

# Test Report Of ANSI/IES LM-79-19

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

Report Number..... : N02A23121368L00201

Client..... : ROYALUX EXPORTS PRIVATE LIMITED

Address..... : 150-B, NOIDA SPECIAL ECONOMIC ZONE, NOIDA, GAUTAM BUDDHA  
NAGAR, UTTAR PRADESH, 201305, INDIA

Test Model..... : 1004Y403020W354050L

Brand Name..... : 

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..... : Apr. 11, 2024

Date of test ..... : Apr. 11, 2024 - Apr. 26, 2024

Date of report..... : Apr. 26, 2024

Tested by:



Allen Chen/ Test Engineer

Checked by:



Jarvis Zhang/ Project Engineer

Approved by

  
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.

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

## 1. Product Description for Equipment under Test(EUT)

Representative (Tested) Model:	1004Y403020W354050L
Manufacturer:	ROYALUX EXPORTS PRIVATE LIMITED
Product Type:	Low Bay Luminaires (Commercial and Industrial)
Rated Voltage/Frequency:	100-277V AC, 50/60Hz
Rated Power:	20W/30W/40W
Rated luminous flux:	2700lm/4050lm/5400lm
Nominal CCT:	3500K/4000K/5000K
LED Manufacturer:	Bridgelux Inc.
LED Model No.:	BXEN-35E-11M-3CA, BXEN-50E-11M-3CA

## 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)
- ANSI C82.77-10:2014 Harmonic Emission Limits – Related Power Quality Requirements for Lighting Equipment-Solid State

## 3. Test equipment list

Test Equipment	Serial No.	Model No.	Calibration due date
Full-field Speed Goniophotometer	MD-E028	GO-R5000	2024/09/16
Digital Power Meter	MD-E001	PF2010	2024/09/16
AC Testing Power Source	MD-E002	DPS1060	2024/09/16
Total Spectral Radiant Flux Standard Lamp	MD-E007	D908S	2024/09/25
Integrating Sphere System	MD-E029	2M	2024/09/16
High Accuracy Array Spectroradiometer	MD-E011	HAAS-3000	2024/09/16
Digital Power Meter	MD-E008	PF310	2024/09/16
AC Testing Power Source	MD-E010	DPS1010	2024/09/16
Standard Lamp	MD-E036	D204	2024/09/25

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  $1^{\circ}$  vertical intervals and  $22.5^{\circ}$  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  $4\pi$  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.

### THD and PF Test

The sample was tested according to the ANSI C82.77-10:2014.

The sample was operated at rated voltage and was stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

## 5. Integrating Sphere Test Results

### 5.1 Test Data

<b>Test Ambient Temperature (Integrating sphere internal temperature)</b>	25.3℃	<b>Test orientation</b>	Downward
<b>Operate time(Min.)</b>	60	<b>stabilization time(Min.)</b>	30

### Optical and Electrical Measurement Result

Mode	Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)	CCT (K)
40W-3500K	119.87	60	0.3335	38.58	0.965	5238.3	135.77	3566
40W-4000K	119.85	60	0.3335	38.46	0.9622	5560.7	144.59	4208
40W-5000K	119.88	60	0.3353	38.7	0.9628	5441.4	140.62	4860

Mode	Ra	R9	Rf	Rg	x	y	u'	v'	Duv
40W-3500K	84.6	13	86	95	0.4014	0.3882	0.2342	0.5097	-2.31E-04
40W-4000K	86	19	85	95	0.3704	0.3657	0.2229	0.4951	-2.20E-03
40W-5000K	85.1	15	85	95	0.3493	0.3561	0.2125	0.4874	5.82E-04

### 5.2 Mode # 40W-3500K Color Rendering Index

**Ra**  
**84.6**

**R1**  
83

**R2**  
92

**R3**  
97

**R4**  
83

**R5**  
84

**R6**  
89

**R7**  
85

**R8**  
64

**R9**  
13

**R10**  
81

**R11**  
83

**R12**  
70

**R13**  
86

**R14**  
99

**R15**  
77

\*5.3.1 Mode # 40W-3500K ANSI/IES TM-30-18 Color Rendition Report

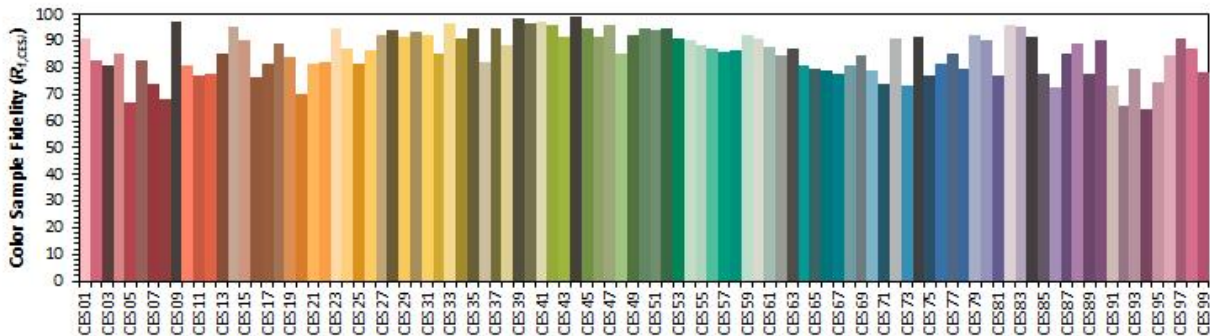
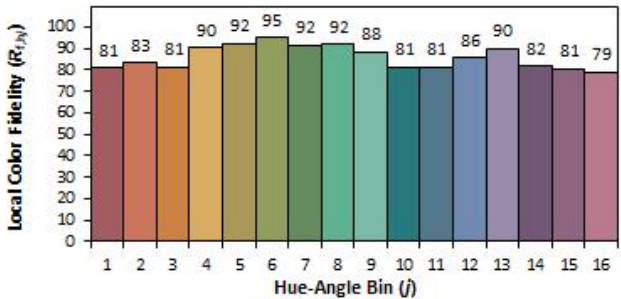
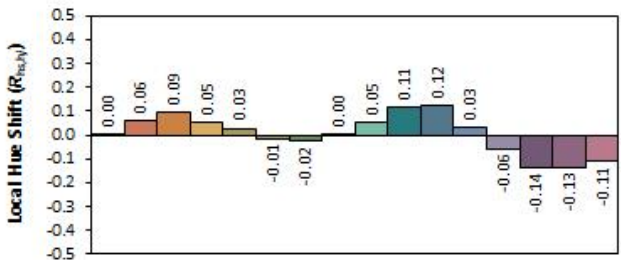
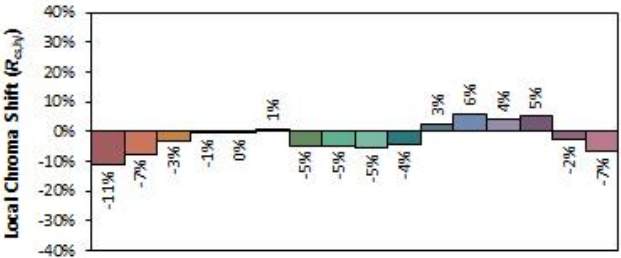
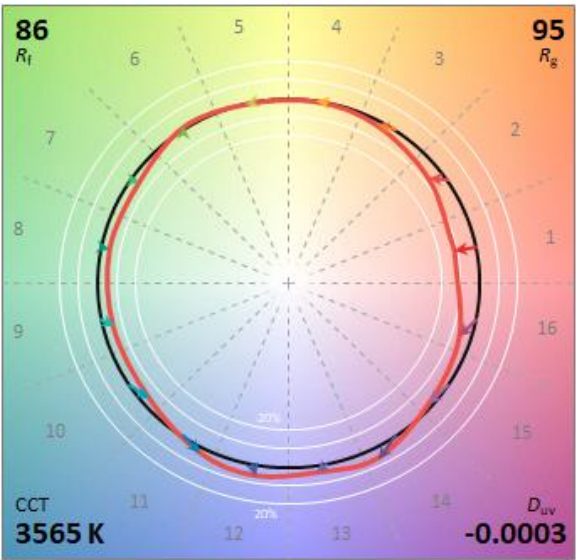
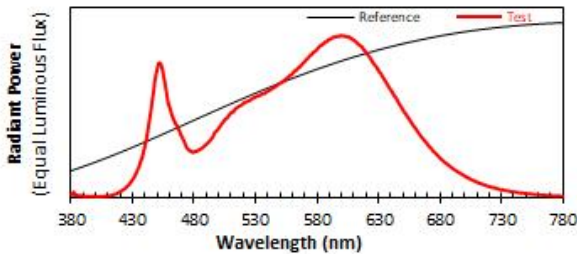
ANSI/IES TM-30-18 Color Rendition Report

Source: BXEN-35E-11M-3CA

Date: 2024/4/26

Manufacturer: ROYALUX EXPORTS PRIVATE LIMITED

Model: 1004Y403020W354050L



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

$x$  0.4014  
 $y$  0.3881  
 $u'$  0.2343  
 $v'$  0.5096

CIE 13.3-1995  
(CRI)  
 $R_a$  85  
 $R_g$  13

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

\*5.3.2 Mode # 40W-4000K ANSI/IES TM-30-18 Color Rendition Report

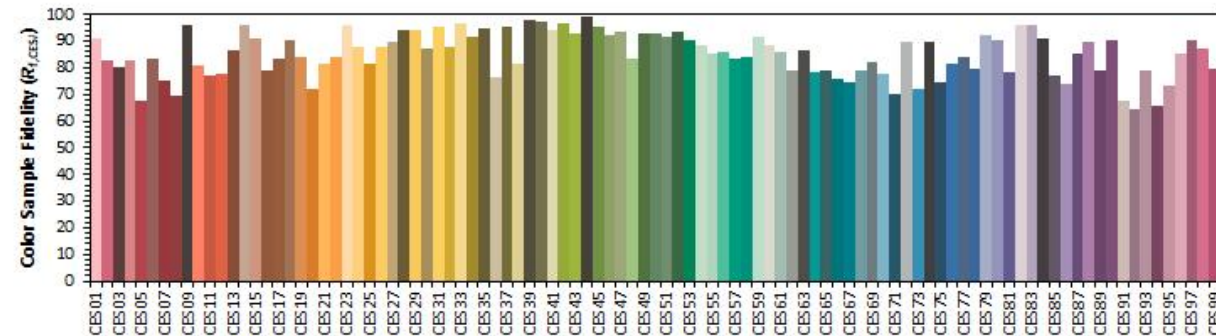
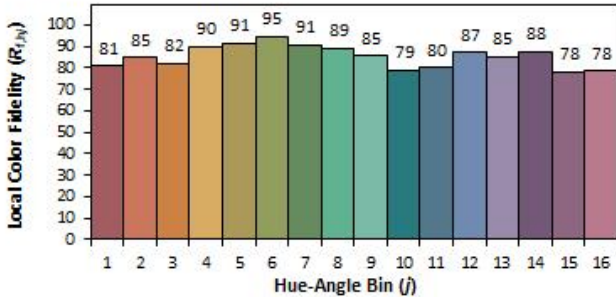
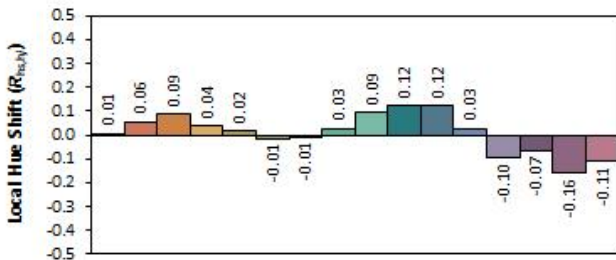
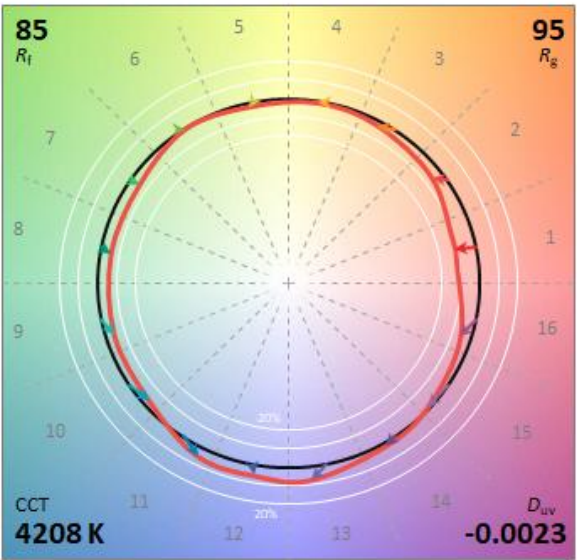
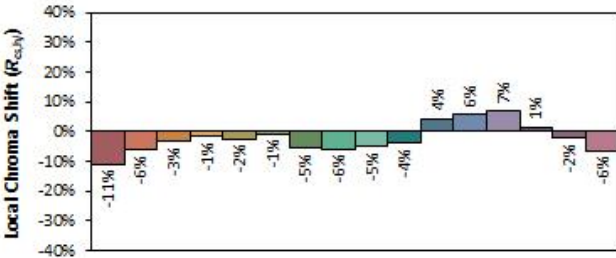
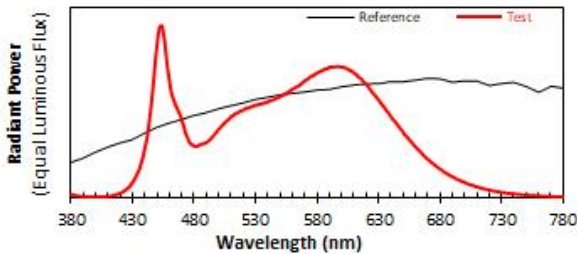
ANSI/IES TM-30-18 Color Rendition Report

Source: BXEN-35E-11M-3CA, BXEN-50E-11M-3CA

Manufacturer: ROYALUX EXPORTS PRIVATE LIMITED

Date: 2024/4/26

Model: 1004Y403020W354050L



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

$x$  0.3704  
 $y$  0.3656  
 $u'$  0.2229  
 $v'$  0.4951

CIE 13.3-1995  
(CRI)  
 $R_a$  86  
 $R_g$  19

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



\*5.3.3 Mode # 40W-5000K ANSI/IES TM-30-18 Color Rendition Report

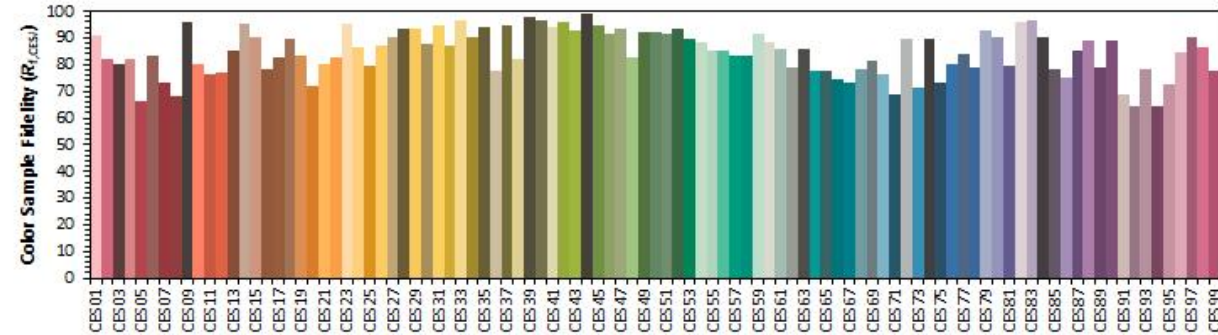
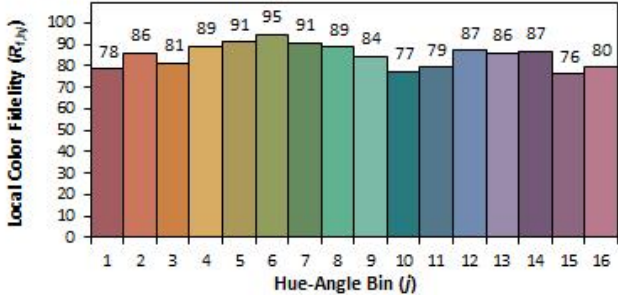
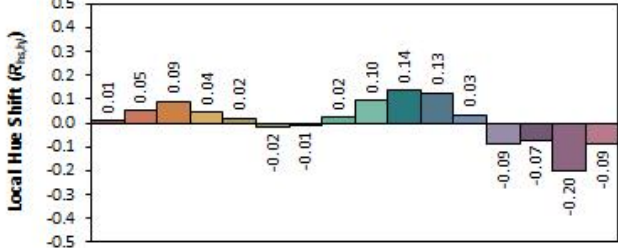
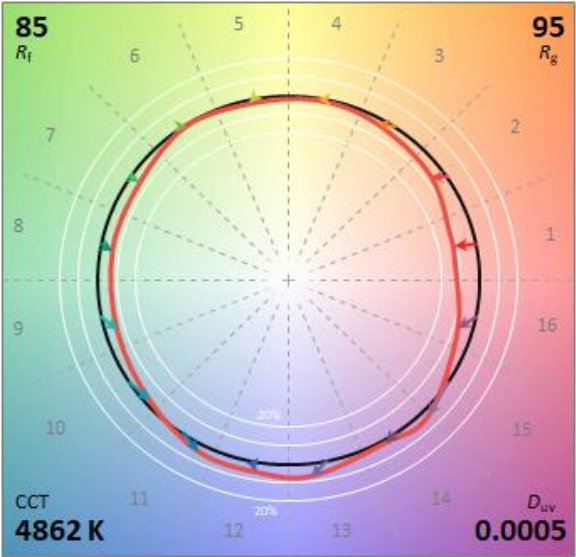
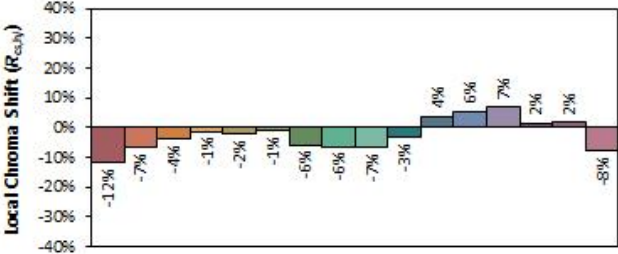
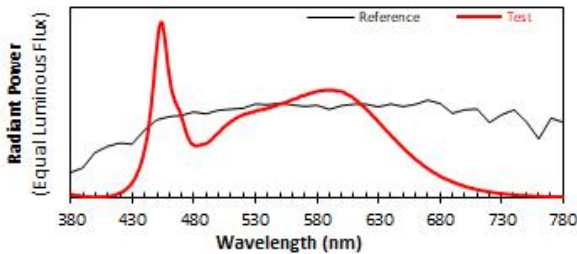
ANSI/IES TM-30-18 Color Rendition Report

Source: BXEN-50E-11M-3CA

Manufacturer: ROYALUX EXPORTS PRIVATE LIMITED

Date: 2024/4/26

Model: 1004Y403020W354050L



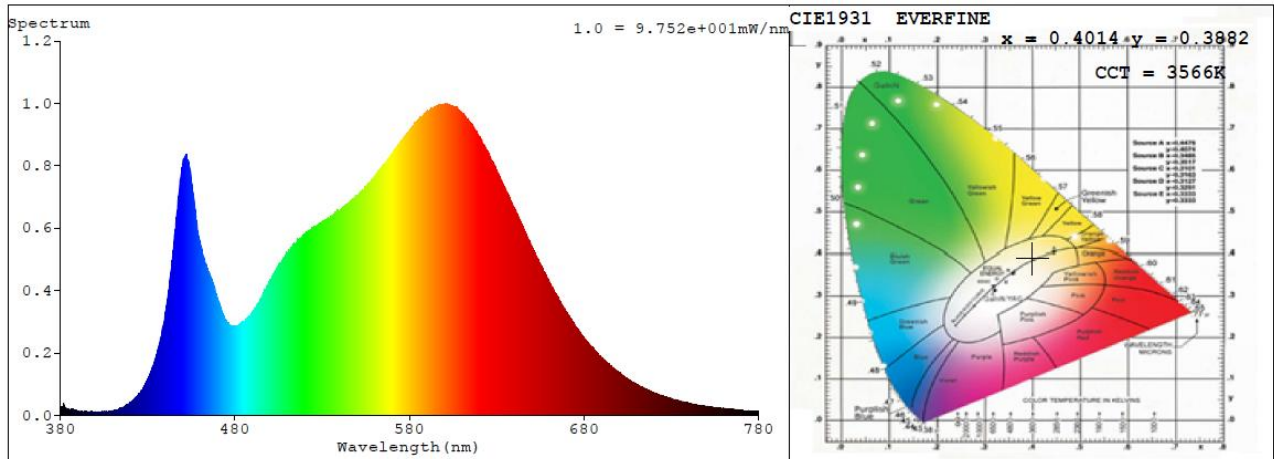
Notes: This is a recommended method for displaying ANSI/IES TM-30-18 information.

$x$  0.3492  
 $y$  0.3559  
 $u'$  0.2125  
 $v'$  0.4874

CIE 13.3-1995  
(CRI)  
 $R_a$  85  
 $R_g$  15

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

#### 5.4 Mode # 40W-3500K Relative Spectral Power Distribution



nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	0.0225	414	0.0193	448	0.7193	482	0.2872	516	0.5606
381	0.0224	415	0.024	449	0.7589	483	0.2915	517	0.5665
382	0.0385	416	0.0258	450	0.7917	484	0.2975	518	0.5683
383	0.0176	417	0.0278	451	0.8256	485	0.3008	519	0.5745
384	0.0207	418	0.0321	452	0.8305	486	0.3049	520	0.5796
385	0.0185	419	0.0356	453	0.8209	487	0.3102	521	0.5873
386	0.0134	420	0.0422	454	0.7963	488	0.318	522	0.5896
387	0.0163	421	0.045	455	0.7571	489	0.324	523	0.5939
388	0.0168	422	0.051	456	0.7173	490	0.3327	524	0.5959
389	0.0156	423	0.0558	457	0.6737	491	0.3359	525	0.5991
390	0.0142	424	0.0602	458	0.6235	492	0.3465	526	0.6028
391	0.0076	425	0.0692	459	0.584	493	0.3528	527	0.6106
392	0.0128	426	0.0765	460	0.5616	494	0.3629	528	0.613
393	0.0119	427	0.0825	461	0.5372	495	0.3748	529	0.6172
394	0.0103	428	0.0933	462	0.5095	496	0.3883	530	0.6207
395	0.0118	429	0.1044	463	0.4873	497	0.4053	531	0.6249
396	0.0094	430	0.1152	464	0.4723	498	0.4092	532	0.6277
397	0.0114	431	0.1257	465	0.4553	499	0.4181	533	0.63
398	0.0133	432	0.1417	466	0.4459	500	0.4296	534	0.6301
399	0.0104	433	0.1559	467	0.4288	501	0.4394	535	0.6399
400	0.0081	434	0.1744	468	0.4139	502	0.4512	536	0.6418
401	0.0106	435	0.191	469	0.3928	503	0.4611	537	0.6413
402	0.0105	436	0.2147	470	0.3773	504	0.4703	538	0.6469
403	0.0097	437	0.2351	471	0.3638	505	0.4819	539	0.6552
404	0.0117	438	0.2576	472	0.348	506	0.4867	540	0.6554
405	0.0095	439	0.2896	473	0.328	507	0.4937	541	0.6609
406	0.0107	440	0.3202	474	0.3097	508	0.5046	542	0.6648
407	0.0112	441	0.3568	475	0.3042	509	0.5147	543	0.6689
408	0.0139	442	0.3995	476	0.2914	510	0.5229	544	0.6766
409	0.0131	443	0.4477	477	0.291	511	0.5301	545	0.6806
410	0.0149	444	0.4964	478	0.2852	512	0.5281	546	0.6824
411	0.0144	445	0.5445	479	0.2804	513	0.5434	547	0.69
412	0.0162	446	0.5999	480	0.2844	514	0.5523	548	0.6946
413	0.0183	447	0.6535	481	0.2872	515	0.5555	549	0.7032



nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
550	0.704	599	0.9962	648	0.5671	697	0.1508	746	0.0326
551	0.7098	600	0.9981	649	0.5563	698	0.1473	747	0.0324
552	0.7139	601	0.9926	650	0.5416	699	0.1433	748	0.0313
553	0.7217	602	0.9974	651	0.5291	700	0.1359	749	0.0301
554	0.7251	603	0.9936	652	0.5206	701	0.1353	750	0.0286
555	0.7344	604	0.991	653	0.5085	702	0.1279	751	0.0281
556	0.7381	605	0.9902	654	0.4966	703	0.1252	752	0.0276
557	0.7448	606	0.9901	655	0.4863	704	0.1212	753	0.0263
558	0.7525	607	0.9819	656	0.476	705	0.1181	754	0.0265
559	0.7556	608	0.9816	657	0.4611	706	0.1123	755	0.0252
560	0.7644	609	0.9732	658	0.4499	707	0.1097	756	0.0245
561	0.7733	610	0.9713	659	0.4404	708	0.1067	757	0.0238
562	0.7817	611	0.9613	660	0.4313	709	0.1042	758	0.0228
563	0.784	612	0.9596	661	0.4195	710	0.0993	759	0.0222
564	0.7932	613	0.9488	662	0.4098	711	0.0967	760	0.0218
565	0.8017	614	0.9433	663	0.3965	712	0.092	761	0.0215
566	0.8052	615	0.9362	664	0.3878	713	0.0911	762	0.0205
567	0.8149	616	0.9345	665	0.3768	714	0.0884	763	0.0203
568	0.8207	617	0.9233	666	0.3671	715	0.0851	764	0.019
569	0.8321	618	0.9113	667	0.3586	716	0.0835	765	0.0194
570	0.8373	619	0.9046	668	0.3506	717	0.08	766	0.0189
571	0.8478	620	0.8949	669	0.341	718	0.0782	767	0.0183
572	0.8546	621	0.8851	670	0.3314	719	0.0739	768	0.0174
573	0.8616	622	0.8726	671	0.3215	720	0.0735	769	0.0175
574	0.8706	623	0.8653	672	0.3117	721	0.0698	770	0.0166
575	0.8817	624	0.8536	673	0.307	722	0.069	771	0.0165
576	0.8825	625	0.8376	674	0.2946	723	0.0669	772	0.0154
577	0.8958	626	0.8295	675	0.2873	724	0.0641	773	0.0148
578	0.8976	627	0.8175	676	0.2798	725	0.0629	774	0.0153
579	0.906	628	0.809	677	0.2728	726	0.0598	775	0.015
580	0.9118	629	0.7991	678	0.2651	727	0.0585	776	0.0141
581	0.922	630	0.785	679	0.2573	728	0.0562	777	0.0138
582	0.9296	631	0.7725	680	0.2476	729	0.0538	778	0.0136
583	0.9385	632	0.7665	681	0.2414	730	0.0547	779	0.0129
584	0.9388	633	0.7501	682	0.2329	731	0.0516	780	0.0129
585	0.9457	634	0.7408	683	0.2287	732	0.05		
586	0.9544	635	0.7251	684	0.2204	733	0.0478		
587	0.959	636	0.7141	685	0.2162	734	0.0471		
588	0.9616	637	0.7024	686	0.2085	735	0.0459		
589	0.9682	638	0.6881	687	0.2024	736	0.0444		
590	0.9759	639	0.6762	688	0.1978	737	0.0428		
591	0.974	640	0.6656	689	0.1921	738	0.0414		
592	0.9807	641	0.6559	690	0.1848	739	0.0398		
593	0.9874	642	0.639	691	0.1812	740	0.0394		
594	0.9866	643	0.6286	692	0.1748	741	0.0377		
595	0.989	644	0.6186	693	0.1697	742	0.037		
596	0.9925	645	0.6072	694	0.1652	743	0.0359		
597	0.9936	646	0.5919	695	0.16	744	0.0345		
598	0.9932	647	0.5802	696	0.1561	745	0.0332		

## 6. Goniophotometer Test results for mode # 40W-3500K

### 6.1 Test Data

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

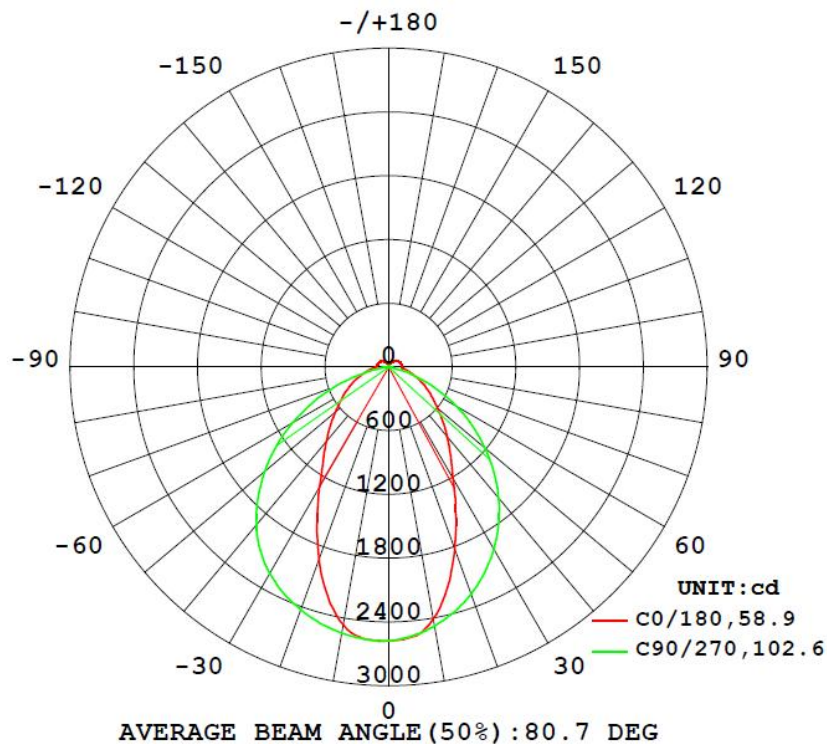
### Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current(A)	Power Factor	Power(W)
119.95	60	0.3225	0.9941	38.46

### Optical Measurement

Luminous Flux (lm)	Efficacy(lm/W)	I <sub>max</sub> (cd)	S/MH(C0/180)	S/MH(C90/270)	ZL (20-50°)
5236.35	136.15	2582	0.88	1.29	48.8%

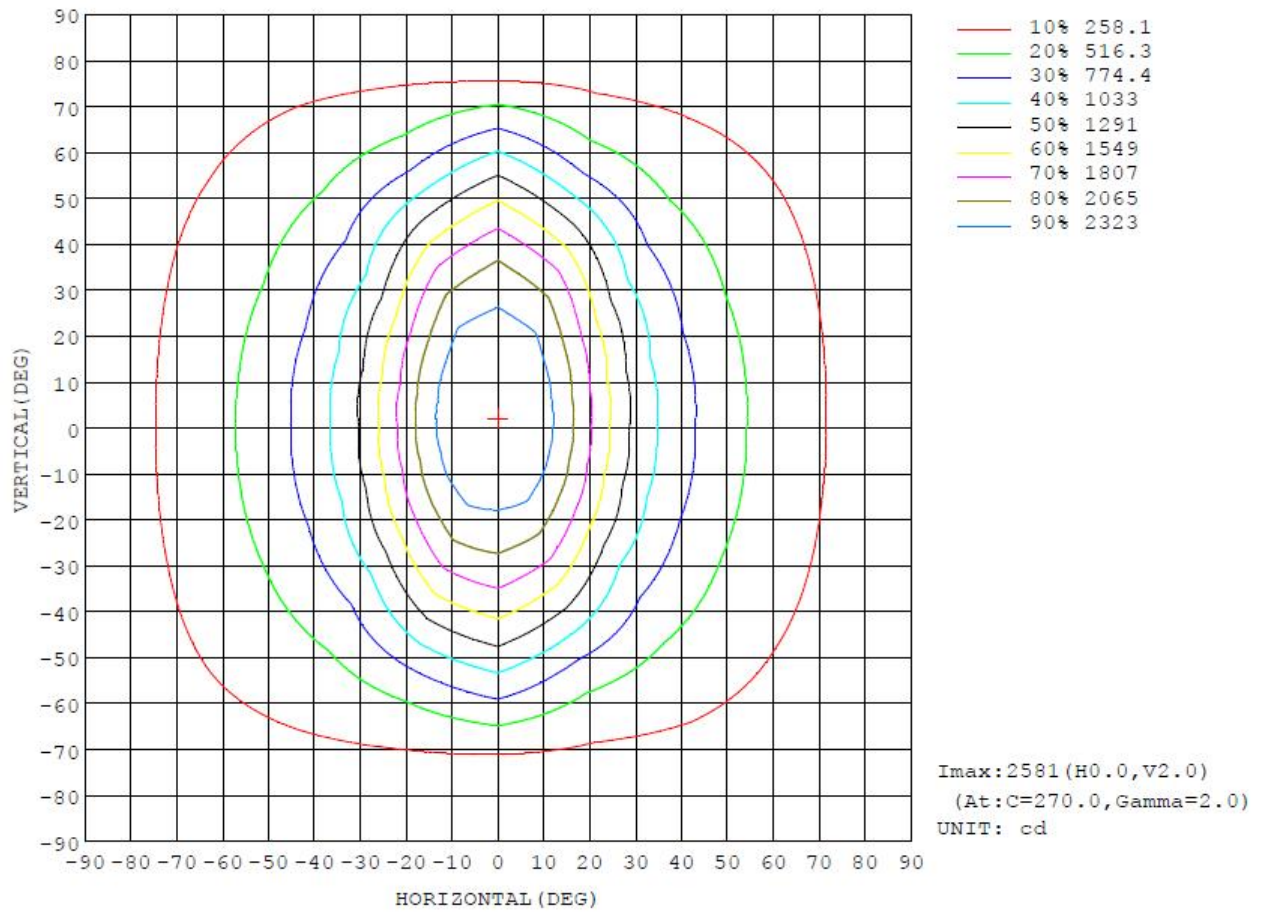
### 6.2 Luminous Intensity Distribution



### 6.3 Zonal Flux Diagram

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum, lamp
10	2411	2457	2477	2483	2467	2537	2542	2498	0- 10	241.8	241.8	4.62, 4.62
20	1822	2041	2272	2125	1925	2200	2431	2139	10- 20	652.8	894.6	17.1, 17.1
30	1214	1495	1983	1601	1305	1676	2245	1615	20- 30	868.0	1763	33.7, 33.7
40	859.2	996.8	1613	1084	917.8	1153	1939	1110	30- 40	891.7	2654	50.7, 50.7
50	601.5	679.1	1185	726.1	657.9	794.6	1523	763.1	40- 50	796.2	3450	65.9, 65.9
60	422.7	440.9	733.1	474.1	471.3	531.8	1044	494.0	50- 60	624.2	4075	77.8, 77.8
70	277.8	273.6	303.3	297.5	319.3	346.4	536.5	309.8	60- 70	428.2	4503	86, 86
80	166.1	141.1	29.29	160.9	196.5	198.2	93.88	167.4	70- 80	241.8	4745	90.6, 90.6
90	125.7	87.02	14.57	76.02	109.0	98.11	6.770	104.6	80- 90	114.8	4859	92.8, 92.8
100	125.4	83.32	13.22	73.47	110.2	92.88	7.502	100.0	90-100	86.49	4946	94.5, 94.5
110	119.8	78.20	11.44	67.42	107.7	85.48	7.799	91.27	100-110	79.57	5026	96, 96
120	108.9	71.53	10.06	59.30	100.5	74.87	8.382	78.09	110-120	68.23	5094	97.3, 97.3
130	92.89	61.63	10.47	51.90	88.52	63.22	10.15	63.48	120-130	54.34	5148	98.3, 98.3
140	74.31	50.47	11.40	45.01	73.35	52.55	11.70	49.11	130-140	39.82	5188	99.1, 99.1
150	55.07	39.22	10.35	37.27	56.60	44.38	11.33	34.43	140-150	26.21	5214	99.6, 99.6
160	36.92	26.25	10.48	28.13	40.46	35.35	15.26	14.32	150-160	14.64	5229	99.9, 99.9
170	21.52	15.69	11.94	17.25	23.91	20.41	12.38	14.38	160-170	6.147	5235	100, 100
180	9.862	12.69	13.67	12.98	9.785	12.46	13.51	13.37	170-180	1.430	5236	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	2574	2574	2574	2574	2574	2574	2574	2574	2574	2574	2574	2574	2574	2574	2574	2574			
5	2550	2543	2543	2539	2541	2542	2547	2555	2569	2575	2577	2575	2568	2567	2561	2555			
10	2411	2417	2457	2475	2477	2483	2483	2464	2467	2495	2537	2548	2542	2531	2498	2439			
15	2146	2176	2282	2382	2386	2393	2339	2256	2232	2285	2403	2499	2499	2476	2352	2205			
20	1822	1873	2041	2232	2272	2272	2125	1971	1925	2005	2200	2410	2431	2381	2139	1912			
25	1500	1561	1773	2051	2138	2112	1873	1663	1602	1691	1948	2273	2348	2241	1886	1603			
30	1214	1269	1495	1838	1983	1918	1601	1367	1305	1396	1676	2100	2245	2073	1615	1311			
35	1019	1049	1229	1608	1806	1704	1334	1117	1082	1140	1408	1896	2108	1871	1353	1078			
40	859	882	997	1368	1613	1473	1084	940	918	963	1153	1663	1939	1633	1110	908			
45	719	737	826	1129	1406	1237	883	791	777	809	956	1419	1744	1382	922	761			
50	602	613	679	894	1185	1002	726	665	658	677	795	1167	1523	1130	763	633			
55	504	506	550	673	961	775	589	556	555	565	653	919	1289	884	619	525			
60	423	423	441	509	733	573	474	464	471	471	532	705	1044	667	494	442			
65	345	341	356	370	510	417	378	387	392	393	429	532	786	495	394	364			
70	278	268	274	258	303	289	297	313	319	318	346	384	537	351	310	293			
75	218	204	203	176	122	192	224	246	254	251	267	267	287	240	233	231			
80	166	149	141	108	29.3	121	161	188	196	193	198	177	93.9	156	167	175			
85	128	105	89.8	54.3	15.7	64.7	107	137	147	143	139	105	15.9	88.9	113	129			
90	126	108	87.0	46.2	14.6	42.6	76.0	102	109	105	98.1	64.0	6.77	69.1	105	127			
95	126	109	85.7	45.1	13.7	41.0	75.2	101	110	105	95.8	60.3	7.16	64.8	103	127			
100	125	110	83.3	43.6	13.2	39.2	73.5	99.9	110	105	92.9	56.7	7.50	59.1	100	124			
105	123	109	80.9	41.7	12.3	37.1	70.8	97.3	110	104	89.4	52.3	7.56	52.2	96.2	121			
110	120	107	78.2	39.6	11.4	34.7	67.4	93.9	108	102	85.5	48.4	7.80	46.1	91.3	116			
115	115	103	75.3	37.3	10.5	32.4	63.5	90.1	105	98.0	80.6	45.0	7.91	41.5	85.2	110			
120	109	98.0	71.5	35.0	10.1	30.2	59.3	86.1	101	93.4	74.9	41.8	8.38	37.7	78.1	103			
125	101	91.8	66.8	33.1	9.91	28.0	55.4	81.7	95.1	87.4	69.0	38.8	9.31	34.4	70.8	95.4			
130	92.9	84.5	61.6	31.3	10.5	26.1	51.9	76.8	88.5	80.8	63.2	36.0	10.1	31.4	63.5	86.4			
135	83.7	76.8	56.2	29.3	11.0	24.5	48.6	70.9	81.3	74.0	57.7	33.5	11.0	28.8	56.3	77.2			
140	74.3	68.8	50.5	27.1	11.4	23.0	45.0	64.3	73.3	67.2	52.6	31.5	11.7	26.0	49.1	67.8			
145	64.6	60.4	44.7	24.8	11.2	21.8	41.3	57.8	65.0	60.5	48.3	30.1	11.7	22.7	41.7	58.1			
150	55.1	51.7	39.2	22.4	10.3	20.4	37.3	50.9	56.6	54.1	44.4	29.3	11.3	16.4	34.4	48.3			
155	45.7	43.3	33.7	18.3	10.4	19.0	33.0	43.7	48.4	47.1	40.2	28.3	14.3	11.5	25.6	38.9			
160	36.9	35.0	26.3	15.2	10.5	17.0	28.1	36.5	40.5	40.2	35.4	26.0	15.3	10.3	14.3	27.9			
165	28.7	27.2	20.0	14.3	10.6	14.7	22.5	29.0	32.0	32.1	28.9	21.2	14.4	9.26	14.1	15.7			
170	21.5	18.9	15.7	13.6	11.9	12.0	17.2	20.9	23.9	24.0	20.4	18.2	12.4	12.2	14.4	15.6			
175	16.3	13.3	14.3	13.7	13.0	12.2	13.0	14.3	16.0	16.1	14.9	12.8	12.0	12.8	13.9	14.7			
180	9.86	12.5	12.7	13.6	13.7	13.5	13.0	12.2	9.79	9.69	12.5	13.2	13.5	13.6	13.4	12.9			

## 7. THD and PF Test

Mode	Voltage (V AC)	Frequency (Hz)	Power Factor	THD (%)
40W-3500K	100.0	60	0.9696	11.07
	120.0	60	0.9646	12.01
	277.0	60	0.9195	12.47
40W-4000K	277.0	60	0.9126	12.45
40W-5000K	277.0	60	0.9145	12.52



## 8. Photo of sample

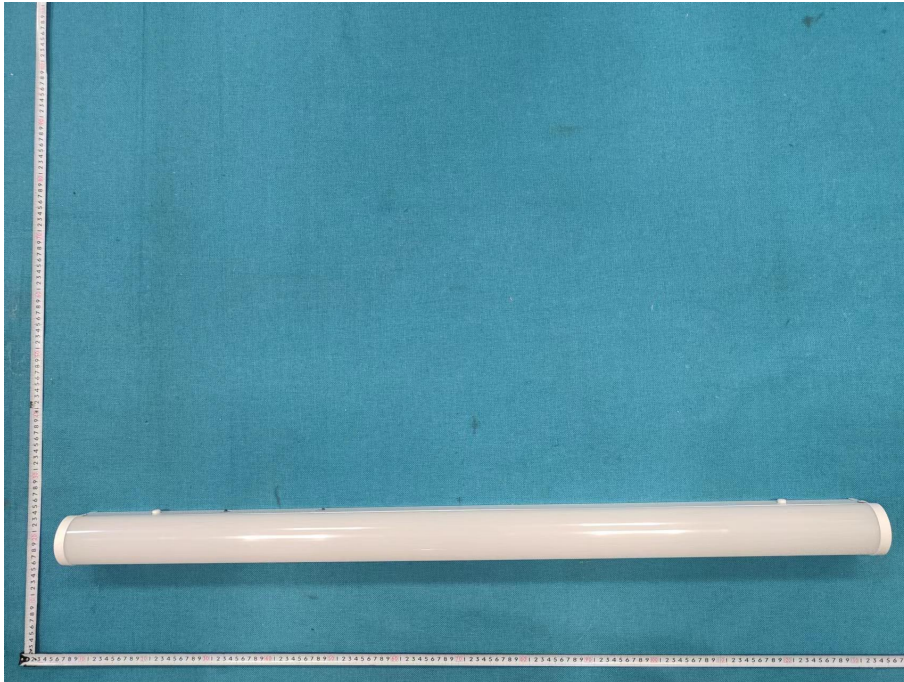


Figure 1

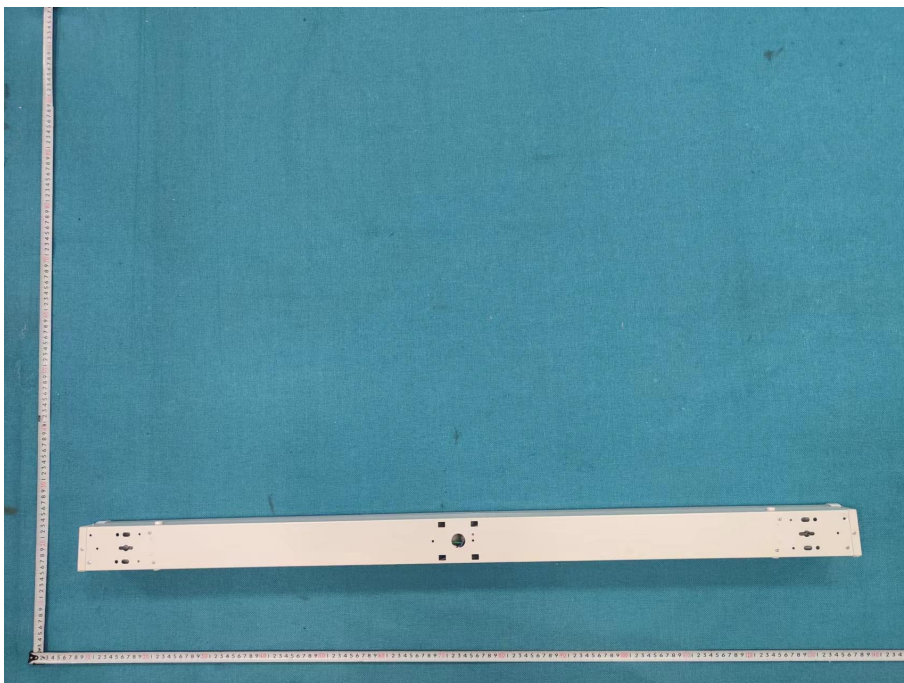


Figure 2

---End of Report---