



Guangdong Meide Testing Technology Co., Ltd.



NVLAP LAB CODE:600177-0

# TEST REPORT OF IES LM-79-08

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

Client..... : ROYALUX EXPORTS

Address..... : SDF BLOCK M-13, M-14, M-15 & M-16,NOIDA SPECIAL ECONOMIC ZONE,NOIDA  
DADRI ROAD, PHASE-II,NOIDA, DSTT. GAUTAM BUDH NAGAR, UP-201305

Test Model..... : 202Y0200W30L70DY,202Y0200W57L70DY

Product Description .... : High Bay Luminaires for Commercial and Industrial Buildings

Brand Name..... : 

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

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

Report No..... : CA1905127L 01008

Test Date..... : 2019-06-10 to 2019-06-14

Report Date..... : 2019-06-17

Compiled by:

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Approved by:

Jessie Li/ Technical Manager



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### 1.Product Information

Model Number.....: 202Y0200W30L70DY,202Y0200W57L70DY  
 Manufacturer.....: ROYALUX EXPORTS  
 Product Type.....: High Bay Luminaires for Commercial and Industrial Buildings  
 Rated Voltage/Frequency.....: 100-277V AC 50/60Hz  
 Rated Power.....: 200W  
 Declared CCT.....: 3000K,5700K  
 LED Manufacturer.....: CREE Venture LED Company Limited  
 LED Model No.....: JK3030AWT-00-0000-000B0HH422E

### 2.Standards Used

- IES LM-79-08:Approved Method:Electrical and Photometric Measurements of Solid-State Lighting Products
- ANSI C82.77-2002: Harmonic Emission Limits – Related Power Quality Requirements for Lighting Equipment

### 3.Test equipment list

Test Equipment	Serial No	Model No	Range Used	Calibration date	Calibration due date
Full-field Speed Goniophotometer	MD-E028	GO-R5000	1600mm,3000W/10A	2018/10/19	2019/10/18
Digital Power Meter	MD-E001	PF2010	0-600V,0-20A,0-4KW	2018/10/08	2019/10/07
AC Testing Power Source	MD-E002	DPS1060	0-300Vac,0-20A,0-5 KW	2018/10/08	2019/10/07
Total Spectral Radiant Flux Standard Lamp	MD-E007	D908S	7.295A,2856K,11227 lm,94.35V	2018/10/19	2019/10/18
Integrating Sphere System	MD-E029	2M	--	2018/10/10	2019/10/09
High Accuracy Array Spectroradio Meter	MD-E011	HAAS-3000	380-780nm	2018/10/10	2019/10/09
Digital Power Meter	MD-E008	PF310	0-600Vac,0-20A	2018/10/08	2019/10/07
AC Testing Power Source	MD-E010	DPS1010	0-300Vac,0-10A,0-10 00W	2018/10/08	2019/10/07
Standard Lamp	MD-E012	D204	3.9424A,20.75V,285 6K,1332.3lm	2019/02/21	2020/02/20

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).



Guangdong Meide Testing Technology Co., Ltd.



## 4. Test Method

### Requirements of Ambient Condition

Product was tested with no seasoning. All stabilization and measurements were made in compliance with IES LM-79-08. The product was operated at rated voltage or at voltage required by manufacturer. The ambient temperature of the sample was maintained at  $25^{\circ}\text{C}\pm 1^{\circ}\text{C}$  during measurement.

### Goniophotometer System

The sample was tested according to the IES LM-79-2008.

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.

### Integrating Sphere System

The sample was tested according to the IES LM-79-2008.

The sample measurements were made using a spectroradiometer connected by a fiber optic cable and detector through the detector port of the integrating sphere. 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.

### THD and PF Test

The sample was tested according to the ANSI C82.77-2002.

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</b>	25.1℃	<b>Test orientation</b>	Downward
<b>Operate time(Min.)</b>	90	<b>stabilization time(Min.)</b>	60

### Photometric and Electrical Measurement Result

Model Number	Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
202Y0200W30L70DY	120.0	60	1.651	196.8	0.9932
202Y0200W57L70DY	120.0	60	1.655	197.2	0.9933

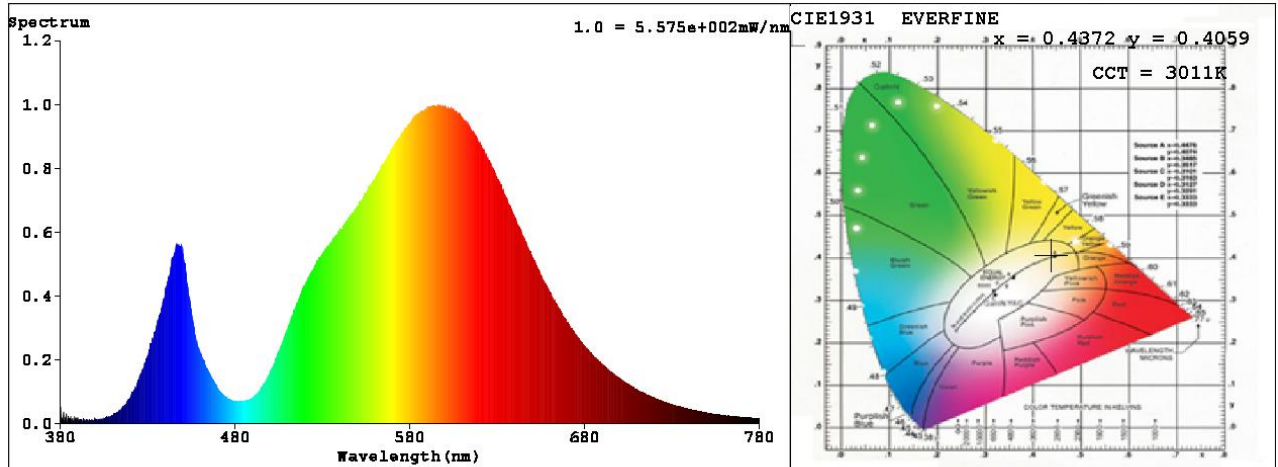
Model Number	Luminous Flux(lm)	Efficacy (lm/W)	CCT (K)	Ra	R9
202Y0200W30L70DY	27880	141.67	3011	72.2	0
202Y0200W57L70DY	28876	146.43	5474	73.8	0

Model Number	duv	x	y	u'	v'
202Y0200W30L70DY	0.000831	0.4372	0.4059	0.2499	0.5221
202Y0200W57L70DY	0.00303	0.3330	0.3473	0.2049	0.4808



5.2 Spectrum

202Y0200W30L70DY



Colorimetric Parameters

Chromaticity Coordinate:  $x = 0.4372$   $y = 0.4059$  /  $u' = 0.2499$   $v' = 0.5221$  ( $duv=8.31e-04$ )

CCT= 3011K Prcp WL:  $L_d=582.5nm$  Purity=53.0%

Peak WL:  $L_p=597nm$  FWHM: =126.0nm Ratio:R=21.4% G=77.2% B=1.4%

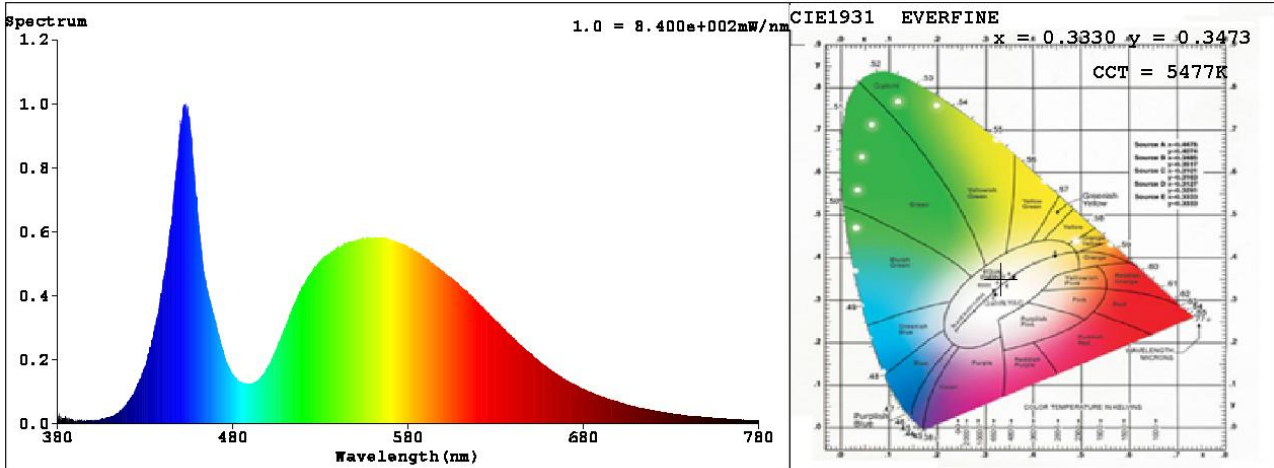
Render Index:  $R_a = 72.2$  TM30:Rf=70 Rg=96

R1 =69 R2 =80 R3 =89 R4 =70 R5 =68 R6 =72 R7 =80

R8 =49 R9 =0 R10=53 R11=65 R12=45 R13=71 R14=93 R15=63



202Y0200W57L70DY



### Colorimetric Parameters

Chromaticity Coordinate:  $x = 0.3330$   $y = 0.3473$  /  $u' = 0.2049$   $v' = 0.4808$  ( $duv=3.03e-03$ )

CCT= 5477K Prcp WL: Ld=553.4nm Purity=4.2%

Peak WL: Lp=453nm FWHM: =21.1nm Ratio:R=13.7% G=82.6% B=3.7%

Render Index: Ra = 73.8 TM30:Rf=72 Rg=93

R1 =71 R2 =79 R3 =82 R4 =73 R5 =71 R6 =69 R7 =84

R8 =61 R9 =0 R10=47 R11=68 R12=41 R13=72 R14=89 R15=68





## 6. Goniophotometer Test results

### 6.1 Test Data

Test Ambient Temperature	25.1℃	Test orientation	Downward
Operate time(Min.)	120	stabilization time(Min.)	90

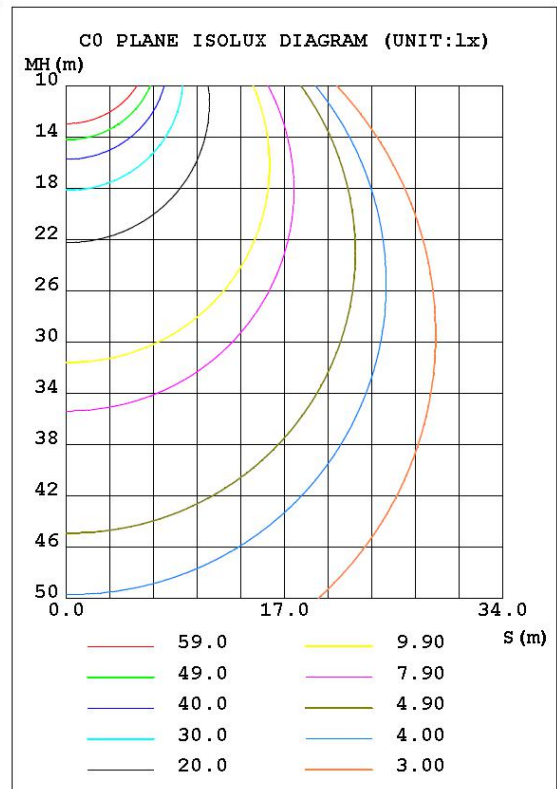
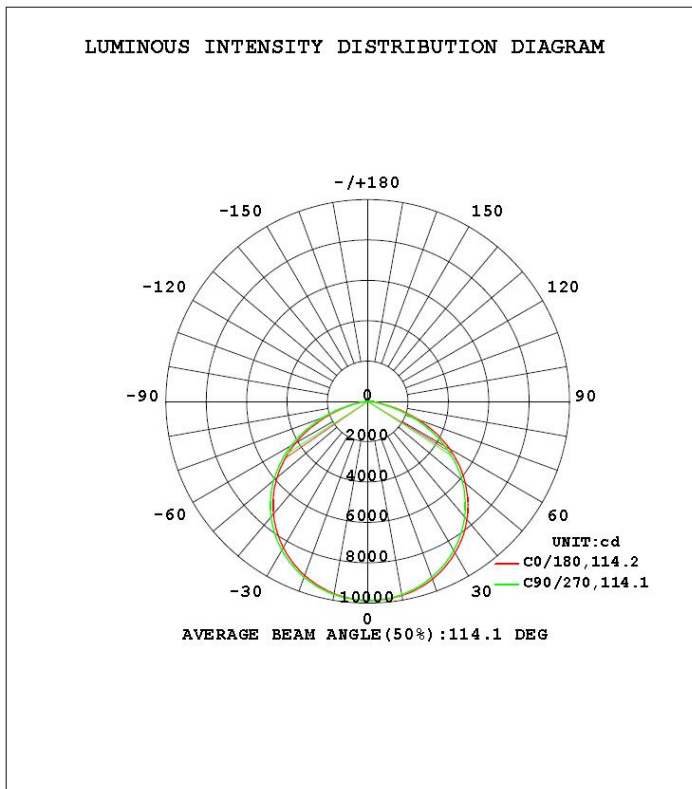
### Electrical Measurement

Model Number	Input Voltage (V)	Frequency (Hz)	Input Current(A)	Power Factor	Power(W)
202Y0200W30L70DY	120.0	60	1.65	0.9926	196.5

### Photometric Measurement

Model Number	Luminous Flux (lm)	Efficacy (lm/W)	ZL (20-50° )	Spacing Criteria (C0/180°)	Spacing Criteria (C90/270°)
202Y0200W30L70DY	27890.5	141.94	51.6%	1.26	1.28

### 6.2 Luminous Intensity Distribution Diagram and C0 Plane Isolux Diagram (Unit : lx)





### 6.3 Zonal Flux Diagram

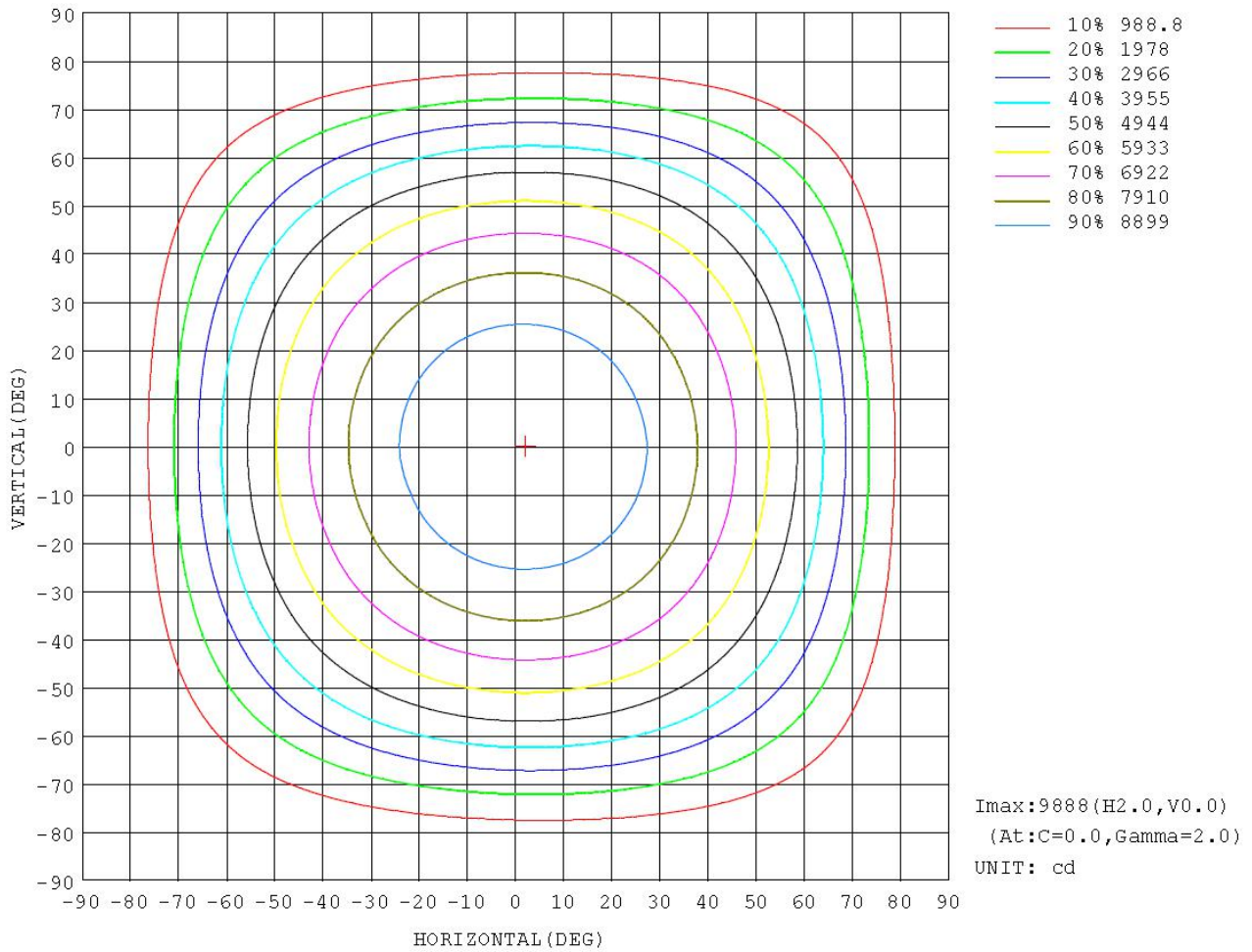
ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	#lum, lamp
10	9764	9750	9716	9682	9669	9682	9716	9749	0- 10	934.4	934.4	3.35, 3.35
20	9370	9339	9270	9201	9172	9199	9268	9335	10- 20	2691	3626	13, 13
30	8660	8618	8517	8416	8373	8415	8515	8616	20- 30	4117	7742	27.8, 27.8
40	7644	7592	7465	7329	7280	7332	7462	7589	30- 40	5021	12763	45.8, 45.8
50	6307	6239	6099	5935	5880	5942	6089	6246	40- 50	5254	18017	64.6, 64.6
60	4673	4578	4403	4212	4158	4228	4394	4591	50- 60	4713	22730	81.5, 81.5
70	2665	2572	2394	2208	2152	2222	2409	2607	60- 70	3385	26115	93.6, 93.6
80	781.7	720.0	599.1	485.7	452.8	496.8	614.7	754.2	70- 80	1536	27652	99.1, 99.1
90	11.80	7.240	5.960	1.270	2.208	2.129	2.023	6.184	80- 90	210.5	27862	99.9, 99.9
100	1.579	1.615	1.689	1.786	3.509	3.414	3.224	3.068	90-100	2.447	27865	99.9, 99.9
110	2.306	2.355	2.457	2.565	4.038	3.911	3.631	3.586	100-110	3.000	27868	99.9, 99.9
120	3.274	3.280	3.819	3.669	3.844	3.778	3.827	3.521	110-120	3.312	27871	99.9, 99.9
130	4.441	4.686	5.350	5.029	4.881	4.724	4.939	4.590	120-130	3.743	27875	99.9, 99.9
140	5.613	5.936	6.261	6.076	7.140	7.020	6.971	7.150	130-140	4.427	27879	100, 100
150	5.829	6.038	6.142	6.179	8.979	9.033	8.844	9.041	140-150	4.465	27884	100, 100
160	6.314	7.127	7.083	7.065	9.569	9.894	10.10	10.21	150-160	3.725	27887	100, 100
170	7.232	7.617	7.817	7.977	9.273	9.057	9.582	9.910	160-170	2.402	27890	100, 100
180	8.340	8.304	8.745	8.979	8.434	8.084	8.511	8.911	170-180	0.8185	27890	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	9862	9862	9862	9862	9862	9862	9862	9862	9862	9862	9862	9862	9862	9862	9862	9862			
5	9850	9847	9842	9834	9824	9815	9808	9803	9802	9802	9808	9816	9824	9834	9840	9847			
10	9764	9760	9750	9734	9716	9697	9682	9673	9669	9673	9682	9699	9716	9735	9749	9761			
15	9605	9600	9583	9560	9532	9504	9480	9466	9459	9464	9478	9502	9529	9557	9581	9597			
20	9370	9361	9339	9307	9270	9233	9201	9179	9172	9179	9199	9230	9268	9303	9335	9357			
25	9054	9045	9016	8979	8932	8885	8846	8817	8810	8821	8843	8884	8929	8974	9014	9040			
30	8660	8650	8618	8574	8517	8462	8416	8380	8373	8386	8415	8461	8515	8568	8616	8646			
35	8192	8179	8146	8093	8030	7964	7909	7873	7862	7877	7911	7966	8027	8088	8141	8177			
40	7644	7632	7592	7534	7465	7389	7329	7287	7280	7293	7332	7394	7462	7535	7589	7629			
45	7013	6998	6958	6895	6823	6740	6671	6626	6620	6636	6677	6745	6819	6896	6960	6999			
50	6307	6281	6239	6174	6099	6014	5935	5884	5880	5898	5942	6010	6089	6174	6246	6294			
55	5530	5492	5444	5369	5290	5194	5107	5051	5048	5069	5118	5184	5275	5376	5455	5508			
60	4673	4636	4578	4501	4403	4304	4212	4156	4158	4178	4228	4301	4394	4506	4591	4646			
65	3730	3699	3634	3542	3436	3338	3232	3156	3159	3179	3249	3333	3438	3565	3655	3716			
70	2665	2640	2572	2491	2394	2287	2208	2143	2152	2173	2222	2311	2409	2514	2607	2665			
75	1676	1644	1590	1513	1417	1326	1245	1195	1198	1217	1261	1338	1433	1543	1631	1685			
80	782	760	720	664	599	538	486	446	453	466	497	548	615	687	754	797			
85	194	186	167	144	116	106	86.3	75.9	61.8	64.6	76.6	95.5	122	154	183	205			
90	11.8	11.5	7.24	8.45	5.96	1.21	1.27	1.15	2.21	2.18	2.13	2.06	2.02	3.11	6.18	7.95			
95	1.26	1.26	1.29	1.31	1.35	1.40	1.45	1.48	2.91	2.88	2.82	2.73	2.64	2.55	2.48	2.44			
100	1.58	1.59	1.62	1.64	1.69	1.74	1.79	1.84	3.51	3.48	3.41	3.34	3.22	3.13	3.07	3.03			
105	1.90	1.93	1.96	1.98	2.04	2.11	2.14	2.24	3.95	3.93	3.84	3.75	3.64	3.51	3.49	3.48			
110	2.31	2.34	2.36	2.37	2.46	2.52	2.56	2.71	4.04	4.02	3.91	3.73	3.63	3.56	3.59	3.61			
115	2.78	2.81	2.79	2.84	3.06	3.04	3.04	3.23	3.94	3.95	3.82	3.67	3.63	3.53	3.51	3.57			
120	3.27	3.31	3.28	3.47	3.82	3.73	3.67	3.68	3.84	3.89	3.78	3.80	3.83	3.65	3.52	3.51			
125	3.84	3.89	4.02	4.32	4.63	4.52	4.39	4.41	4.08	4.15	4.07	4.18	4.22	4.08	3.89	3.83			
130	4.44	4.59	4.69	5.13	5.35	5.31	5.03	5.32	4.88	4.94	4.72	4.92	4.94	4.81	4.59	4.58			
135	5.25	5.25	5.42	5.79	6.03	5.98	5.60	5.83	6.08	5.90	5.83	5.93	5.93	5.87	5.80	5.74			
140	5.61	5.74	5.94	6.03	6.26	6.21	6.08	6.01	7.14	6.95	7.02	6.95	6.97	6.97	7.15	7.05			
145	6.14	6.27	6.11	6.12	6.34	6.36	6.18	6.34	8.37	8.11	8.17	7.95	7.92	8.08	8.22	8.31			
150	5.83	6.02	6.04	6.09	6.14	6.49	6.18	6.14	8.98	9.09	9.03	9.09	8.84	8.98	9.04	9.07			
155	6.04	6.37	6.49	6.58	6.60	6.91	6.53	6.39	9.60	9.69	9.69	10.2	9.63	9.38	9.85	9.74			
160	6.31	6.87	7.13	6.98	7.08	7.22	7.06	6.78	9.57	9.71	9.89	10.2	10.1	10.0	10.2	10.0			
165	6.69	7.25	7.42	7.19	7.25	7.60	7.51	7.06	9.43	9.35	9.38	9.76	9.80	9.74	9.76	9.99			
170	7.23	7.38	7.62	7.63	7.82	8.04	7.98	7.36	9.27	9.24	9.06	9.21	9.58	9.75	9.91	9.90			
175	7.67	7.93	8.18	8.43	8.65	8.75	8.68	8.15	8.68	8.67	8.82	9.20	9.39	9.59	9.67	9.57			
180	8.34	8.08	8.30	8.51	8.74	8.92	8.98	8.56	8.43	8.40	8.08	8.36	8.51	8.77	8.91	8.94			

7. THD and PF Test

Test type	Voltage (V AC)	Frequency (Hz)	Current(A)	Power Factor	Power(W)	Current THD
Results	277.0	60	0.7504	0.9078	188.7	11.98%





8. Photo of sample

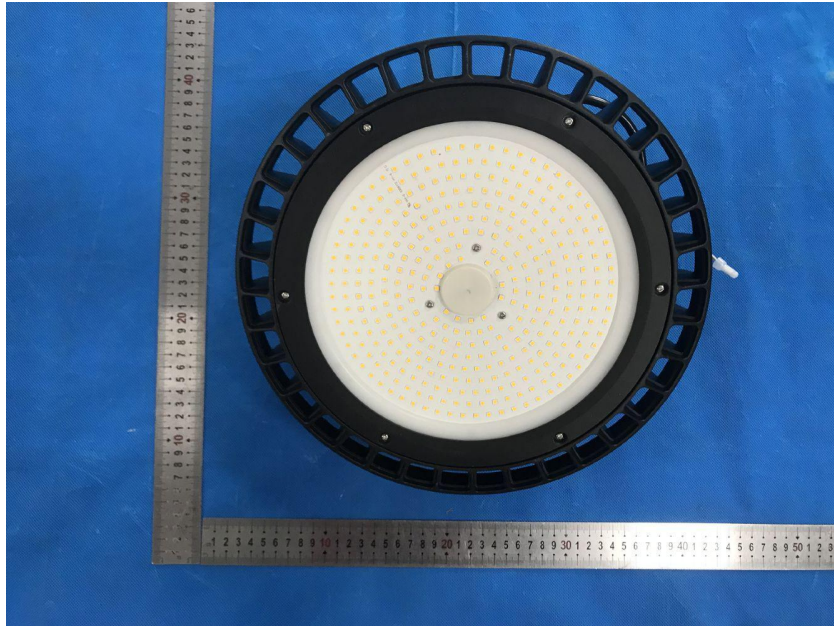


Figure 1



Figure 2

\*\*\*\*\* END OF THE TEST REPORT\*\*\*\*\*