.26	30.3	49.0	55.8	48.6	30.3	9.73	1.03	0.53	0.32	0.32	0.32	0.31	0.33	0.54
145	0.79	6.98	22.8	37.8	43.5	37.8	23.1	7.45	0.88	0.57	0.36	0.33	0.33	0.33	0.35	0.53
150	0.64	5.09	16.5	27.8	32.3	27.9	16.1	5.56	0.73	0.57	0.40	0.35	0.34	0.33	0.35	0.48
155	0.47	3.55	11.3	19.2	22.5	19.5	10.9	3.56	0.60	0.53	0.41	0.35	0.34	0.33	0.34	0.42
160	0.38	2.34	7.22	12.3	14.4	12.6	6.48	2.24	0.50	0.47	0.39	0.34	0.33	0.32	0.33	0.37
165	0.30	1.33	4.12	7.00	8.24	6.98	3.52	1.42	0.40	0.40	0.36	0.33	0.31	0.31	0.32	0.34
170	0.32	0.67	1.91	3.28	3.84	2.70	1.76	0.84	0.36	0.36	0.34	0.34	0.31	0.29	0.31	0.34
175	0.36	0.40	0.65	0.96	1.25	0.85	0.74	0.45	0.37	0.37	0.35	0.34	0.32	0.28	0.30	0.33
180	0.37	0.36	0.35	0.32	0.22	0.27	0.30	0.30	0.37	0.37	0.36	0.36	0.34	0.29	0.31	0.32

7. Integrating Sphere Test Results for LCETHY-1000-NL27-DF-I-21

7.1 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	0.7393	23.998	17.742	1795.8	0.3931	0.3818	0.2314	0.5057	3711	96
1	00h00m10s	0.7404	23.998	17.768	1796.1	0.3931	0.3818	0.2314	0.5057	3711	96
2	00h00m20s	0.741	23.998	17.783	1796.1	0.3932	0.382	0.2314	0.5058	3711	96
3	00h00m30s	0.7415	23.998	17.795	1795.1	0.3932	0.3818	0.2315	0.5057	3708	96
4	00h00m40s	0.742	23.998	17.807	1796.1	0.3932	0.3816	0.2315	0.5056	3708	96
5	00h00m50s	0.7425	23.998	17.819	1797.6	0.3932	0.3818	0.2314	0.5057	3709	96
6	00h01m00s	0.7429	23.998	17.828	1797.1	0.3934	0.3818	0.2315	0.5057	3705	96.1
7	00h01m10s	0.7432	23.998	17.835	1796.6	0.3932	0.3815	0.2316	0.5056	3705	96
8	00h01m20s	0.7436	23.998	17.845	1797.6	0.3932	0.3817	0.2315	0.5056	3708	96
9	00h01m30s	0.744	23.998	17.855	1796.6	0.3932	0.3815	0.2316	0.5056	3707	96
10	00h01m40s	0.7443	23.998	17.862	1798.2	0.3931	0.3815	0.2315	0.5055	3709	96.1
11	00h01m50s	0.7446	23.998	17.869	1799.2	0.3933	0.3816	0.2316	0.5056	3705	96.1
12	00h02m00s	0.745	23.998	17.879	1797.7	0.3931	0.3813	0.2316	0.5055	3706	96.1
13	00h02m10s	0.7452	23.998	17.883	1797.7	0.3934	0.3815	0.2317	0.5056	3702	96.1
14	00h02m20s	0.7456	23.998	17.893	1799.7	0.3932	0.3814	0.2316	0.5055	3705	96.1
15	00h02m30s	0.7458	23.998	17.898	1799.4	0.3933	0.3815	0.2317	0.5056	3703	96.1
16	00h02m40s	0.7461	23.998	17.905	1799.3	0.3933	0.3814	0.2317	0.5055	3702	96.1
17	00h02m50s	0.7464	23.998	17.912	1800	0.3932	0.3813	0.2317	0.5055	3704	96.1
18	00h03m00s	0.7466	23.998	17.917	1799.5	0.3932	0.3814	0.2317	0.5055	3704	96.1
19	00h03m10s	0.7469	23.998	17.924	1800.7	0.3932	0.3812	0.2317	0.5054	3704	96.1
20	00h03m20s	0.7471	23.998	17.929	1799.9	0.3935	0.3814	0.2318	0.5056	3699	96.1
21	00h03m30s	0.7474	23.998	17.936	1799.6	0.3934	0.3812	0.2319	0.5055	3698	96.1

22	00h03m40s	0.7476	23.998	17.941	1798.7	0.3934	0.3813	0.2318	0.5055	3700	96.2
23	00h03m50s	0.7478	23.998	17.946	1800.4	0.3936	0.3815	0.2318	0.5056	3698	96.1
24	00h04m00s	0.748	23.998	17.951	1800.1	0.3934	0.3813	0.2318	0.5055	3698	96.2
25	00h04m10s	0.7482	23.998	17.955	1801.3	0.3934	0.3812	0.2318	0.5055	3699	96.1
26	00h04m20s	0.7485	23.998	17.963	1800.5	0.3934	0.3812	0.2319	0.5054	3698	96.2
27	00h04m30s	0.7486	23.998	17.965	1800.1	0.3933	0.3812	0.2318	0.5054	3700	96.2
28	00h04m40s	0.7488	23.998	17.97	1800.9	0.3934	0.3814	0.2318	0.5055	3700	96.1
29	00h04m50s	0.749	23.998	17.975	1801.1	0.3935	0.3814	0.2318	0.5056	3697	96.2
30	00h05m00s	0.7492	23.998	17.979	1800.5	0.3934	0.3812	0.2318	0.5055	3699	96.1
31	00h05m10s	0.7494	23.998	17.984	1801.4	0.3935	0.3813	0.2318	0.5055	3698	96.2
32	00h05m20s	0.7495	23.998	17.986	1800.9	0.3933	0.3808	0.2319	0.5053	3698	96.2
33	00h05m30s	0.7497	23.998	17.991	1801.1	0.3934	0.381	0.2319	0.5054	3697	96.2
34	00h05m40s	0.7498	23.998	17.994	1801.6	0.3935	0.3811	0.2319	0.5054	3696	96.2
35	00h05m50s	0.75	23.998	17.998	1802.7	0.3935	0.3812	0.2319	0.5055	3697	96.1
36	00h06m00s	0.7501	23.998	18.001	1801.6	0.3934	0.381	0.2319	0.5054	3697	96.2
37	00h06m10s	0.7503	23.998	18.006	1802.2	0.3934	0.381	0.2319	0.5054	3697	96.2
38	00h06m20s	0.7504	23.998	18.008	1801.4	0.3935	0.3809	0.232	0.5053	3695	96.2
39	00h06m30s	0.7506	23.998	18.013	1801.5	0.3935	0.381	0.232	0.5054	3695	96.2
40	00h06m40s	0.7507	23.998	18.015	1802.2	0.3936	0.381	0.232	0.5054	3693	96.2
41	00h06m50s	0.7508	23.998	18.018	1802.7	0.3936	0.3812	0.232	0.5055	3693	96.2
42	00h07m00s	0.751	23.998	18.022	1803.4	0.3934	0.3811	0.2319	0.5054	3697	96.2
43	00h07m10s	0.7511	23.998	18.025	1801.4	0.3935	0.3809	0.232	0.5053	3694	96.2
44	00h07m20s	0.7512	23.998	18.027	1801.7	0.3938	0.3813	0.232	0.5056	3691	96.2
45	00h07m30s	0.7513	23.998	18.03	1802.6	0.3933	0.3808	0.232	0.5053	3697	96.2
46	00h07m40s	0.7514	23.998	18.032	1803.2	0.3934	0.381	0.2319	0.5054	3696	96.2
47	00h07m50s	0.7515	23.998	18.034	1801.9	0.3935	0.381	0.232	0.5054	3696	96.2
48	00h08m00s	0.7516	23.998	18.037	1802.5	0.3935	0.3808	0.2321	0.5053	3693	96.2
49	00h08m10s	0.7518	23.998	18.042	1803.7	0.3937	0.3811	0.2321	0.5055	3691	96.2
50	00h08m20s	0.7519	23.998	18.044	1803.2	0.3934	0.3809	0.232	0.5053	3697	96.2
51	00h08m30s	0.752	23.998	18.046	1802	0.3935	0.3807	0.2321	0.5053	3692	96.3
52	00h08m40s	0.7521	23.998	18.049	1802.5	0.3934	0.3808	0.232	0.5053	3696	96.3

53	00h08m50s	0.7521	23.998	18.049	1802.9	0.3936	0.3808	0.2321	0.5053	3691	96.2
54	00h09m00s	0.7522	23.998	18.051	1803.3	0.3934	0.3808	0.232	0.5053	3697	96.3
55	00h09m10s	0.7523	23.998	18.054	1803.4	0.3936	0.3808	0.2321	0.5053	3692	96.2
56	00h09m20s	0.7524	23.998	18.056	1802.7	0.3936	0.3809	0.2321	0.5053	3692	96.3
57	00h09m30s	0.7525	23.998	18.058	1802.2	0.3935	0.3808	0.2321	0.5053	3692	96.3
58	00h09m40s	0.7526	23.998	18.061	1803.2	0.3936	0.3808	0.2321	0.5053	3692	96.3
59	00h09m50s	0.7526	23.998	18.061	1803.3	0.3935	0.3809	0.232	0.5054	3693	96.3
60	00h10m00s	0.7527	23.998	18.063	1803.3	0.3937	0.3809	0.2321	0.5054	3690	96.2
61	00h10m10s	0.7528	23.998	18.066	1803	0.3936	0.3807	0.2322	0.5053	3690	96.2
62	00h10m20s	0.7529	23.998	18.068	1802.2	0.3935	0.3806	0.2322	0.5052	3692	96.3
63	00h10m30s	0.7529	23.998	18.068	1803.6	0.3936	0.3808	0.2321	0.5053	3691	96.3
64	00h10m40s	0.753	23.998	18.07	1804	0.3935	0.3808	0.2321	0.5053	3693	96.2
65	00h10m50s	0.7531	23.998	18.073	1804.1	0.3934	0.3807	0.2321	0.5052	3694	96.3
66	00h11m00s	0.7531	23.998	18.073	1803	0.3935	0.3808	0.2321	0.5053	3693	96.3
67	00h11m10s	0.7532	23.998	18.075	1801.8	0.3934	0.3805	0.2321	0.5052	3692	96.3
68	00h11m20s	0.7533	23.998	18.078	1802.8	0.3935	0.3808	0.232	0.5053	3694	96.3
69	00h11m30s	0.7533	23.998	18.078	1803.7	0.3935	0.3807	0.2321	0.5053	3692	96.3
70	00h11m40s	0.7534	23.998	18.08	1803.6	0.3936	0.3808	0.2321	0.5053	3691	96.3
71	00h11m50s	0.7535	23.998	18.082	1803.9	0.3935	0.3808	0.2321	0.5053	3692	96.3
72	00h12m00s	0.7535	23.998	18.082	1803	0.3936	0.3808	0.2321	0.5053	3690	96.3
73	00h12m10s	0.7536	23.998	18.085	1802.7	0.3936	0.3806	0.2322	0.5052	3689	96.3
74	00h12m20s	0.7536	23.998	18.085	1803.4	0.3936	0.3809	0.2321	0.5054	3691	96.3
75	00h12m30s	0.7537	23.998	18.087	1803	0.3936	0.3808	0.2321	0.5053	3691	96.3
76	00h12m40s	0.7537	23.998	18.087	1803.6	0.3936	0.3807	0.2322	0.5053	3690	96.3
77	00h12m50s	0.7538	23.998	18.09	1802.9	0.3936	0.3807	0.2322	0.5053	3690	96.3
78	00h13m00s	0.7538	23.998	18.09	1802.7	0.3934	0.3805	0.2321	0.5051	3694	96.4
79	00h13m10s	0.7538	23.998	18.09	1803.1	0.3934	0.3807	0.2321	0.5052	3693	96.4
80	00h13m20s	0.7539	23.998	18.092	1803.8	0.3936	0.3809	0.2321	0.5053	3691	96.3
81	00h13m30s	0.7539	23.998	18.092	1803.9	0.3935	0.3807	0.2321	0.5053	3693	96.2
82	00h13m40s	0.754	23.998	18.094	1804.5	0.3936	0.3807	0.2321	0.5053	3691	96.3
83	00h13m50s	0.754	23.998	18.094	1802.6	0.3935	0.3805	0.2322	0.5052	3691	96.3

84	00h14m00s	0.7541	23.998	18.097	1805.3	0.3936	0.3808	0.2322	0.5053	3690	96.2
85	00h14m10s	0.7541	23.998	18.097	1803.8	0.3935	0.3808	0.2321	0.5053	3692	96.3
86	00h14m20s	0.7541	23.998	18.097	1804.2	0.3937	0.3809	0.2322	0.5053	3689	96.3
87	00h14m30s	0.7542	23.998	18.099	1803	0.3935	0.3806	0.2322	0.5052	3691	96.3
88	00h14m40s	0.7542	23.998	18.099	1805.1	0.3935	0.3806	0.2321	0.5052	3692	96.3
89	00h14m50s	0.7542	23.998	18.099	1805	0.3935	0.3809	0.232	0.5053	3695	96.2
90	00h15m00s	0.7543	23.998	18.102	1803.7	0.3935	0.3803	0.2323	0.5051	3688	96.3
91	00h15m10s	0.7543	23.998	18.102	1804	0.3936	0.3808	0.2321	0.5053	3690	96.3
92	00h15m20s	0.7543	23.998	18.102	1803.6	0.3937	0.3808	0.2322	0.5053	3689	96.3
93	00h15m30s	0.7544	23.998	18.104	1803.2	0.3935	0.3807	0.2321	0.5052	3692	96.3
94	00h15m40s	0.7544	23.998	18.104	1804.9	0.3936	0.3807	0.2321	0.5053	3691	96.3
95	00h15m50s	0.7544	23.998	18.104	1804	0.3934	0.3806	0.2321	0.5052	3693	96.3
96	00h16m00s	0.7545	23.998	18.106	1804.4	0.3935	0.3807	0.2321	0.5053	3692	96.3
97	00h16m10s	0.7545	23.998	18.106	1805.4	0.3935	0.3807	0.2321	0.5053	3693	96.3
98	00h16m20s	0.7545	23.998	18.106	1803.4	0.3935	0.3807	0.2321	0.5053	3692	96.3
99	00h16m30s	0.7545	23.998	18.106	1804.2	0.3935	0.3808	0.2321	0.5053	3692	96.3
100	00h16m40s	0.7546	23.998	18.109	1804.1	0.3936	0.3806	0.2322	0.5052	3690	96.3
101	00h16m50s	0.7546	23.998	18.109	1805.9	0.3935	0.3807	0.2321	0.5053	3691	96.3
102	00h17m00s	0.7546	23.998	18.109	1803.3	0.3937	0.3808	0.2322	0.5053	3689	96.3
103	00h17m10s	0.7546	23.998	18.109	1803.3	0.3935	0.3806	0.2321	0.5052	3692	96.3
104	00h17m20s	0.7547	23.998	18.111	1804.1	0.3935	0.3806	0.2322	0.5052	3691	96.3
105	00h17m30s	0.7547	23.998	18.111	1804.7	0.3937	0.3807	0.2322	0.5053	3687	96.2
106	00h17m40s	0.7547	23.998	18.111	1804.2	0.3936	0.3808	0.2322	0.5053	3690	96.3
107	00h17m50s	0.7547	23.998	18.111	1804.7	0.3935	0.3807	0.2321	0.5052	3691	96.3
108	00h18m00s	0.7547	23.998	18.111	1804.3	0.3935	0.3805	0.2322	0.5051	3690	96.3
109	00h18m10s	0.7548	23.998	18.114	1805.5	0.3936	0.3807	0.2322	0.5053	3690	96.3
110	00h18m20s	0.7548	23.998	18.114	1804.8	0.3935	0.3806	0.2322	0.5052	3691	96.3
111	00h18m30s	0.7548	23.998	18.114	1804.8	0.3936	0.3808	0.2322	0.5053	3690	96.3
112	00h18m40s	0.7548	23.998	18.114	1804.3	0.3936	0.3807	0.2322	0.5052	3690	96.3
113	00h18m50s	0.7548	23.998	18.114	1802.8	0.3937	0.3806	0.2323	0.5052	3687	96.4
114	00h19m00s	0.7548	23.998	18.114	1803.1	0.3937	0.3807	0.2322	0.5053	3688	96.3

115	00h19m10s	0.7549	23.998	18.116	1804	0.3935	0.3805	0.2322	0.5052	3690	96.3
116	00h19m20s	0.7549	23.998	18.116	1803.5	0.3937	0.3806	0.2323	0.5053	3686	96.3
117	00h19m30s	0.7549	23.998	18.116	1804.7	0.3935	0.3806	0.2322	0.5052	3691	96.3
118	00h19m40s	0.7549	23.998	18.116	1804.2	0.3936	0.3806	0.2322	0.5052	3690	96.3
119	00h19m50s	0.7549	23.998	18.116	1804.8	0.3936	0.3807	0.2322	0.5053	3689	96.3
120	00h20m00s	0.7549	23.998	18.116	1805.1	0.3936	0.3807	0.2322	0.5052	3690	96.3
121	00h20m10s	0.755	23.998	18.118	1804.4	0.3936	0.3807	0.2322	0.5052	3690	96.3
122	00h20m20s	0.755	23.998	18.118	1803.8	0.3935	0.3805	0.2322	0.5052	3690	96.3
123	00h20m30s	0.755	23.998	18.118	1804.3	0.3937	0.3807	0.2322	0.5053	3689	96.3
124	00h20m40s	0.755	23.998	18.118	1804.6	0.3937	0.3807	0.2322	0.5053	3688	96.3
125	00h20m50s	0.755	23.998	18.118	1804.7	0.3937	0.3807	0.2322	0.5053	3687	96.3
126	00h21m00s	0.755	23.998	18.118	1803.6	0.3937	0.3806	0.2323	0.5053	3686	96.3
127	00h21m10s	0.7551	23.998	18.121	1804.1	0.3936	0.3806	0.2322	0.5052	3688	96.3
128	00h21m20s	0.7551	23.998	18.121	1805.2	0.3937	0.3807	0.2322	0.5053	3688	96.3
129	00h21m30s	0.7551	23.998	18.121	1803.5	0.3937	0.3806	0.2322	0.5052	3688	96.3
130	00h21m40s	0.7551	23.998	18.121	1804.4	0.3937	0.3808	0.2322	0.5053	3689	96.3
131	00h21m50s	0.7551	23.998	18.121	1804.9	0.3937	0.3807	0.2322	0.5053	3688	96.3
132	00h22m00s	0.7551	23.998	18.121	1804.1	0.3935	0.3807	0.2321	0.5053	3692	96.3
133	00h22m10s	0.7551	23.998	18.121	1803.6	0.3937	0.3806	0.2323	0.5052	3687	96.3
134	00h22m20s	0.7551	23.998	18.121	1804.8	0.3935	0.3805	0.2322	0.5052	3691	96.3
135	00h22m30s	0.7552	23.998	18.123	1804.6	0.3936	0.3807	0.2321	0.5053	3691	96.3
136	00h22m40s	0.7552	23.998	18.123	1804	0.3937	0.3808	0.2322	0.5053	3687	96.3
137	00h22m50s	0.7552	23.998	18.123	1804.5	0.3935	0.3805	0.2322	0.5052	3690	96.3
138	00h23m00s	0.7552	23.998	18.123	1804.2	0.3937	0.3806	0.2323	0.5052	3687	96.3
139	00h23m10s	0.7552	23.998	18.123	1805	0.3937	0.3806	0.2323	0.5052	3686	96.3
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146	00h24m20s	0.7553	23.998	18.126	1803.9	0.3938	0.3807	0.2323	0.5053	3685	96.3
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152	00h25m20s	0.7553	23.998	18.126	1805.5	0.3937	0.3807	0.2322	0.5053	3687	96.3
153	00h25m30s	0.7553	23.998	18.126	1804.3	0.3936	0.3805	0.2322	0.5052	3689	96.4
154	00h25m40s	0.7553	23.998	18.126	1804.8	0.3937	0.3806	0.2322	0.5052	3688	96.3
155	00h25m50s	0.7553	23.998	18.126	1804.2	0.3935	0.3804	0.2322	0.5051	3689	96.3
156	00h26m00s	0.7554	23.998	18.128	1805.3	0.3936	0.3807	0.2322	0.5053	3689	96.3
157	00h26m10s	0.7554	23.998	18.128	1804.7	0.3936	0.3806	0.2323	0.5052	3688	96.3
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174	00h29m00s	0.7554	23.998	18.128	1805.1	0.3936	0.3807	0.2322	0.5053	3689	96.3
175	00h29m10s	0.7555	23.998	18.13	1803.9	0.3936	0.3805	0.2323	0.5052	3688	96.3
176	00h29m20s	0.7555	23.998	18.13	1804.4	0.3937	0.3805	0.2323	0.5052	3687	96.3

177	00h29m30s	0.7555	23.998	18.13	1804.4	0.3937	0.3805	0.2323	0.5052	3685	96.3
178	00h29m40s	0.7555	23.998	18.13	1804.2	0.3937	0.3806	0.2323	0.5052	3686	96.3
179	00h29m50s	0.7555	23.998	18.13	1804.4	0.3937	0.3807	0.2322	0.5053	3687	96.3
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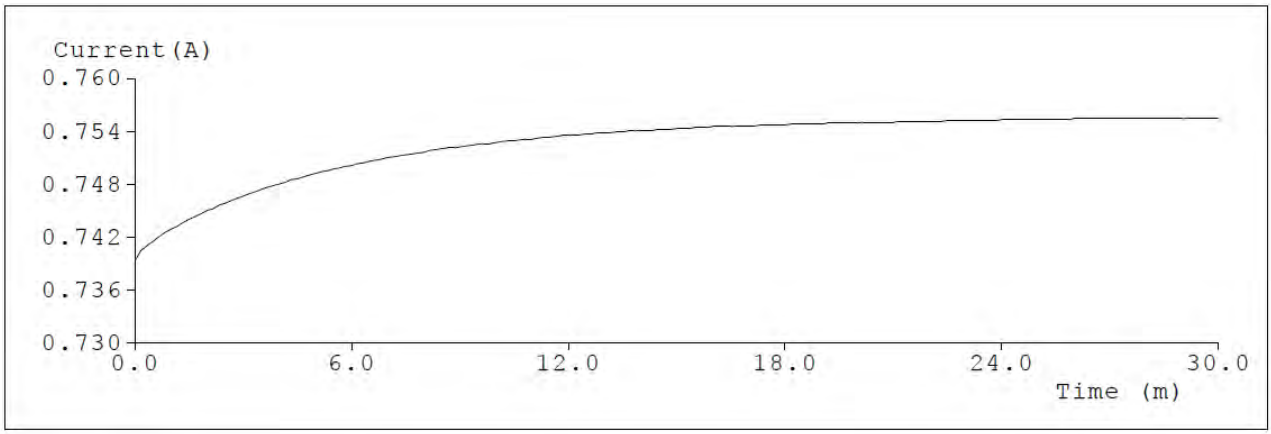
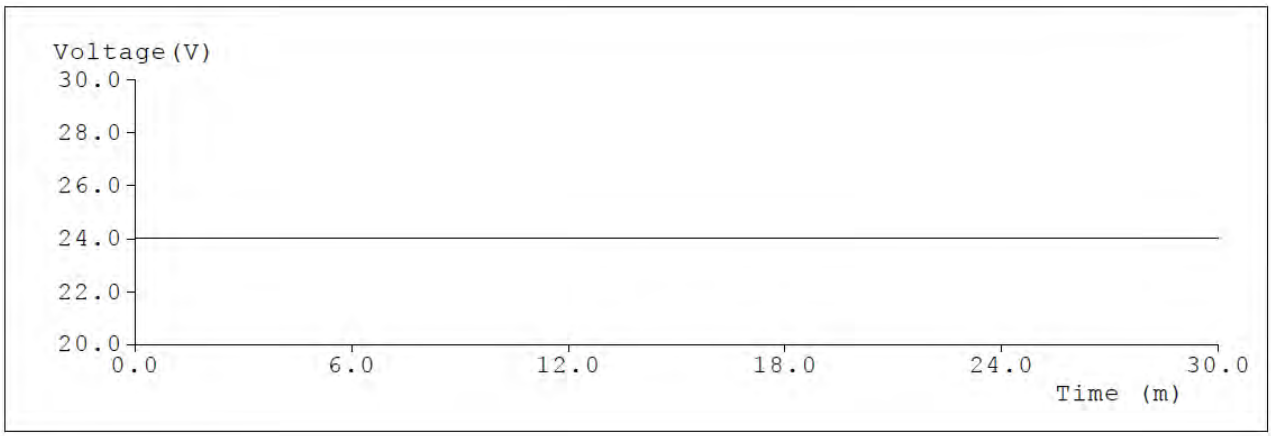
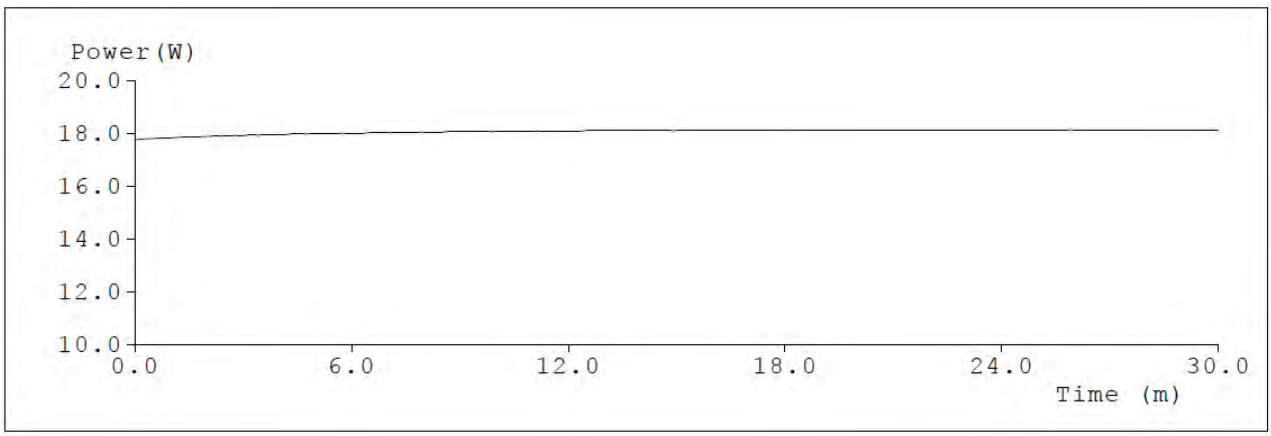
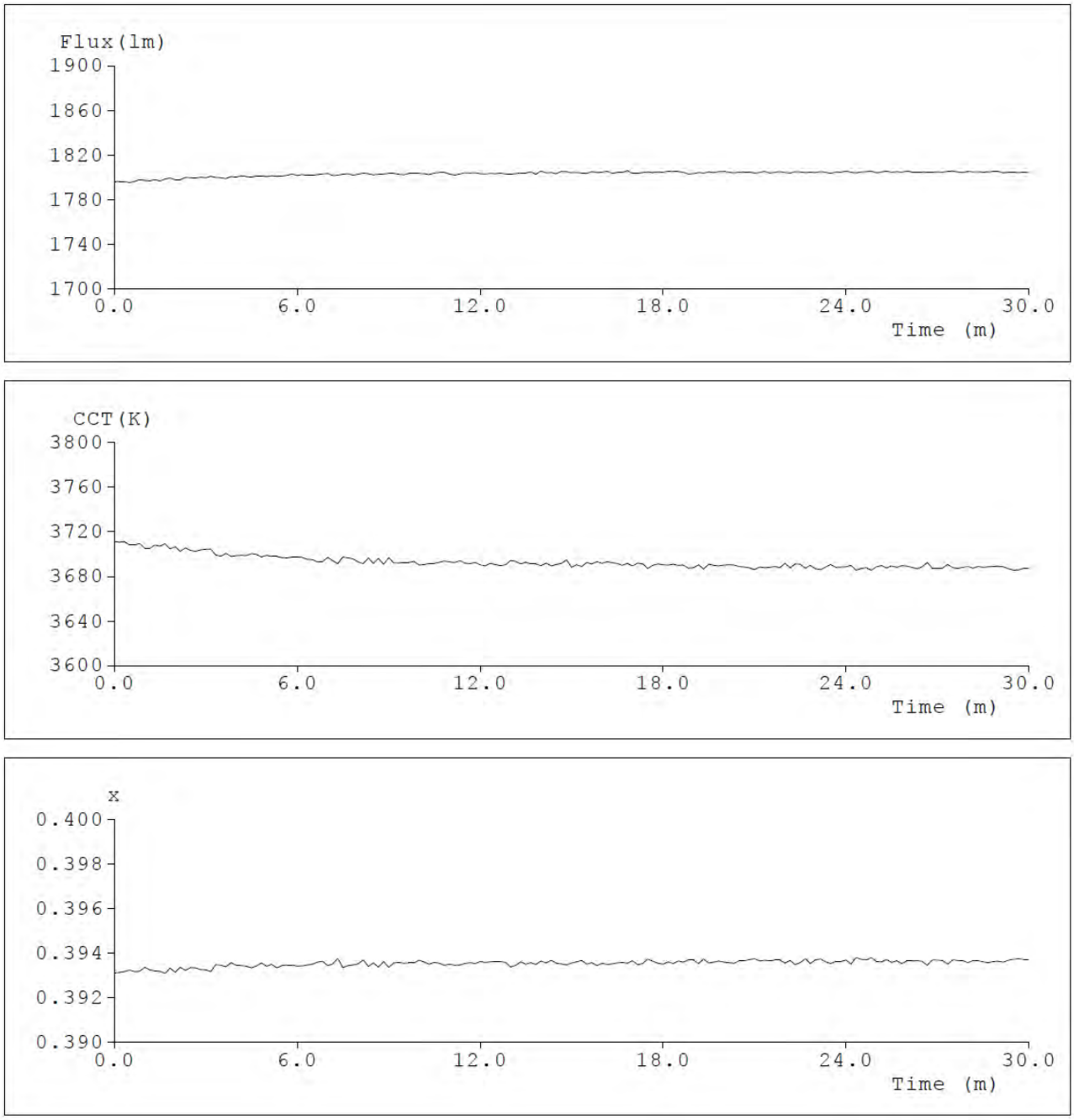
Test curves





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1740
1700
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6.0
12.0
18.0
24.0
30.0
Time (m)
CCT(K)
3800
3760
3720
3680
3640
3600
0.0
6.0
12.0
18.0
24.0
30.0
Time (m)
x
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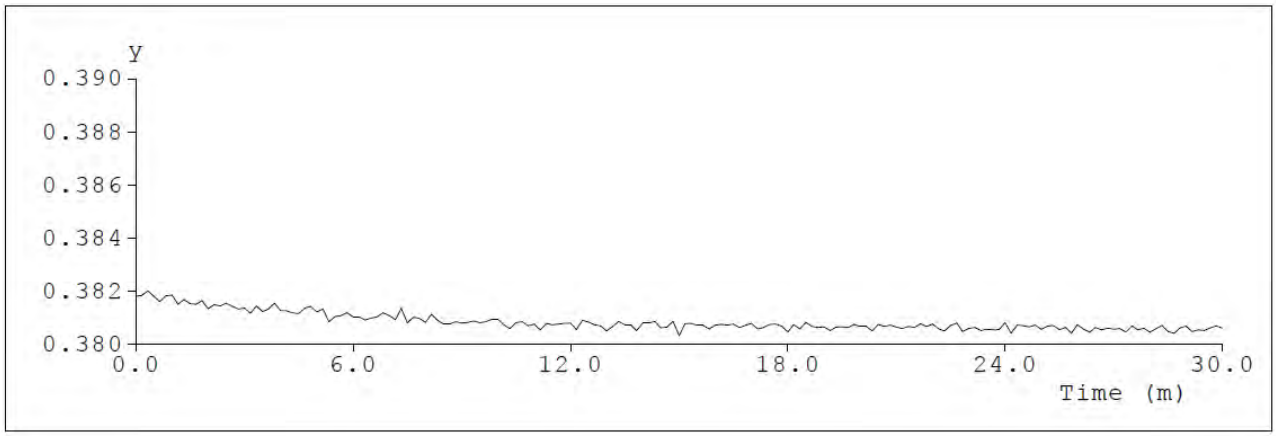
24.0
30.0
Time (m)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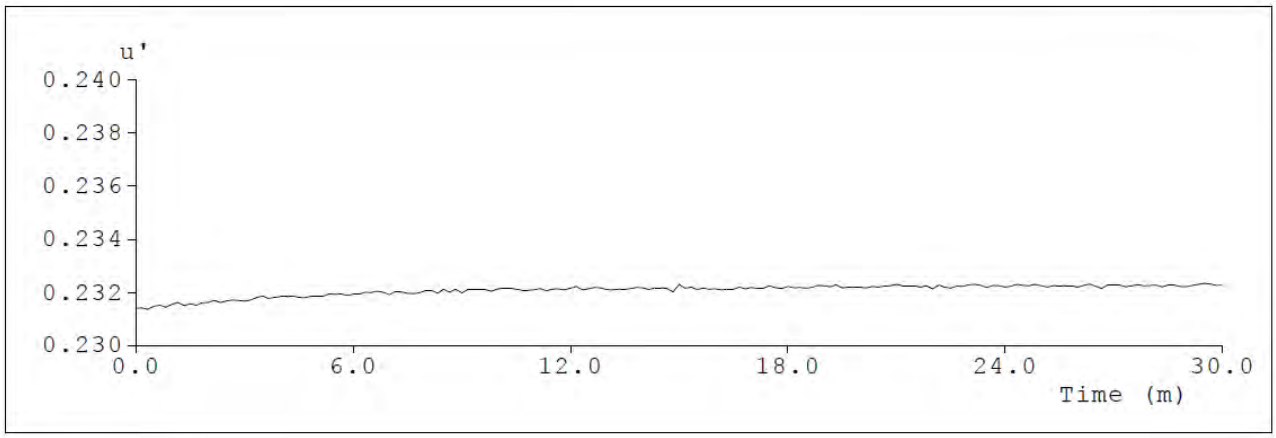
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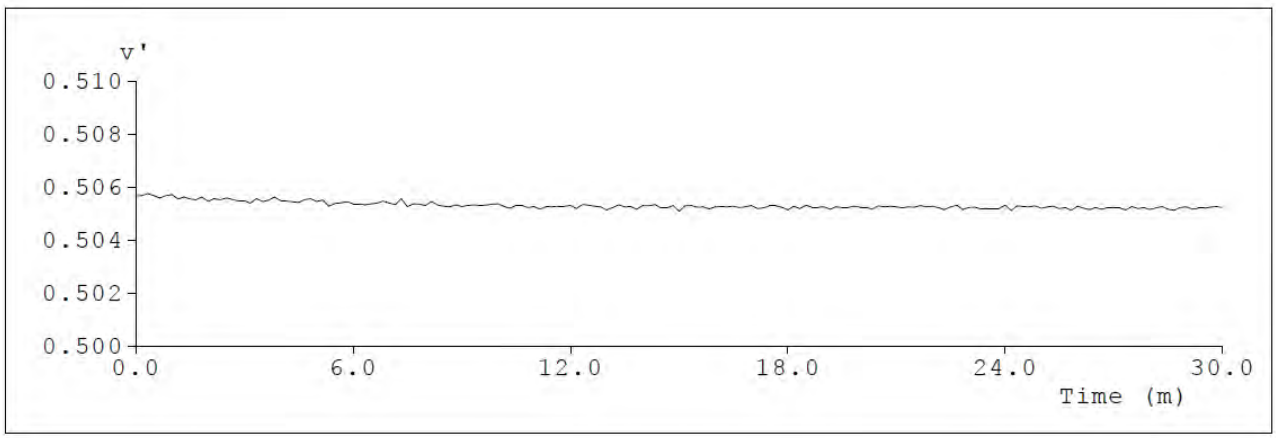
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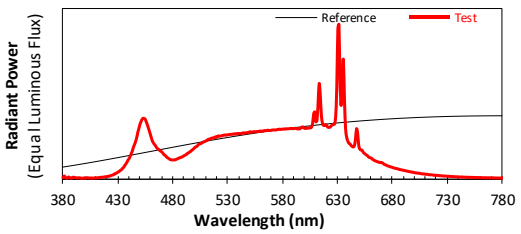
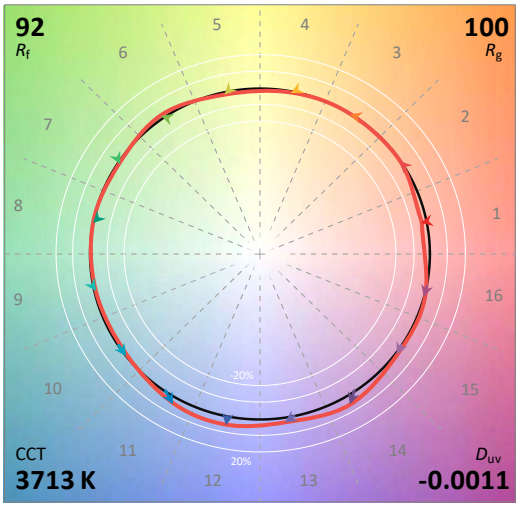
*7.2 ANSI/IES TM-30-18 Color Rendition Report

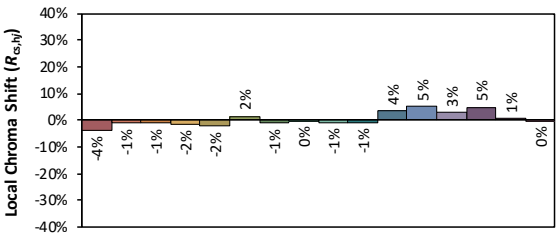
ANSI/IES TM-30-18 Color Rendition Report

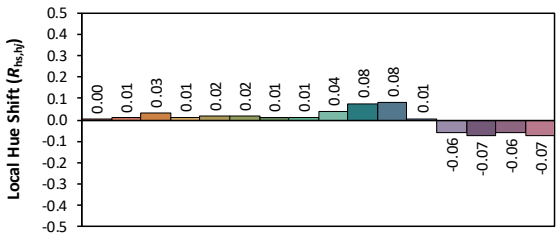
Source: Manufacturer:

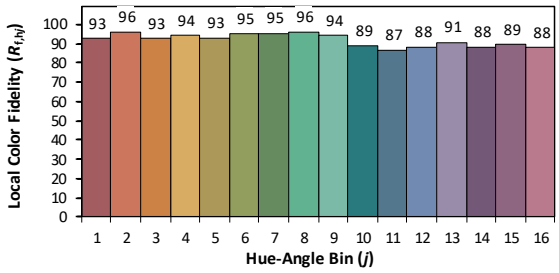
Date: 2023/9/15 Model: LCETHY-1000-NL27-DF-I-21

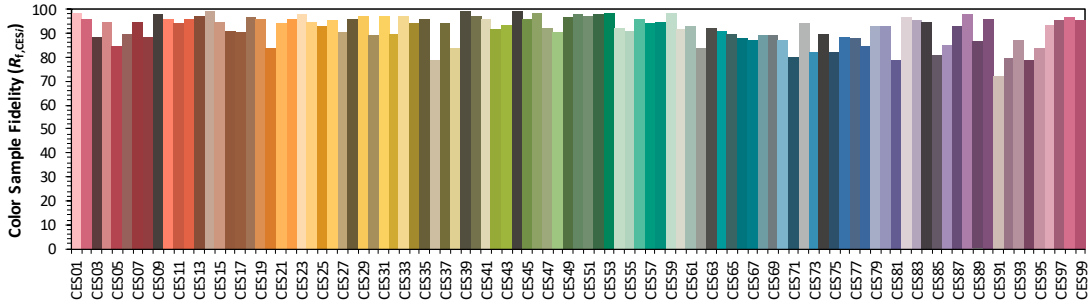












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

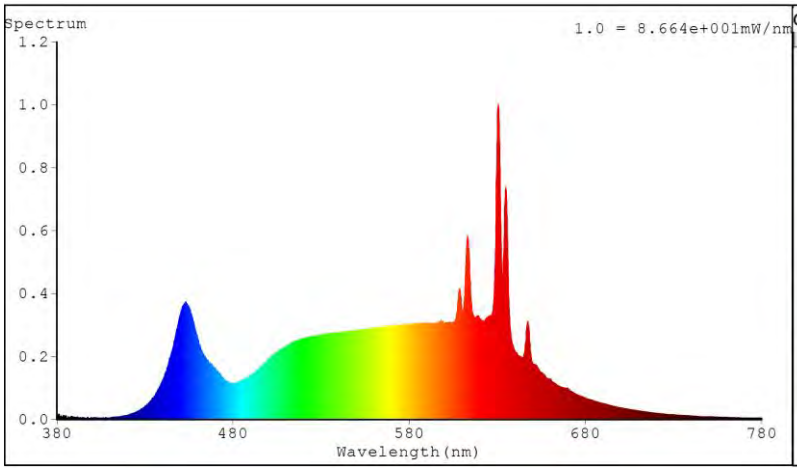
x	0.3931
y	0.3819
u'	0.2313
v'	0.5057

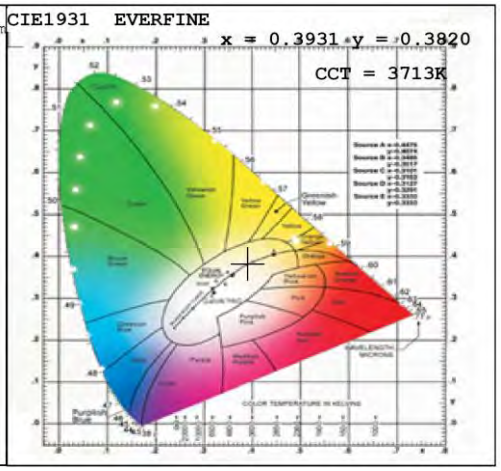
CIE 13.3-1995 (CRI)

R_a	96
R_9	77

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

7.3 Relative Spectral Power Distribution





nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0062	414	0.008	448	0.283	482	0.1146	516	0.247
381	0.0163	415	0.0083	449	0.3072	483	0.1181	517	0.2492
382	0.0073	416	0.0087	450	0.3322	484	0.1202	518	0.2515
383	0.0017	417	0.0097	451	0.3488	485	0.1245	519	0.2551
384	0.0035	418	0.0107	452	0.3625	486	0.1261	520	0.2513
385	0.0101	419	0.0124	453	0.3668	487	0.1298	521	0.2592
386	0.0052	420	0.0125	454	0.3655	488	0.131	522	0.2594
387	0.0044	421	0.0141	455	0.3572	489	0.1351	523	0.2585
388	0.0025	422	0.0153	456	0.3387	490	0.1396	524	0.2601
389	0.0093	423	0.018	457	0.3201	491	0.1429	525	0.2625
390	0.007	424	0.0198	458	0.2988	492	0.1466	526	0.2638
391	0.0065	425	0.0222	459	0.2775	493	0.1532	527	0.2658
392	0.0044	426	0.0245	460	0.2544	494	0.1562	528	0.2643
393	0.005	427	0.0303	461	0.233	495	0.1618	529	0.2656
394	0.0047	428	0.0315	462	0.219	496	0.1657	530	0.2675
395	0.0054	429	0.036	463	0.2091	497	0.1721	531	0.2681
396	0.003	430	0.0401	464	0.2006	498	0.1773	532	0.2691
397	0.0021	431	0.0439	465	0.1892	499	0.1832	533	0.2694
398	0.0037	432	0.0501	466	0.1816	500	0.1905	534	0.2708
399	0.0028	433	0.054	467	0.1778	501	0.1944	535	0.2706
400	0.0029	434	0.0625	468	0.1704	502	0.1981	536	0.2734
401	0.0049	435	0.0684	469	0.1665	503	0.2063	537	0.2701
402	0.0057	436	0.0791	470	0.1607	504	0.2107	538	0.2736
403	0.0045	437	0.0887	471	0.1528	505	0.2119	539	0.2747
404	0.004	438	0.0992	472	0.1448	506	0.2164	540	0.2745
405	0.0039	439	0.1122	473	0.14	507	0.2199	541	0.2741
406	0.0038	440	0.1219	474	0.1326	508	0.2244	542	0.2736
407	0.0038	441	0.1355	475	0.1269	509	0.2262	543	0.2768
408	0.0036	442	0.1525	476	0.1229	510	0.2305	544	0.2782
409	0.0048	443	0.1692	477	0.1178	511	0.2319	545	0.2785
410	0.0048	444	0.1919	478	0.1158	512	0.2396	546	0.2776
411	0.0045	445	0.2086	479	0.1133	513	0.2398	547	0.2794
412	0.0064	446	0.2274	480	0.114	514	0.2425	548	0.2802
413	0.006	447	0.2515	481	0.1141	515	0.2463	549	0.2808

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
550	0.2858	599	0.3088	648	0.276	697	0.0396	746	0.0089
551	0.2825	600	0.3061	649	0.2014	698	0.0395	747	0.0085
552	0.2835	601	0.3051	650	0.1797	699	0.0379	748	0.0084
553	0.2853	602	0.3069	651	0.1746	700	0.036	749	0.0078
554	0.2851	603	0.3074	652	0.1733	701	0.035	750	0.0081
555	0.2854	604	0.3087	653	0.1615	702	0.0341	751	0.008
556	0.286	605	0.3089	654	0.1543	703	0.033	752	0.0077
557	0.2871	606	0.313	655	0.1488	704	0.033	753	0.0073
558	0.2869	607	0.3357	656	0.1435	705	0.0313	754	0.0074
559	0.2897	608	0.3945	657	0.1393	706	0.0299	755	0.0069
560	0.2892	609	0.4051	658	0.1315	707	0.029	756	0.0067
561	0.289	610	0.3458	659	0.128	708	0.0285	757	0.0067
562	0.2892	611	0.3542	660	0.1264	709	0.0281	758	0.0066
563	0.2925	612	0.4576	661	0.1215	710	0.0259	759	0.0066
564	0.2921	613	0.5794	662	0.1152	711	0.0271	760	0.006
565	0.2922	614	0.5063	663	0.112	712	0.0254	761	0.0056
566	0.2944	615	0.3842	664	0.1079	713	0.0241	762	0.0056
567	0.2941	616	0.3381	665	0.1056	714	0.0239	763	0.0055
568	0.2926	617	0.3239	666	0.1025	715	0.0232	764	0.0057
569	0.2936	618	0.3243	667	0.1012	716	0.0226	765	0.0055
570	0.2958	619	0.329	668	0.0977	717	0.0213	766	0.005
571	0.296	620	0.3202	669	0.0987	718	0.0203	767	0.0055
572	0.2964	621	0.3131	670	0.0977	719	0.0202	768	0.0051
573	0.2961	622	0.3115	671	0.0935	720	0.0199	769	0.0044
574	0.2964	623	0.3144	672	0.0878	721	0.0194	770	0.005
575	0.2991	624	0.3206	673	0.0852	722	0.0189	771	0.0049
576	0.2994	625	0.327	674	0.082	723	0.018	772	0.0048
577	0.3012	626	0.3301	675	0.0786	724	0.0172	773	0.0043
578	0.2992	627	0.3329	676	0.0765	725	0.0166	774	0.004
579	0.3004	628	0.3768	677	0.0741	726	0.0161	775	0.0039
580	0.3014	629	0.5541	678	0.0715	727	0.0154	776	0.004
581	0.3024	630	0.9104	679	0.0697	728	0.0159	777	0.0035
582	0.3008	631	0.9364	680	0.0673	729	0.0146	778	0.0038
583	0.3037	632	0.5869	681	0.065	730	0.0146	779	0.0036
584	0.3027	633	0.445	682	0.0635	731	0.0143	780	0.0036
585	0.3033	634	0.5986	683	0.0617	732	0.0138		
586	0.3038	635	0.7249	684	0.0606	733	0.0127		
587	0.3057	636	0.4813	685	0.0581	734	0.0129		
588	0.304	637	0.3058	686	0.0559	735	0.0121		
589	0.3052	638	0.2522	687	0.0549	736	0.0122		
590	0.3041	639	0.23	688	0.0532	737	0.0114		
591	0.3062	640	0.2156	689	0.0514	738	0.0112		
592	0.3058	641	0.2117	690	0.0503	739	0.0111		
593	0.3026	642	0.2018	691	0.0487	740	0.0106		
594	0.3034	643	0.1965	692	0.0473	741	0.0096		
595	0.3025	644	0.1928	693	0.0456	742	0.01		
596	0.3058	645	0.2002	694	0.0444	743	0.0102		
597	0.3102	646	0.2381	695	0.043	744	0.0094		
598	0.3154	647	0.3032	696	0.0416	745	0.0089		

8. Goniophotometer Test results for LCETHY-1000-NL27-DF-I-21

8.1 Test Data

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

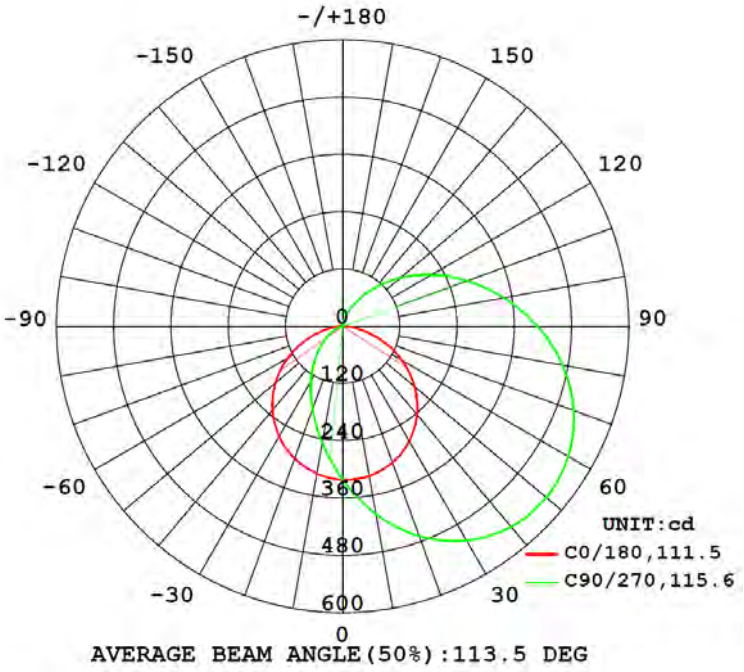
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current(A)	Power Factor	Power(W)
24	--	0.77	1.0000	18.48

Optical Measurement

Luminous Flux (lm)	Efficacy(lm/W)	Imax (cd)	η up (%)	η down (%)
1807.68	97.82	557.4	21.5	78.5

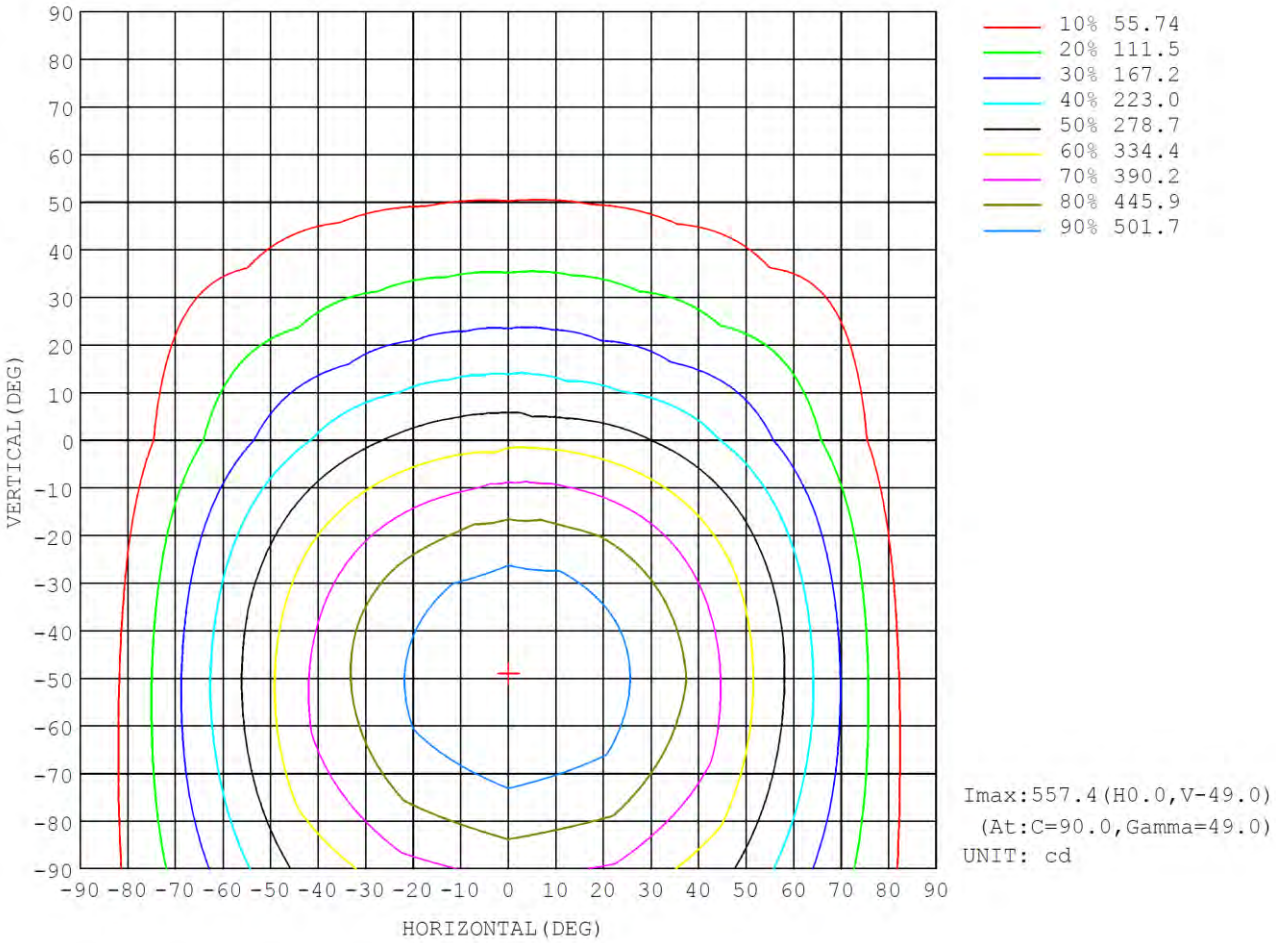
8.2 Luminous Intensity Distribution



8.3 Zonal Flux Diagram

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	318.5	376.2	398.9	366.1	313.5	265.5	248.4	262.0	0- 10	30.51	30.51	1.69,1.69
20	304.0	421.5	467.2	407.6	294.6	210.0	185.8	208.7	10- 20	89.55	120.1	6.64,6.64
30	278.4	452.8	518.1	435.3	267.1	159.2	134.4	159.0	20- 30	142.0	262.1	14.5,14.5
40	242.3	467.4	548.3	447.0	229.4	114.0	91.30	114.0	30- 40	183.2	445.3	24.6,24.6
50	196.8	464.5	557.3	442.2	184.1	74.16	56.24	73.67	40- 50	208.8	654.0	36.2,36.2
60	143.6	443.9	545.7	421.6	133.3	41.40	29.86	40.46	50- 60	216.8	870.8	48.2,48.2
70	86.66	407.2	515.0	386.7	79.57	18.10	12.48	17.08	60- 70	207.9	1079	59.7,59.7
80	32.16	356.3	467.7	339.3	30.25	5.619	3.087	4.983	70- 80	185.4	1264	69.9,69.9
90	5.056	296.1	408.4	283.7	4.670	2.556	1.309	2.478	80- 90	155.6	1420	78.5,78.5
100	4.686	235.8	343.5	227.6	4.392	1.763	1.202	1.658	90-100	126.1	1546	85.5,85.5
110	4.106	180.9	278.2	176.6	3.914	0.9843	0.9974	0.8446	100-110	96.91	1643	90.9,90.9
120	3.350	133.1	216.1	131.8	3.248	0.5435	0.7426	0.4971	110-120	69.86	1713	94.7,94.7
130	2.576	92.35	158.3	93.61	2.568	0.5452	0.6094	0.5305	120-130	46.59	1759	97.3,97.3
140	1.848	57.46	106.7	60.02	1.960	0.6847	0.6379	0.6722	130-140	27.81	1787	98.9,98.9
150	1.231	30.93	61.02	31.29	1.378	0.8128	0.6878	0.7070	140-150	14.00	1801	99.6,99.6
160	0.7460	13.22	26.80	12.97	0.9457	0.7833	0.6593	0.6677	150-160	5.335	1806	99.9,99.9
170	0.6348	3.387	6.810	3.370	0.6951	0.6908	0.6362	0.6195	160-170	1.287	1808	100,100
180	0.7329	0.7012	0.4775	0.5510	0.7317	0.7108	0.6605	0.6137	170-180	0.1255	1808	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

8.4 Isocandela Diagram



8.5 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	322	322	322	322	321	321	315	318	322	322	322	322	321	321	315	318			
5	322	337	350	358	360	356	342	331	319	305	293	286	284	287	289	302			
10	319	349	376	394	399	391	366	341	314	286	266	253	248	254	262	285			
15	313	359	400	427	435	423	388	349	305	266	237	221	216	222	235	267			
20	304	366	421	457	467	451	408	354	295	245	210	191	186	193	209	246			
25	293	370	439	483	495	475	423	356	282	222	184	164	159	166	183	225			
30	278	371	453	504	518	495	435	355	267	199	159	140	134	142	159	202			
35	262	369	462	520	536	509	443	351	249	175	136	117	112	119	136	179			
40	242	363	467	531	548	519	447	344	229	152	114	96.1	91.3	97.9	114	155			
45	221	354	468	537	556	524	447	334	208	129	93.4	77.0	72.7	78.6	93.1	132			
50	197	342	464	538	557	523	442	321	184	106	74.2	59.9	56.2	61.2	73.7	109			
55	171	326	456	534	554	518	434	306	159	84.8	56.7	44.9	41.9	45.9	56.0	86.3			
60	144	307	444	525	546	509	422	287	133	64.5	41.4	32.1	29.9	32.9	40.5	65.2			
65	116	285	427	511	532	495	406	267	106	46.0	28.5	21.7	20.1	22.1	27.5	45.8			
70	86.7	260	407	493	515	477	387	243	79.6	30.0	18.1	13.6	12.5	13.8	17.1	29.3			
75	58.1	232	383	470	493	455	364	218	53.5	17.5	10.6	7.68	6.91	7.75	9.71	16.5			
80	32.2	203	356	444	468	430	339	192	30.3	9.12	5.62	3.65	3.09	3.60	4.98	8.50			
85	13.2	173	327	415	439	402	312	164	12.2	4.86	2.93	1.63	1.32	1.57	2.72	4.73			
90	5.06	144	296	384	408	372	284	138	4.67	3.68	2.56	1.57	1.31	1.51	2.48	3.74			
95	4.85	120	265	352	376	341	255	115	4.43	2.45	2.19	1.48	1.27	1.43	2.11	2.25			
100	4.69	99.3	236	320	344	310	228	95.9	4.39	1.29	1.76	1.35	1.20	1.30	1.66	0.99			
105	4.43	82.5	208	287	311	279	201	79.3	4.18	0.58	1.35	1.20	1.11	1.16	1.22	0.44			
110	4.11	68.2	181	256	278	249	177	64.6	3.91	0.42	0.98	1.04	1.00	0.99	0.84	0.39			
115	3.74	56.0	156	225	247	220	154	53.9	3.59	0.44	0.70	0.88	0.87	0.83	0.60	0.47			
120	3.35	45.4	133	196	216	192	132	43.0	3.25	0.56	0.54	0.73	0.74	0.69	0.50	0.63			
125	2.96	36.4	112	168	187	165	113	35.8	2.90	0.72	0.51	0.63	0.65	0.60	0.48	0.81			
130	2.58	28.9	92.4	141	158	139	93.6	29.6	2.57	0.88	0.55	0.61	0.61	0.57	0.53	0.96			
135	2.20	22.6	74.0	117	131	115	76.1	23.7	2.25	1.01	0.61	0.62	0.61	0.58	0.60	1.06			
140	1.85	17.3	57.5	93.4	107	92.6	60.0	18.6	1.96	1.09	0.68	0.64	0.64	0.62	0.67	1.07			
145	1.52	13.0	43.1	71.6	82.8	71.4	45.8	14.1	1.68	1.14	0.76	0.67	0.67	0.66	0.71	1.03			
150	1.23	9.29	30.9	52.3	61.0	52.4	31.3	10.6	1.38	1.12	0.81	0.71	0.69	0.68	0.71	0.93			
155	0.94	6.40	21.0	35.9	42.2	36.3	21.4	6.74	1.15	1.05	0.82	0.71	0.69	0.67	0.68	0.83			
160	0.75	4.16	13.2	22.7	26.8	23.1	13.0	4.17	0.95	0.91	0.78	0.68	0.66	0.64	0.67	0.72			
165	0.61	2.34	7.32	12.7	15.0	12.7	7.03	2.62	0.77	0.76	0.71	0.68	0.64	0.62	0.64	0.67			
170	0.63	1.18	3.39	5.73	6.81	4.61	3.37	1.50	0.70	0.69	0.69	0.68	0.64	0.60	0.62	0.67			
175	0.70	0.73	1.10	1.66	2.11	1.37	1.51	0.82	0.74	0.74	0.69	0.67	0.64	0.57	0.59	0.63			
180	0.73	0.72	0.70	0.65	0.48	0.33	0.55	0.62	0.73	0.73	0.71	0.70	0.66	0.56	0.61	0.62			

9. Integrating Sphere Test Results for LCETHY-1000-NL27-DF-I-31

9.1 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	1.0882	23.998	26.115	2542.3	0.3932	0.3824	0.2312	0.5059	3714	95.6
1	00h00m10s	1.0897	23.998	26.151	2544.9	0.3931	0.3825	0.2311	0.506	3717	95.6
2	00h00m20s	1.0907	23.998	26.175	2543.4	0.3931	0.3821	0.2313	0.5058	3713	95.6
3	00h00m30s	1.0916	23.998	26.196	2545.2	0.3933	0.3824	0.2313	0.506	3711	95.6
4	00h00m40s	1.0925	23.998	26.218	2544.7	0.3932	0.3824	0.2312	0.5059	3712	95.6
5	00h00m50s	1.0934	23.998	26.239	2546	0.3932	0.3822	0.2313	0.5059	3712	95.6
6	00h01m00s	1.0942	23.998	26.259	2544.8	0.3932	0.3821	0.2314	0.5058	3710	95.6
7	00h01m10s	1.095	23.998	26.278	2547	0.3933	0.3823	0.2313	0.5059	3711	95.7
8	00h01m20s	1.0958	23.998	26.297	2547.3	0.3933	0.3821	0.2314	0.5058	3710	95.7
9	00h01m30s	1.0965	23.998	26.314	2546.4	0.3932	0.382	0.2314	0.5058	3711	95.7
10	00h01m40s	1.0973	23.998	26.333	2545.4	0.3933	0.3817	0.2315	0.5057	3706	95.7
11	00h01m50s	1.0979	23.998	26.347	2546.2	0.3933	0.3818	0.2315	0.5057	3706	95.7
12	00h02m00s	1.0987	23.998	26.367	2547.3	0.3933	0.3819	0.2315	0.5058	3707	95.7
13	00h02m10s	1.0993	23.998	26.381	2546.3	0.3935	0.3819	0.2316	0.5058	3702	95.7
14	00h02m20s	1.0999	23.998	26.395	2549.1	0.3933	0.3818	0.2315	0.5057	3706	95.7
15	00h02m30s	1.1005	23.998	26.41	2547.9	0.3933	0.3818	0.2315	0.5057	3706	95.8
16	00h02m40s	1.1011	23.998	26.424	2548.9	0.3935	0.3819	0.2316	0.5058	3702	95.7
17	00h02m50s	1.1017	23.998	26.439	2548.5	0.3934	0.3818	0.2316	0.5057	3704	95.8
18	00h03m00s	1.1023	23.998	26.453	2548.6	0.3935	0.3819	0.2316	0.5058	3702	95.8
19	00h03m10s	1.1028	23.998	26.465	2550.1	0.3935	0.3816	0.2317	0.5056	3700	95.8
20	00h03m20s	1.1033	23.998	26.477	2550	0.3934	0.3816	0.2316	0.5056	3703	95.7
21	00h03m30s	1.1038	23.998	26.489	2548.7	0.3934	0.3817	0.2316	0.5057	3704	95.8

22	00h03m40s	1.1043	23.998	26.501	2551.2	0.3933	0.3815	0.2317	0.5056	3703	95.8
23	00h03m50s	1.1048	23.998	26.513	2551.3	0.3935	0.3816	0.2318	0.5056	3699	95.8
24	00h04m00s	1.1053	23.998	26.525	2551.9	0.3934	0.3815	0.2317	0.5056	3702	95.8
25	00h04m10s	1.1057	23.998	26.535	2549.6	0.3935	0.3815	0.2318	0.5056	3699	95.8
26	00h04m20s	1.1061	23.998	26.544	2550.5	0.3933	0.3814	0.2317	0.5055	3702	95.9
27	00h04m30s	1.1066	23.998	26.556	2552.1	0.3935	0.3815	0.2318	0.5056	3698	95.9
28	00h04m40s	1.107	23.998	26.566	2549.6	0.3935	0.3814	0.2318	0.5055	3698	95.9
29	00h04m50s	1.1074	23.998	26.575	2553	0.3936	0.3815	0.2319	0.5056	3695	95.9
30	00h05m00s	1.1078	23.998	26.585	2550	0.3934	0.3811	0.2318	0.5054	3699	95.9
31	00h05m10s	1.1082	23.998	26.595	2552.3	0.3935	0.3814	0.2318	0.5056	3699	95.9
32	00h05m20s	1.1085	23.998	26.602	2552.5	0.3938	0.3814	0.232	0.5056	3692	95.9
33	00h05m30s	1.1089	23.998	26.611	2551.2	0.3935	0.3812	0.2319	0.5055	3696	95.9
34	00h05m40s	1.1092	23.998	26.619	2550.9	0.3935	0.3812	0.2319	0.5055	3696	95.9
35	00h05m50s	1.1096	23.998	26.628	2552.5	0.3936	0.3813	0.2319	0.5055	3695	95.9
36	00h06m00s	1.1099	23.998	26.635	2553.6	0.3937	0.3814	0.232	0.5056	3693	95.9
37	00h06m10s	1.1102	23.998	26.643	2551.9	0.3936	0.3812	0.232	0.5055	3695	96
38	00h06m20s	1.1105	23.998	26.65	2551.9	0.3937	0.3813	0.232	0.5055	3692	95.9
39	00h06m30s	1.1108	23.998	26.657	2551.9	0.3934	0.381	0.2319	0.5054	3697	95.9
40	00h06m40s	1.1111	23.998	26.664	2552.2	0.3936	0.3811	0.232	0.5054	3693	96
41	00h06m50s	1.1114	23.998	26.671	2553.2	0.3937	0.3812	0.232	0.5055	3691	95.9
42	00h07m00s	1.1117	23.998	26.679	2552.6	0.3937	0.3812	0.232	0.5055	3692	95.9
43	00h07m10s	1.112	23.998	26.686	2552.2	0.3935	0.381	0.232	0.5054	3694	95.9
44	00h07m20s	1.1122	23.998	26.691	2552.5	0.3937	0.3812	0.232	0.5055	3692	95.9
45	00h07m30s	1.1124	23.998	26.695	2554.2	0.3937	0.3812	0.232	0.5055	3693	96
46	00h07m40s	1.1127	23.998	26.703	2553.8	0.3937	0.3812	0.232	0.5055	3693	95.9
47	00h07m50s	1.1129	23.998	26.707	2552.6	0.3936	0.381	0.232	0.5054	3693	96
48	00h08m00s	1.1132	23.998	26.715	2553.9	0.3937	0.3812	0.2321	0.5055	3691	95.9
49	00h08m10s	1.1134	23.998	26.719	2552.7	0.3935	0.381	0.232	0.5054	3694	96
50	00h08m20s	1.1136	23.998	26.724	2552.1	0.3936	0.3809	0.2321	0.5054	3692	96
51	00h08m30s	1.1138	23.998	26.729	2554.7	0.3936	0.3812	0.232	0.5055	3694	95.9
52	00h08m40s	1.1141	23.998	26.736	2553.1	0.3937	0.381	0.2321	0.5054	3690	96

53	00h08m50s	1.1143	23.998	26.741	2553.6	0.3936	0.3809	0.2321	0.5054	3691	96
54	00h09m00s	1.1145	23.998	26.746	2554.2	0.3935	0.3808	0.2321	0.5053	3693	96
55	00h09m10s	1.1147	23.998	26.751	2553.5	0.3937	0.381	0.2321	0.5054	3690	96
56	00h09m20s	1.1148	23.998	26.753	2553.5	0.3938	0.3811	0.2321	0.5054	3689	96
57	00h09m30s	1.115	23.998	26.758	2553.1	0.3937	0.3809	0.2322	0.5053	3689	96
58	00h09m40s	1.1152	23.998	26.763	2554.4	0.3938	0.381	0.2322	0.5054	3687	96
59	00h09m50s	1.1154	23.998	26.767	2555	0.3937	0.381	0.2321	0.5054	3690	96
60	00h10m00s	1.1156	23.998	26.772	2554.6	0.3936	0.3809	0.2321	0.5054	3691	96
61	00h10m10s	1.1157	23.998	26.775	2554.9	0.3937	0.381	0.2321	0.5054	3689	96
62	00h10m20s	1.1159	23.998	26.779	2553.4	0.3937	0.3808	0.2322	0.5053	3689	96
63	00h10m30s	1.1161	23.998	26.784	2554.2	0.3936	0.3808	0.2322	0.5053	3690	96
64	00h10m40s	1.1162	23.998	26.787	2555.2	0.3937	0.3809	0.2322	0.5054	3688	96
65	00h10m50s	1.1163	23.998	26.789	2554.7	0.3935	0.3809	0.232	0.5053	3693	96
66	00h11m00s	1.1165	23.998	26.794	2554	0.3938	0.3809	0.2322	0.5054	3687	96
67	00h11m10s	1.1166	23.998	26.796	2552.6	0.3938	0.3809	0.2322	0.5054	3687	96
68	00h11m20s	1.1167	23.998	26.799	2554.1	0.3937	0.3808	0.2322	0.5053	3688	96
69	00h11m30s	1.1169	23.998	26.803	2554.7	0.3937	0.3808	0.2322	0.5053	3689	96
70	00h11m40s	1.117	23.998	26.806	2554.5	0.3938	0.3809	0.2322	0.5054	3687	96
71	00h11m50s	1.1172	23.998	26.811	2553.1	0.3937	0.3808	0.2322	0.5053	3689	96
72	00h12m00s	1.1173	23.998	26.813	2554.6	0.3938	0.3808	0.2322	0.5053	3687	96
73	00h12m10s	1.1174	23.998	26.815	2555.6	0.3938	0.3811	0.2321	0.5054	3688	96
74	00h12m20s	1.1175	23.998	26.818	2554.8	0.3937	0.3809	0.2322	0.5054	3688	96
75	00h12m30s	1.1176	23.998	26.82	2555.3	0.3936	0.3808	0.2322	0.5053	3690	96
76	00h12m40s	1.1177	23.998	26.823	2555.1	0.3938	0.3808	0.2322	0.5054	3687	96
77	00h12m50s	1.1178	23.998	26.825	2555.4	0.3937	0.3807	0.2322	0.5053	3688	96
78	00h13m00s	1.1179	23.998	26.827	2556.6	0.3937	0.3808	0.2322	0.5053	3689	96
79	00h13m10s	1.118	23.998	26.83	2554.9	0.3937	0.3808	0.2322	0.5053	3689	96
80	00h13m20s	1.1181	23.998	26.832	2554.2	0.3935	0.3806	0.2322	0.5052	3691	96
81	00h13m30s	1.1182	23.998	26.835	2555.8	0.3937	0.3809	0.2322	0.5054	3689	96
82	00h13m40s	1.1183	23.998	26.837	2554.8	0.3939	0.3808	0.2323	0.5054	3685	96
83	00h13m50s	1.1184	23.998	26.839	2554.9	0.3937	0.3808	0.2322	0.5053	3689	96.1

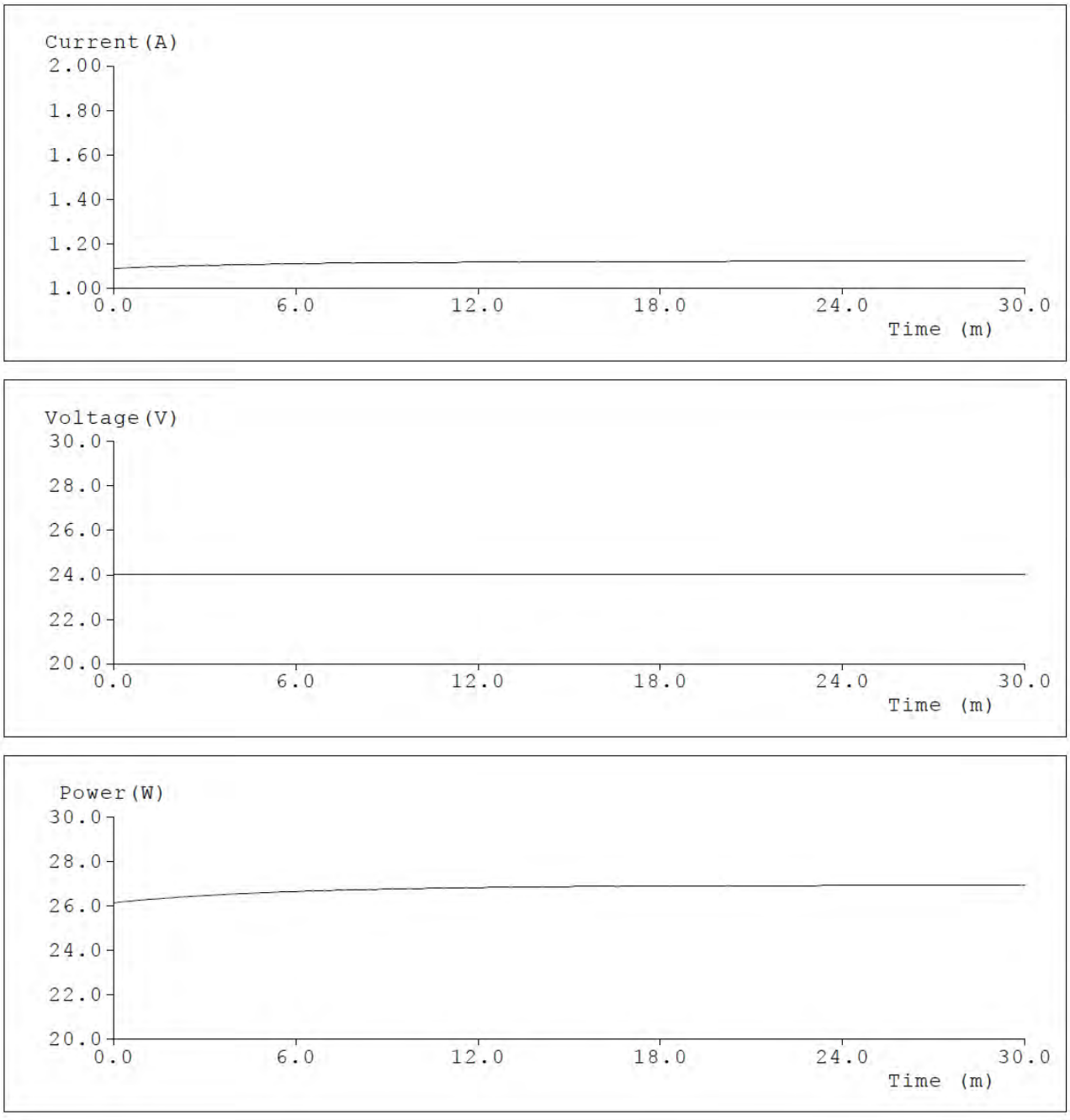
84	00h14m00s	1.1185	23.998	26.842	2556.1	0.3939	0.3809	0.2323	0.5054	3685	96
85	00h14m10s	1.1186	23.998	26.844	2555.5	0.3936	0.3806	0.2323	0.5052	3688	96.1
86	00h14m20s	1.1186	23.998	26.844	2555.4	0.3938	0.3808	0.2322	0.5053	3687	96
87	00h14m30s	1.1187	23.998	26.847	2553.9	0.3938	0.3808	0.2323	0.5053	3685	96.1
88	00h14m40s	1.1188	23.998	26.849	2556.9	0.3938	0.3808	0.2323	0.5053	3686	96.1
89	00h14m50s	1.1189	23.998	26.851	2556	0.3939	0.3807	0.2324	0.5053	3683	96.1
90	00h15m00s	1.119	23.998	26.854	2555.5	0.3937	0.3807	0.2322	0.5053	3687	96.1
91	00h15m10s	1.1191	23.998	26.856	2554	0.3939	0.3807	0.2323	0.5053	3684	96
92	00h15m20s	1.1191	23.998	26.856	2555.8	0.3937	0.3806	0.2323	0.5052	3687	96.1
93	00h15m30s	1.1192	23.998	26.859	2555.3	0.3938	0.3807	0.2323	0.5053	3686	96.1
94	00h15m40s	1.1192	23.998	26.859	2556.5	0.394	0.3809	0.2323	0.5054	3683	96
95	00h15m50s	1.1193	23.998	26.861	2555.1	0.3939	0.3807	0.2323	0.5053	3684	96.1
96	00h16m00s	1.1194	23.998	26.863	2554.9	0.3939	0.3808	0.2323	0.5053	3684	96
97	00h16m10s	1.1194	23.998	26.863	2555.5	0.3937	0.3806	0.2323	0.5053	3686	96.1
98	00h16m20s	1.1195	23.998	26.866	2554.9	0.3938	0.3807	0.2323	0.5053	3686	96.1
99	00h16m30s	1.1195	23.998	26.866	2555.8	0.3936	0.3807	0.2322	0.5053	3689	96
100	00h16m40s	1.1196	23.998	26.868	2556	0.3938	0.3807	0.2323	0.5053	3685	96.1
101	00h16m50s	1.1197	23.998	26.871	2554.7	0.3937	0.3806	0.2323	0.5052	3686	96.1
102	00h17m00s	1.1197	23.998	26.871	2556	0.3939	0.3808	0.2323	0.5053	3683	96
103	00h17m10s	1.1198	23.998	26.873	2554.4	0.3938	0.3807	0.2323	0.5053	3686	96.1
104	00h17m20s	1.1198	23.998	26.873	2556.6	0.3938	0.3807	0.2323	0.5053	3685	96
105	00h17m30s	1.1199	23.998	26.875	2554.6	0.3939	0.3807	0.2323	0.5053	3684	96
106	00h17m40s	1.1199	23.998	26.875	2554.9	0.3938	0.3806	0.2323	0.5053	3684	96.1
107	00h17m50s	1.12	23.998	26.878	2554.1	0.3937	0.3805	0.2323	0.5052	3685	96.1
108	00h18m00s	1.12	23.998	26.878	2556.1	0.3937	0.3807	0.2322	0.5053	3688	96.1
109	00h18m10s	1.1201	23.998	26.88	2554.8	0.3939	0.3807	0.2324	0.5053	3683	96.1
110	00h18m20s	1.1201	23.998	26.88	2557.4	0.3938	0.3807	0.2323	0.5053	3685	96
111	00h18m30s	1.1202	23.998	26.883	2555.5	0.3938	0.3808	0.2323	0.5053	3686	96
112	00h18m40s	1.1202	23.998	26.883	2555.4	0.3938	0.3806	0.2323	0.5052	3685	96
113	00h18m50s	1.1203	23.998	26.885	2554.5	0.3938	0.3804	0.2324	0.5052	3683	96.1
114	00h19m00s	1.1203	23.998	26.885	2556	0.394	0.3809	0.2323	0.5054	3683	96.1

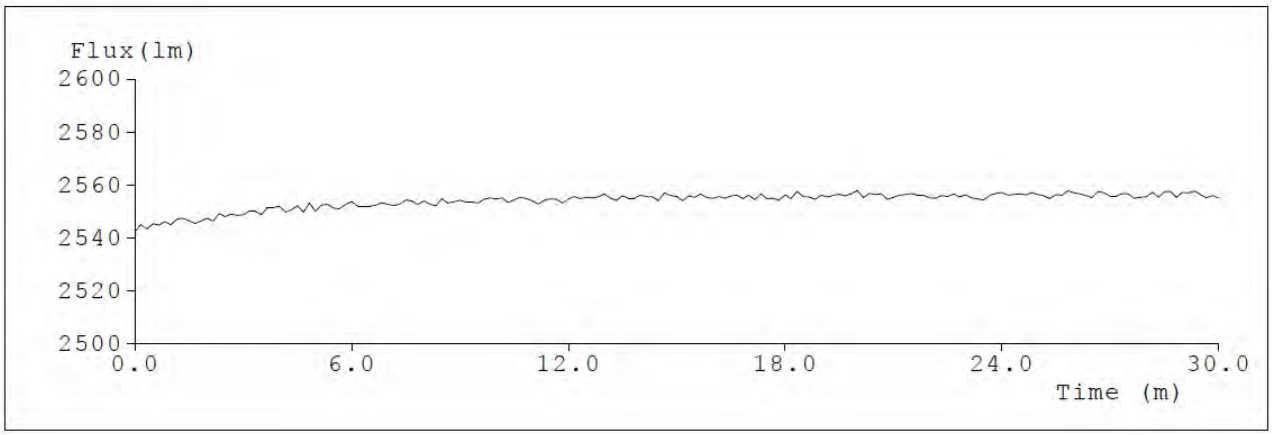
115	00h19m10s	1.1204	23.998	26.887	2555.4	0.3937	0.3806	0.2323	0.5052	3686	96.1
116	00h19m20s	1.1204	23.998	26.887	2556	0.394	0.3808	0.2324	0.5054	3681	96.1
117	00h19m30s	1.1205	23.998	26.89	2556.5	0.3937	0.3805	0.2323	0.5052	3687	96.1
118	00h19m40s	1.1205	23.998	26.89	2555.8	0.3939	0.3807	0.2324	0.5053	3683	96.1
119	00h19m50s	1.1205	23.998	26.89	2556.6	0.3938	0.3806	0.2323	0.5053	3684	96.1
120	00h20m00s	1.1206	23.998	26.892	2557.9	0.3939	0.381	0.2322	0.5054	3685	96
121	00h20m10s	1.1206	23.998	26.892	2555.2	0.3939	0.3806	0.2324	0.5053	3682	96.1
122	00h20m20s	1.1207	23.998	26.895	2556.7	0.3938	0.3807	0.2323	0.5053	3685	96.1
123	00h20m30s	1.1207	23.998	26.895	2556.3	0.3939	0.3807	0.2324	0.5053	3683	96
124	00h20m40s	1.1207	23.998	26.895	2556.6	0.3938	0.3808	0.2323	0.5053	3684	96.1
125	00h20m50s	1.1208	23.998	26.897	2554.4	0.3938	0.3805	0.2324	0.5052	3684	96.1
126	00h21m00s	1.1208	23.998	26.897	2555.2	0.3937	0.3806	0.2323	0.5052	3686	96.1
127	00h21m10s	1.1208	23.998	26.897	2556	0.394	0.3806	0.2324	0.5053	3680	96.1
128	00h21m20s	1.1208	23.998	26.897	2556.2	0.3938	0.3807	0.2323	0.5053	3684	96.1
129	00h21m30s	1.1209	23.998	26.899	2556.7	0.3939	0.3807	0.2323	0.5053	3683	96.1
130	00h21m40s	1.1209	23.998	26.899	2556.1	0.3939	0.3807	0.2323	0.5053	3684	96.1
131	00h21m50s	1.1209	23.998	26.899	2556.1	0.3939	0.3806	0.2324	0.5053	3681	96.1
132	00h22m00s	1.121	23.998	26.902	2555	0.3938	0.3806	0.2323	0.5053	3685	96.1
133	00h22m10s	1.121	23.998	26.902	2554.9	0.3938	0.3806	0.2324	0.5053	3683	96.1
134	00h22m20s	1.121	23.998	26.902	2556	0.3939	0.3807	0.2324	0.5053	3683	96.1
135	00h22m30s	1.1211	23.998	26.904	2555.5	0.3939	0.3806	0.2324	0.5053	3683	96.1
136	00h22m40s	1.1211	23.998	26.904	2556.6	0.3938	0.3805	0.2324	0.5052	3683	96.1
137	00h22m50s	1.1211	23.998	26.904	2555.4	0.394	0.3808	0.2324	0.5053	3682	96.1
138	00h23m00s	1.1211	23.998	26.904	2556.1	0.3937	0.3805	0.2323	0.5052	3687	96.1
139	00h23m10s	1.1211	23.998	26.904	2555	0.3939	0.3807	0.2324	0.5053	3682	96.1
140	00h23m20s	1.1212	23.998	26.907	2554.7	0.3937	0.3804	0.2324	0.5052	3685	96.1
141	00h23m30s	1.1212	23.998	26.907	2554.2	0.3939	0.3806	0.2324	0.5053	3682	96.1
142	00h23m40s	1.1212	23.998	26.907	2556	0.3939	0.3807	0.2324	0.5053	3682	96.1
143	00h23m50s	1.1212	23.998	26.907	2556.6	0.3937	0.3805	0.2323	0.5052	3685	96.1
144	00h24m00s	1.1213	23.998	26.909	2557.1	0.3939	0.3806	0.2324	0.5053	3683	96.1
145	00h24m10s	1.1213	23.998	26.909	2556.1	0.3938	0.3807	0.2323	0.5053	3684	96.1

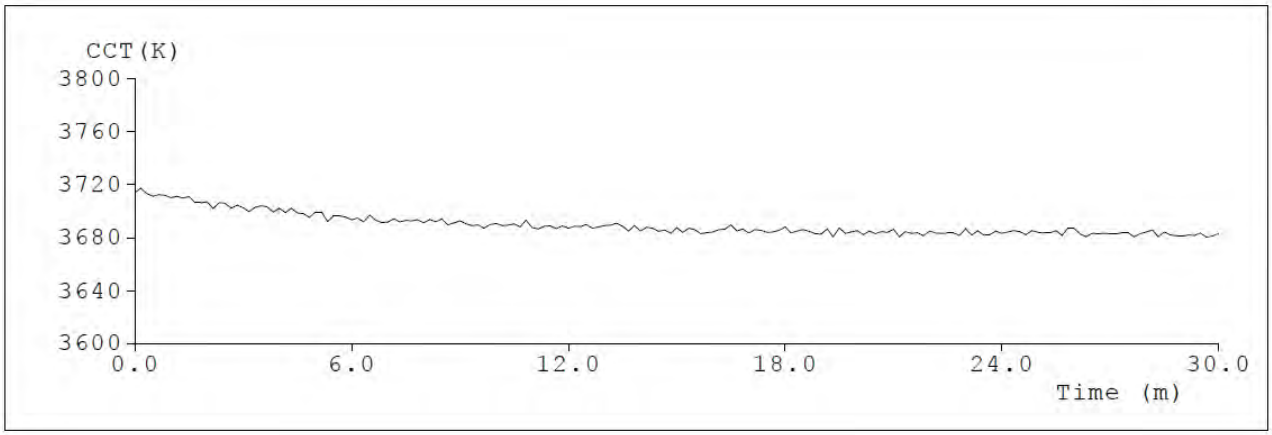
146	00h24m20s	1.1213	23.998	26.909	2556.3	0.3938	0.3807	0.2323	0.5053	3685	96.1
147	00h24m30s	1.1213	23.998	26.909	2556.5	0.3938	0.3805	0.2324	0.5052	3684	96.1
148	00h24m40s	1.1213	23.998	26.909	2556.2	0.3939	0.3806	0.2324	0.5053	3682	96.1
149	00h24m50s	1.1213	23.998	26.909	2556.9	0.3937	0.3806	0.2323	0.5052	3685	96.1
150	00h25m00s	1.1214	23.998	26.911	2556.3	0.3938	0.3806	0.2324	0.5053	3684	96.1
151	00h25m10s	1.1214	23.998	26.911	2555.7	0.3938	0.3806	0.2324	0.5053	3683	96.1
152	00h25m20s	1.1214	23.998	26.911	2554.8	0.3938	0.3806	0.2324	0.5053	3683	96.1
153	00h25m30s	1.1214	23.998	26.911	2556.3	0.3937	0.3805	0.2323	0.5052	3685	96.1
154	00h25m40s	1.1214	23.998	26.911	2556.1	0.3939	0.3805	0.2324	0.5052	3681	96.1
155	00h25m50s	1.1214	23.998	26.911	2557.8	0.3937	0.3805	0.2323	0.5052	3687	96.1
156	00h26m00s	1.1215	23.998	26.914	2556.9	0.3937	0.3806	0.2323	0.5053	3687	96.1
157	00h26m10s	1.1215	23.998	26.914	2556.6	0.3939	0.3808	0.2323	0.5054	3683	96.1
158	00h26m20s	1.1215	23.998	26.914	2555.9	0.3939	0.3806	0.2324	0.5052	3681	96
159	00h26m30s	1.1215	23.998	26.914	2555.1	0.3938	0.3806	0.2324	0.5053	3683	96.1
160	00h26m40s	1.1215	23.998	26.914	2557.4	0.3939	0.3807	0.2324	0.5053	3683	96.1
161	00h26m50s	1.1215	23.998	26.914	2557	0.3939	0.3807	0.2324	0.5053	3683	96.1
162	00h27m00s	1.1215	23.998	26.914	2555.6	0.3939	0.3807	0.2324	0.5053	3683	96.1
163	00h27m10s	1.1216	23.998	26.916	2555.7	0.3938	0.3806	0.2324	0.5053	3683	96.1
164	00h27m20s	1.1216	23.998	26.916	2556.6	0.3938	0.3807	0.2324	0.5053	3683	96.1
165	00h27m30s	1.1216	23.998	26.916	2556.5	0.3938	0.3805	0.2324	0.5052	3683	96.1
166	00h27m40s	1.1216	23.998	26.916	2554.9	0.3939	0.3805	0.2325	0.5052	3681	96.1
167	00h27m50s	1.1216	23.998	26.916	2555.3	0.3939	0.3806	0.2324	0.5053	3683	96.1
168	00h28m00s	1.1216	23.998	26.916	2555.4	0.3939	0.3808	0.2323	0.5053	3684	96.1
169	00h28m10s	1.1216	23.998	26.916	2557.3	0.3937	0.3805	0.2323	0.5052	3686	96.1
170	00h28m20s	1.1216	23.998	26.916	2555.2	0.3939	0.3806	0.2324	0.5053	3680	96.1
171	00h28m30s	1.1216	23.998	26.916	2557.3	0.3939	0.3808	0.2323	0.5053	3684	96.1
172	00h28m40s	1.1217	23.998	26.919	2557.4	0.394	0.3808	0.2324	0.5054	3682	96
173	00h28m50s	1.1217	23.998	26.919	2555.2	0.3939	0.3805	0.2324	0.5052	3681	96.1
174	00h29m00s	1.1217	23.998	26.919	2557	0.394	0.3808	0.2324	0.5054	3681	96.1
175	00h29m10s	1.1217	23.998	26.919	2557	0.3939	0.3806	0.2324	0.5052	3682	96.1
176	00h29m20s	1.1217	23.998	26.919	2557.6	0.3939	0.3807	0.2324	0.5053	3682	96.1

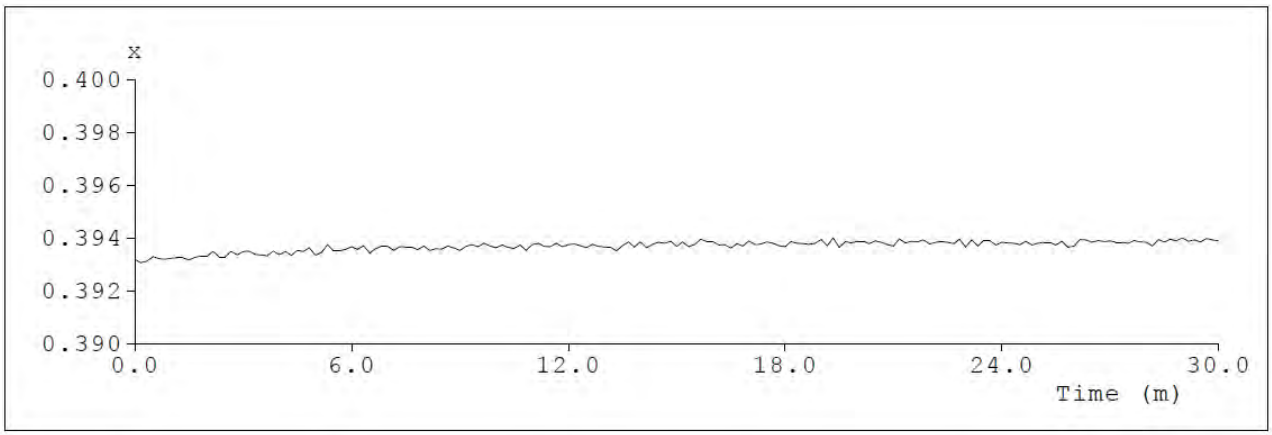
177	00h29m30s	1.1217	23.998	26.919	2556.3	0.3939	0.3807	0.2323	0.5053	3683	96.1
178	00h29m40s	1.1217	23.998	26.919	2555.2	0.394	0.3807	0.2324	0.5053	3680	96.1
179	00h29m50s	1.1217	23.998	26.919	2555.9	0.3939	0.3806	0.2324	0.5053	3681	96.1
180	00h30m00s	1.1218	23.998	26.921	2555.1	0.3939	0.3807	0.2324	0.5053	3683	96.1

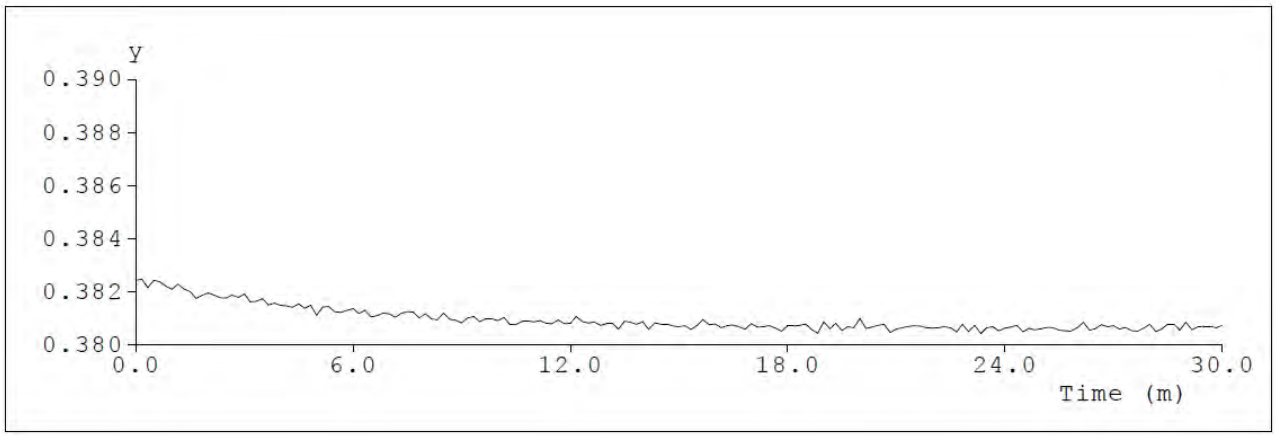
Test curves

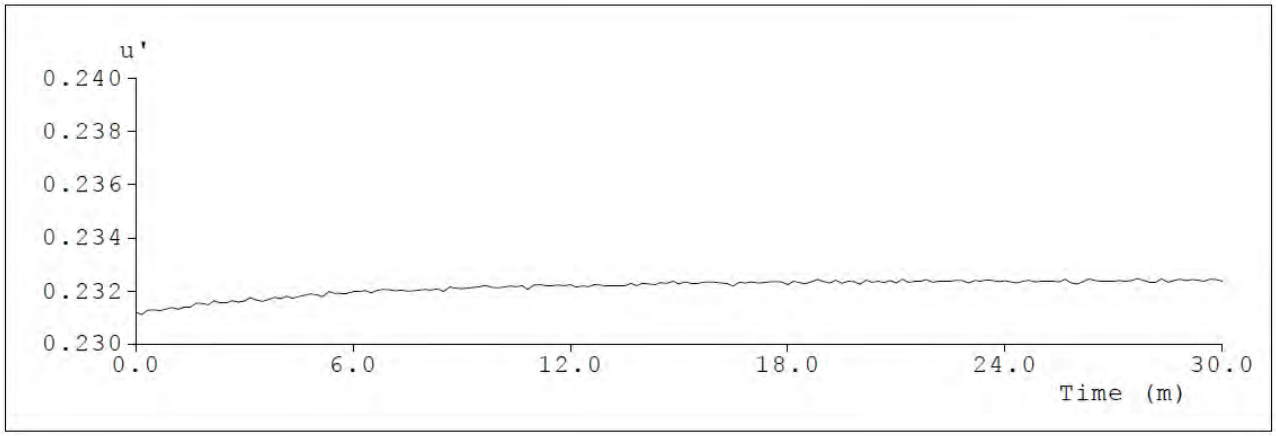


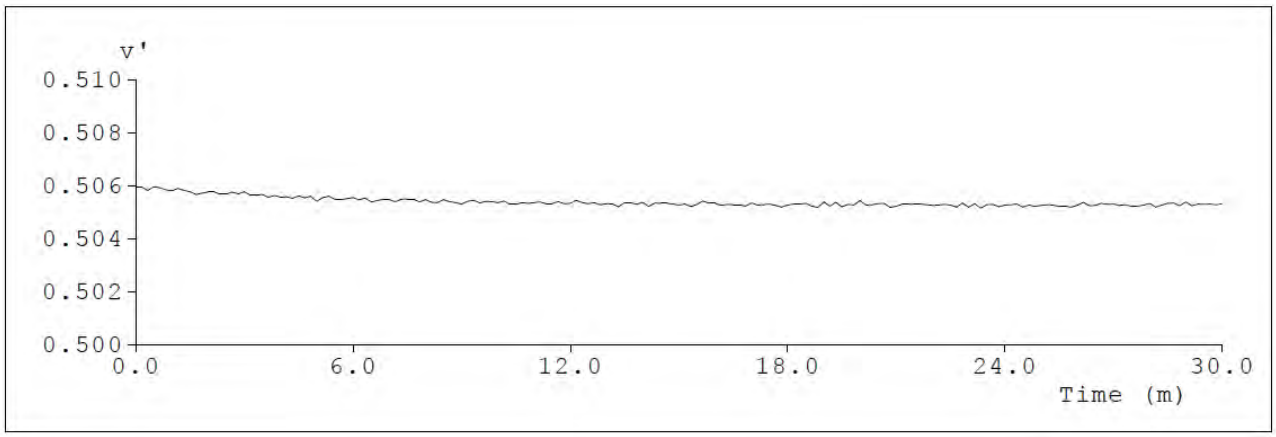

Flux(lm)
2600
2580
2560
2540
2520
2500
0.0
6.0
12.0
18.0
24.0
30.0
Time (m)


CCT(K)
3800
3760
3720
3680
3640
3600
0.0
6.0
12.0
18.0
24.0
30.0
Time (m)


x
0.400
0.398
0.396
0.394
0.392
0.390
0.0
6.0
12.0
18.0
24.0
30.0
Time (m)


y
0.390
0.388
0.386
0.384
0.382
0.380
0.0
6.0
12.0
18.0
24.0
30.0
Time (m)


u'
0.240
0.238
0.236
0.234
0.232
0.230
0.0
6.0
12.0
18.0
24.0
30.0
Time (m)

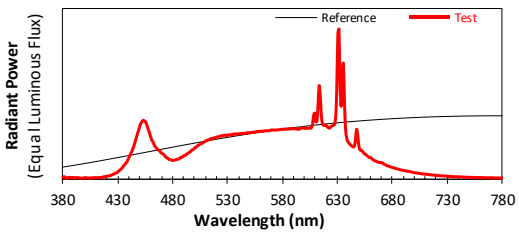

v'
0.510
0.508
0.506
0.504
0.502
0.500
0.0
6.0
12.0
18.0
24.0
30.0
Time (m)

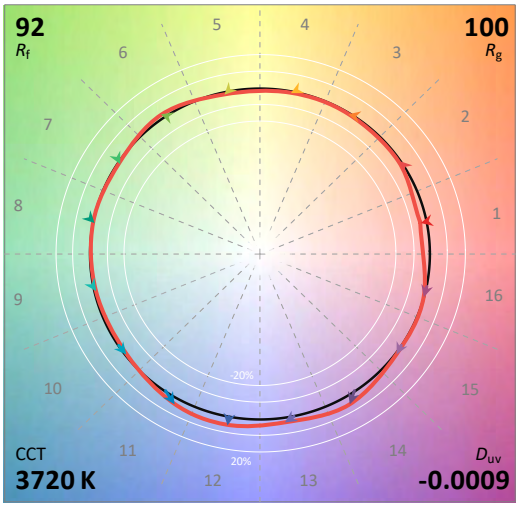
*9.2 ANSI/IES TM-30-18 Color Rendition Report

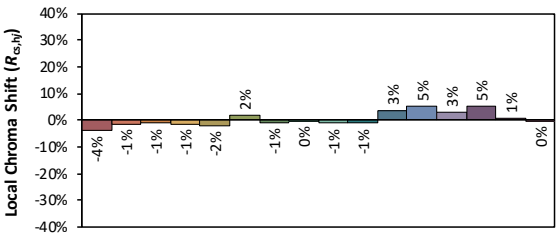
ANSI/IES TM-30-18 Color Rendition Report

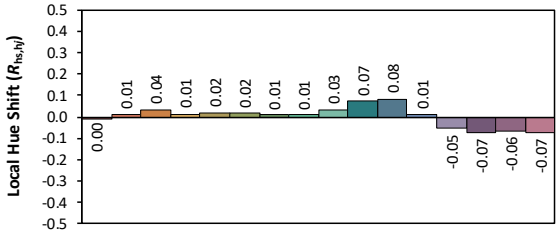
Source: Manufacturer:

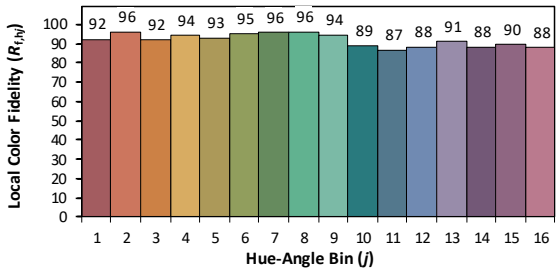
Date: 2023/9/15 Model: LCETHY-1000-NL27-DF-I-31

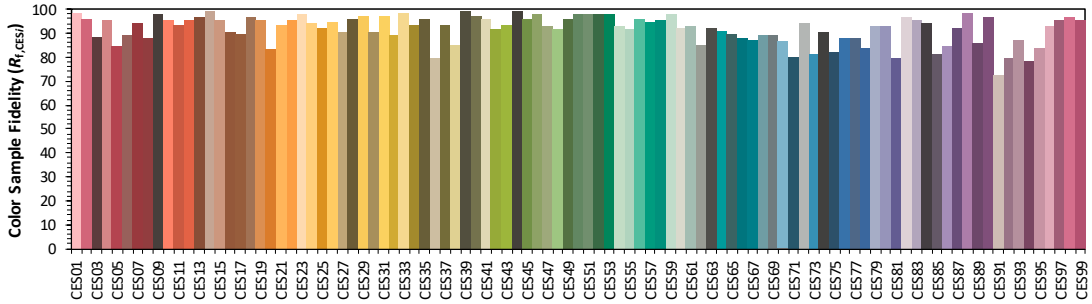












Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

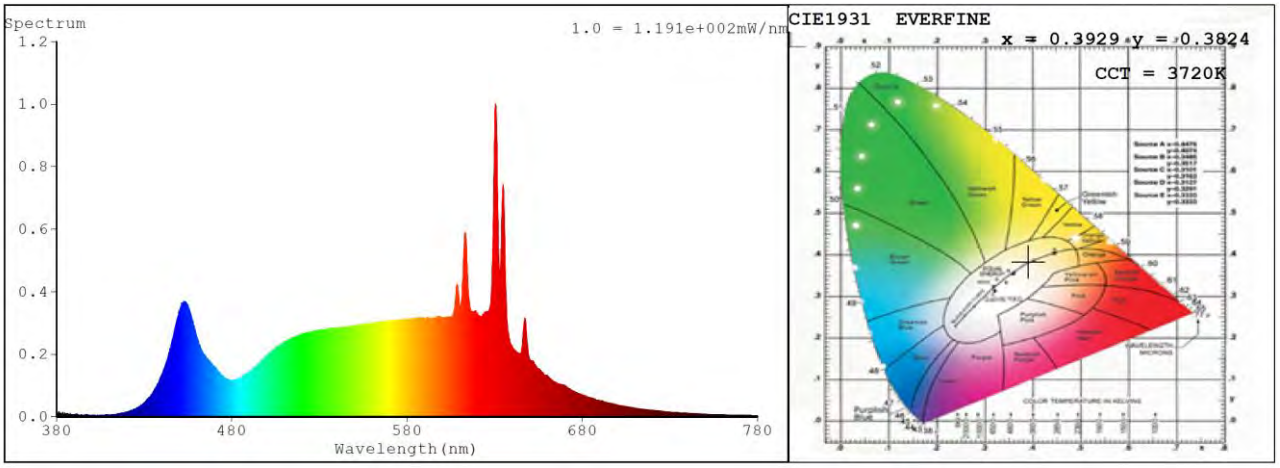
x	0.3929
y	0.3823
u'	0.2311
v'	0.5058

CIE 13.3-1995 (CRI)

R_a	96
R_9	75

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

9.3 Relative Spectral Power Distribution



nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0067	414	0.0062	448	0.2918	482	0.1181	516	0.2541
381	0.0124	415	0.0082	449	0.3121	483	0.1204	517	0.2564
382	0.0038	416	0.0091	450	0.3375	484	0.1223	518	0.2583
383	0.0015	417	0.0118	451	0.3512	485	0.1232	519	0.2601
384	0.0068	418	0.0118	452	0.363	486	0.1283	520	0.2631
385	0.0033	419	0.0147	453	0.3679	487	0.1335	521	0.264
386	0.0072	420	0.0148	454	0.3639	488	0.1346	522	0.266
387	0.0069	421	0.0159	455	0.358	489	0.1396	523	0.2693
388	0.0066	422	0.0178	456	0.3414	490	0.1448	524	0.268
389	0.0081	423	0.0193	457	0.3197	491	0.1455	525	0.2721
390	0.0036	424	0.0235	458	0.3011	492	0.1528	526	0.2725
391	0.0058	425	0.0245	459	0.2779	493	0.1572	527	0.2746
392	0.0065	426	0.0289	460	0.2574	494	0.1621	528	0.2733
393	0.0054	427	0.0315	461	0.2398	495	0.1671	529	0.2716
394	0.0066	428	0.0357	462	0.2266	496	0.1711	530	0.2755
395	0.0036	429	0.0383	463	0.2105	497	0.1797	531	0.2771
396	0.0032	430	0.0443	464	0.2002	498	0.183	532	0.275
397	0.003	431	0.0504	465	0.1919	499	0.1875	533	0.2769
398	0.0031	432	0.0564	466	0.1847	500	0.1955	534	0.281
399	0.0053	433	0.0628	467	0.1793	501	0.1996	535	0.2787
400	0.0058	434	0.0705	468	0.1726	502	0.2059	536	0.2828
401	0.0038	435	0.0803	469	0.1643	503	0.2109	537	0.2817
402	0.0054	436	0.0889	470	0.1598	504	0.2137	538	0.2817
403	0.0034	437	0.097	471	0.1552	505	0.2188	539	0.2832
404	0.0037	438	0.1058	472	0.1476	506	0.2216	540	0.2828
405	0.0047	439	0.1207	473	0.1407	507	0.2247	541	0.2849
406	0.0054	440	0.1341	474	0.1314	508	0.2295	542	0.2843
407	0.0053	441	0.1516	475	0.1309	509	0.2351	543	0.285
408	0.0066	442	0.164	476	0.1236	510	0.238	544	0.2865
409	0.0047	443	0.1804	477	0.1203	511	0.2427	545	0.2857
410	0.0058	444	0.2002	478	0.1192	512	0.2435	546	0.2872
411	0.0058	445	0.2198	479	0.1163	513	0.2443	547	0.2872
412	0.0068	446	0.2441	480	0.1144	514	0.2524	548	0.2916
413	0.0066	447	0.2682	481	0.1162	515	0.2509	549	0.29

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
550	0.2891	599	0.3182	648	0.2791	697	0.0422	746	0.0092
551	0.2918	600	0.3173	649	0.2119	698	0.0401	747	0.009
552	0.2926	601	0.318	650	0.1839	699	0.0385	748	0.0085
553	0.2921	602	0.3173	651	0.1786	700	0.0373	749	0.008
554	0.2941	603	0.3184	652	0.1758	701	0.0365	750	0.0085
555	0.2943	604	0.3196	653	0.1665	702	0.0355	751	0.0078
556	0.2972	605	0.3179	654	0.1583	703	0.0346	752	0.0075
557	0.2975	606	0.3228	655	0.1539	704	0.0331	753	0.0079
558	0.2958	607	0.3464	656	0.1486	705	0.0317	754	0.0076
559	0.3	608	0.4014	657	0.1423	706	0.031	755	0.0068
560	0.2978	609	0.413	658	0.1365	707	0.0299	756	0.0071
561	0.2997	610	0.358	659	0.1328	708	0.0291	757	0.007
562	0.2996	611	0.3652	660	0.1336	709	0.0293	758	0.0063
563	0.3016	612	0.4694	661	0.1246	710	0.0269	759	0.0067
564	0.3009	613	0.5873	662	0.1197	711	0.0273	760	0.0065
565	0.3026	614	0.5168	663	0.115	712	0.0257	761	0.0066
566	0.3021	615	0.3968	664	0.1112	713	0.0253	762	0.006
567	0.3026	616	0.3468	665	0.1095	714	0.0246	763	0.0062
568	0.3033	617	0.3369	666	0.1056	715	0.0239	764	0.0059
569	0.3071	618	0.3359	667	0.1034	716	0.0229	765	0.0056
570	0.3075	619	0.3393	668	0.1013	717	0.0226	766	0.0053
571	0.3071	620	0.3304	669	0.1015	718	0.0216	767	0.0053
572	0.3066	621	0.324	670	0.1014	719	0.0212	768	0.0049
573	0.3076	622	0.3191	671	0.0966	720	0.0201	769	0.0053
574	0.3068	623	0.3224	672	0.0909	721	0.0202	770	0.0048
575	0.3082	624	0.3308	673	0.0891	722	0.0189	771	0.0045
576	0.3088	625	0.3333	674	0.0836	723	0.0182	772	0.0048
577	0.3094	626	0.3377	675	0.081	724	0.0178	773	0.0044
578	0.3103	627	0.3437	676	0.0794	725	0.0173	774	0.0045
579	0.3118	628	0.3861	677	0.0768	726	0.0172	775	0.0045
580	0.3117	629	0.5629	678	0.0738	727	0.0162	776	0.0046
581	0.3125	630	0.9108	679	0.0721	728	0.0164	777	0.0041
582	0.3113	631	0.9421	680	0.069	729	0.0153	778	0.004
583	0.3146	632	0.5974	681	0.068	730	0.0146	779	0.0044
584	0.3125	633	0.4565	682	0.0656	731	0.0145	780	0.0044
585	0.3125	634	0.6083	683	0.0629	732	0.0138		
586	0.3165	635	0.7275	684	0.0618	733	0.0136		
587	0.3142	636	0.489	685	0.0602	734	0.0129		
588	0.3145	637	0.3137	686	0.0582	735	0.0127		
589	0.3154	638	0.2592	687	0.0559	736	0.0123		
590	0.3164	639	0.2353	688	0.054	737	0.0118		
591	0.3142	640	0.2265	689	0.0525	738	0.0119		
592	0.3144	641	0.216	690	0.0515	739	0.0121		
593	0.313	642	0.2108	691	0.05	740	0.0117		
594	0.3118	643	0.2048	692	0.049	741	0.0103		
595	0.3129	644	0.1998	693	0.0468	742	0.0106		
596	0.3162	645	0.204	694	0.0463	743	0.0101		
597	0.3199	646	0.2428	695	0.0444	744	0.0097		
598	0.3214	647	0.3109	696	0.0427	745	0.0091		

10. Goniophotometer Test results for LCETHY-1000-NL27-DF-I-31

10.1 Test Data

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

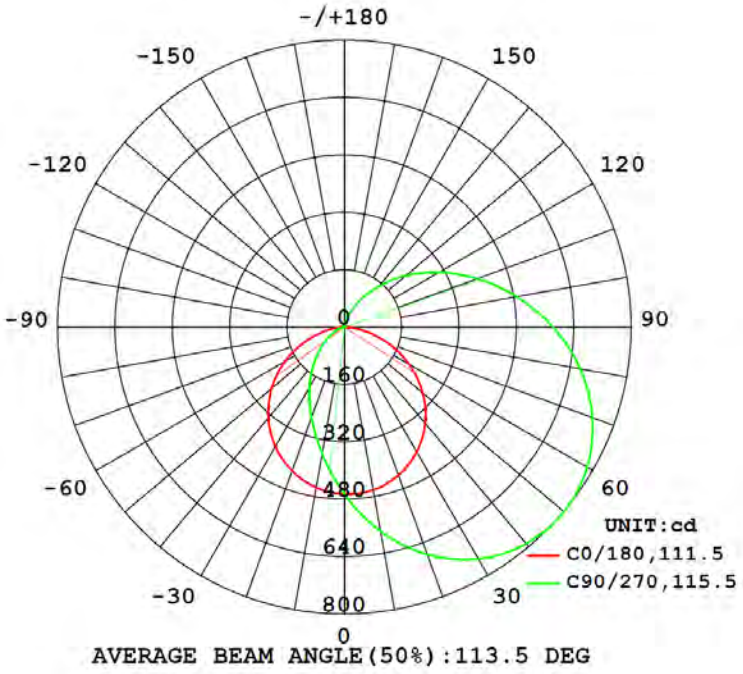
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current(A)	Power Factor	Power(W)
24	--	1.15	1.0000	27.6

Optical Measurement

Luminous Flux (lm)	Efficacy(lm/W)	Imax (cd)	η up (%)	η down (%)
2596.39	94.07	799.8	21.3	78.7

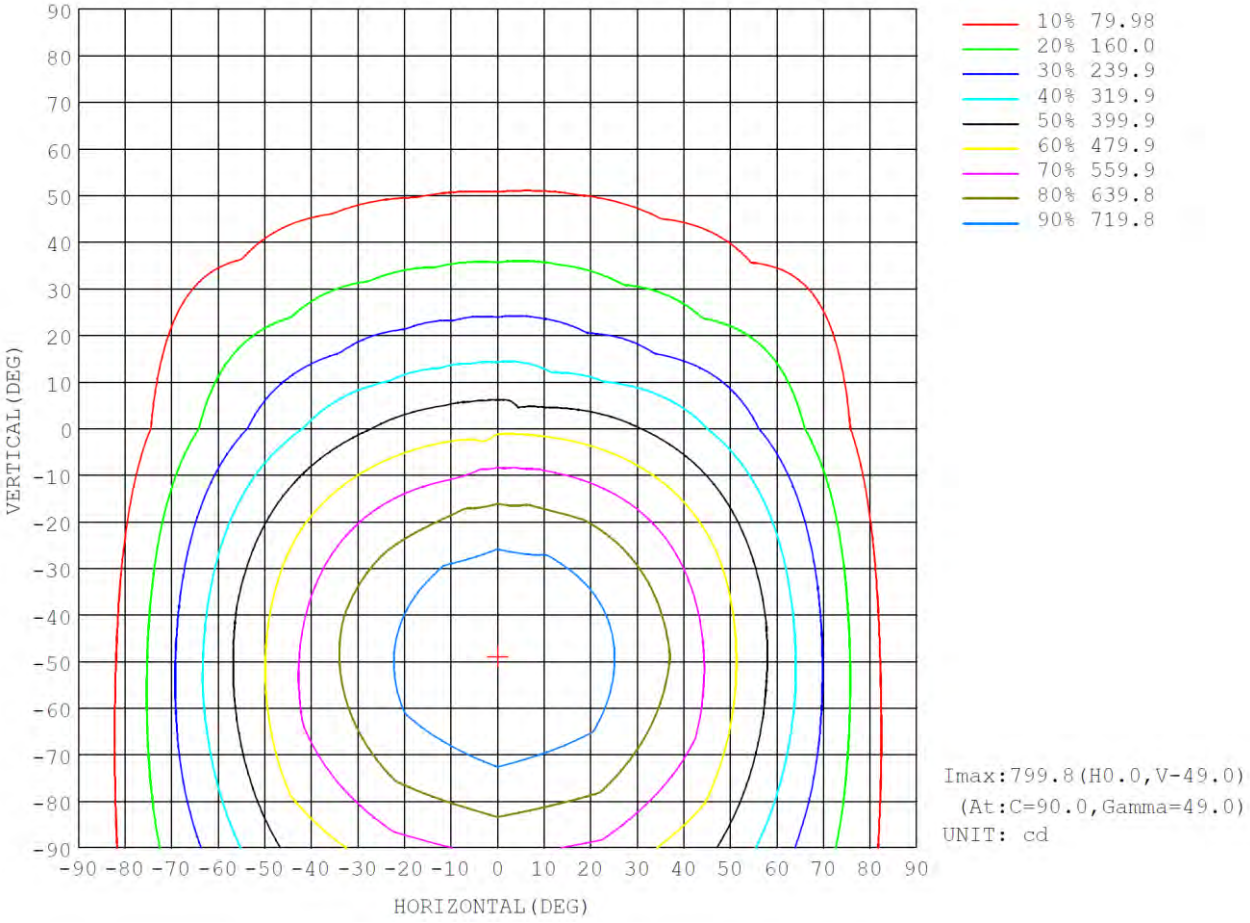
10.2 Luminous Intensity Distribution



10.3 Zonal Flux Diagram

γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum,lamp
10	460.9	543.9	576.9	523.4	454.2	383.8	359.4	371.1	0- 10	44.03	44.03	1.7,1.7
20	439.8	607.8	674.4	584.5	427.0	303.9	270.3	294.9	10- 20	129.1	173.2	6.67,6.67
30	402.8	651.3	746.0	626.5	385.4	231.6	196.2	224.9	20- 30	204.8	378.0	14.6,14.6
40	350.8	670.5	788.2	645.2	330.8	166.0	134.0	160.7	30- 40	264.0	642.0	24.7,24.7
50	285.5	664.4	799.6	640.1	266.2	108.2	83.18	103.4	40- 50	300.7	942.7	36.3,36.3
60	209.1	633.5	781.5	612.1	191.9	60.63	44.78	56.46	50- 60	312.1	1255	48.3,48.3
70	127.0	579.7	736.1	562.7	113.6	26.85	19.16	23.84	60- 70	298.9	1554	59.8,59.8
80	48.67	506.2	667.4	495.2	41.57	8.436	5.103	6.837	70- 80	266.3	1820	70.1,70.1
90	7.503	419.9	581.6	415.0	6.688	3.912	1.907	3.372	80- 90	223.2	2043	78.7,78.7
100	6.957	333.8	488.5	333.3	6.166	2.961	1.759	2.060	90-100	180.4	2224	85.6,85.6
110	6.044	256.0	395.3	259.1	5.445	1.738	1.466	1.047	100-110	138.7	2362	91,91
120	4.976	187.9	306.5	193.7	4.456	0.8817	1.111	0.7203	110-120	99.84	2462	94.8,94.8
130	3.841	128.9	224.1	136.6	3.480	0.7732	0.9089	0.8148	120-130	66.25	2528	97.4,97.4
140	2.762	80.25	149.2	88.62	2.629	0.9407	0.9277	1.018	130-140	39.24	2568	98.9,98.9
150	1.837	40.74	85.33	48.34	1.858	1.125	1.002	1.028	140-150	19.61	2587	99.7,99.7
160	1.112	16.33	34.41	17.41	1.282	1.099	0.9605	0.9437	150-160	7.264	2595	99.9,99.9
170	0.9073	4.313	8.442	4.790	1.030	1.005	0.9307	0.8806	160-170	1.657	2596	100,100
180	1.027	0.9904	0.7262	0.7403	1.022	0.9989	0.9316	0.8570	170-180	0.1644	2596	100,100
DEG	LUMINOUS INTENSITY:cd									UNIT:lm		

10.4 Isocandela Diagram



10.5 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	466	466	466	466	466	465	449	456	466	466	466	466	466	465	449	456			
5	466	487	506	518	522	516	487	476	462	442	425	415	411	415	410	434			
10	461	505	544	570	577	565	523	491	454	414	384	365	359	367	371	408			
15	452	519	578	617	628	611	556	503	443	385	343	319	312	321	332	380			
20	440	529	608	659	674	651	585	512	427	354	304	278	270	280	295	350			
25	423	534	632	695	714	686	608	515	408	321	267	239	232	242	260	319			
30	403	535	651	725	746	713	626	515	385	288	232	203	196	207	225	286			
35	379	531	664	747	771	734	639	510	360	255	198	171	164	174	192	253			
40	351	522	671	762	788	748	645	501	331	220	166	140	134	143	161	219			
45	320	509	671	770	798	754	646	487	299	187	136	113	107	116	131	185			
50	285	490	664	770	800	753	640	469	266	154	108	88.0	83.2	90.5	103	152			
55	248	467	652	763	794	746	629	447	230	123	82.9	66.3	62.4	68.3	78.4	120			
60	209	439	633	749	781	731	612	421	192	93.4	60.6	47.7	44.8	49.3	56.5	90.3			
65	168	407	609	729	762	711	590	391	153	66.4	41.7	32.4	30.4	33.6	38.1	62.9			
70	127	372	580	702	736	684	563	358	114	43.3	26.8	20.5	19.2	21.3	23.8	39.7			
75	86.2	332	545	670	704	652	531	322	75.6	25.4	15.7	11.7	10.9	12.2	13.4	22.2			
80	48.7	290	506	632	667	616	495	283	41.6	13.2	8.44	5.75	5.10	5.93	6.84	11.3			
85	19.8	247	464	590	626	575	456	243	16.3	7.19	4.45	2.46	1.98	2.41	3.79	6.18			
90	7.50	205	420	546	582	532	415	204	6.69	5.73	3.91	2.32	1.91	2.18	3.37	4.45			
95	7.26	170	376	500	535	487	374	169	5.91	4.34	3.53	2.21	1.85	2.04	2.70	2.34			
100	6.96	140	334	453	489	442	333	140	6.17	2.56	2.96	2.04	1.76	1.86	2.06	0.94			
105	6.55	117	294	407	442	398	295	118	5.86	1.22	2.33	1.83	1.63	1.65	1.49	0.58			
110	6.04	96.5	256	362	395	355	259	98.2	5.45	0.65	1.74	1.59	1.47	1.42	1.05	0.61			
115	5.55	79.0	221	319	350	313	225	78.0	4.96	0.58	1.24	1.35	1.29	1.19	0.81	0.82			
120	4.98	63.9	188	277	307	273	194	65.1	4.46	0.67	0.88	1.13	1.11	1.00	0.72	1.10			
125	4.40	51.0	157	238	264	234	164	50.2	3.95	0.86	0.76	0.98	0.98	0.88	0.73	1.36			
130	3.84	39.7	129	200	224	197	137	42.6	3.48	1.07	0.77	0.91	0.91	0.84	0.81	1.55			
135	3.29	29.9	104	164	186	162	112	31.7	3.04	1.28	0.84	0.91	0.91	0.85	0.93	1.64			
140	2.76	22.6	80.3	130	149	130	88.6	24.7	2.63	1.43	0.94	0.93	0.93	0.90	1.02	1.62			
145	2.27	16.4	59.6	100	116	100	67.8	18.3	2.24	1.53	1.04	0.98	0.98	0.95	1.05	1.51			
150	1.84	12.0	40.7	73.0	85.3	73.4	48.3	13.4	1.86	1.53	1.13	1.03	1.00	0.98	1.03	1.35			
155	1.40	8.21	27.2	47.9	57.7	48.5	29.5	9.07	1.55	1.44	1.15	1.03	1.00	0.97	0.97	1.17			
160	1.11	5.26	16.3	29.3	34.4	29.7	17.4	5.63	1.28	1.26	1.10	1.00	0.96	0.93	0.94	0.99			
165	0.89	2.85	9.15	15.6	18.4	15.5	10.1	3.52	1.05	1.06	1.02	0.99	0.94	0.90	0.89	0.96			
170	0.91	1.29	4.31	7.11	8.44	5.79	4.79	1.98	1.03	1.03	1.00	1.00	0.93	0.86	0.88	0.93			
175	1.00	1.02	1.31	2.02	2.44	1.59	2.15	1.07	1.03	1.03	0.99	0.98	0.94	0.83	0.83	0.88			
180	1.03	1.00	0.99	0.94	0.73	0.18	0.74	0.85	1.02	1.02	1.00	0.98	0.93	0.79	0.86	0.86			

11. Photo of sample

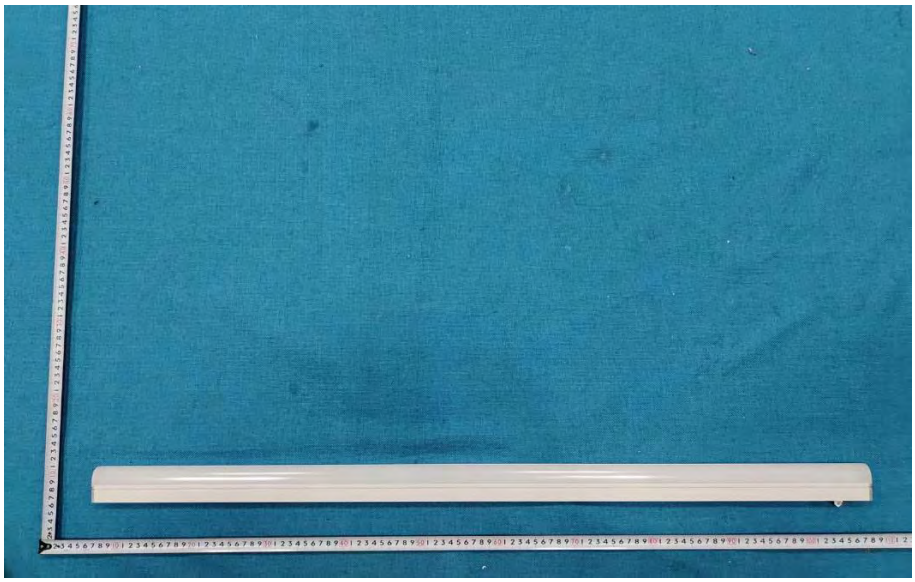


Figure 1 Overview

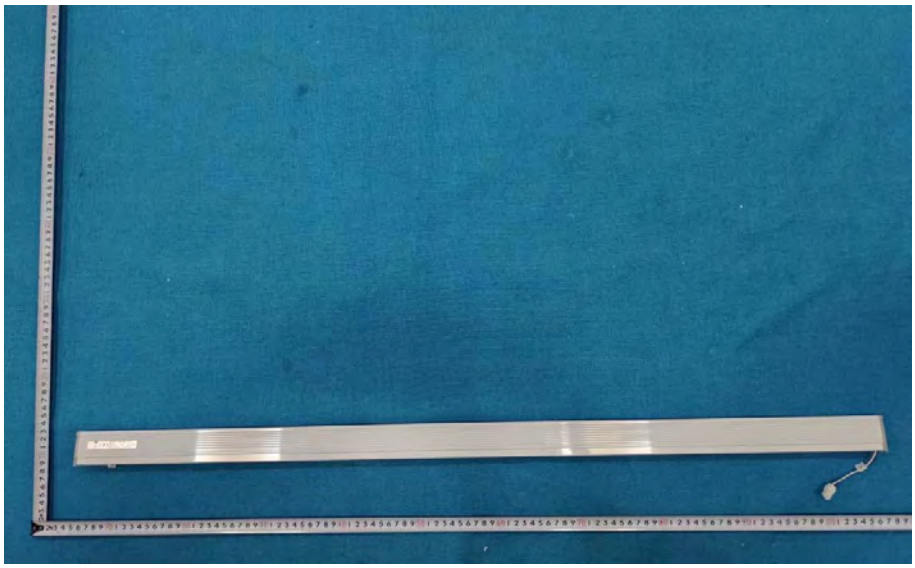


Figure 2 Overview

---End of Report---