



Guangdong Meide Testing Technology Co., Ltd.



## 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..... : 201Y0100W30L70DY,201Y0100W57L70DY

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 01006

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

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

Compiled by:

Luke Lei/ Project Engineer

Approved by:

Jessie Li/ Technical Manager



Note 1: 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 Information

Model Number.....: 201Y0100W30L70DY,201Y0100W57L70DY

Manufacturer.....: ROYALUX EXPORTS

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

Rated Voltage/Frequency.....: 100-277V AC 50/60Hz

Rated Power.....: 100W

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

Test Ambient Temperature	25.1℃	Test orientation	Downward
Operate time(Min.)	90	stabilization time(Min.)	60

#### Photometric and Electrical Measurement Result

Model Number	Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor
201Y0100W30L70DY	120.0	60	0.8198	97.97	0.9959
201Y0100W57L70DY	120.0	60	0.8201	97.89	0.9946

Model Number	Luminous Flux(lm)	Efficacy (lm/W)	CCT (K)	Ra	R9
201Y0100W30L70DY	13725	140.1	3006	72.3	0
201Y0100W57L70DY	14184	144.89	5504	73.4	0

Model Number	duv	x	y	u'	v'
201Y0100W30L70DY	0.000809	0.4377	0.4064	0.2501	0.5224
201Y0100W57L70DY	0.00317	0.3324	0.3469	0.2046	0.4805

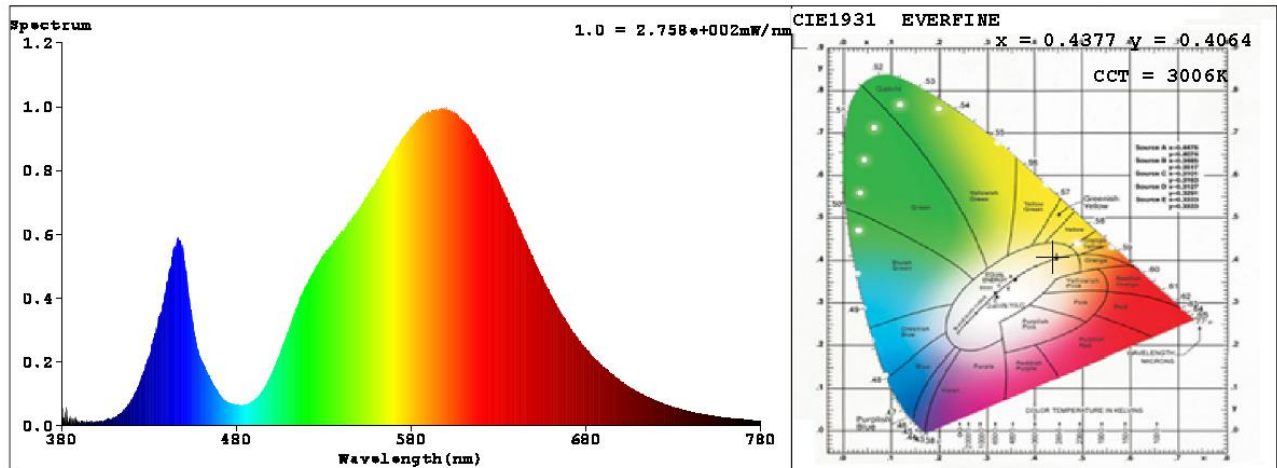


Guangdong Meide Testing Technology Co., Ltd.



## 5.2 Spectrum

201Y0100W30L70DY



### Colorimetric Parameters

Chromaticity Coordinate:  $x = 0.4377$   $y = 0.4064$  /  $u' = 0.2501$   $v' = 0.5224$  ( $duv=8.09e-04$ )

CCT= 3006K Prcp WL: Ld=582.5nm Purity=53.4%

Peak WL: Lp=600nm FWHM: =126.4nm Ratio:R=21.4% G=77.3% B=1.3%

Render Index: Ra = 72.3 TM30:Rf=70 Rg=96

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

R8 =50 R9 =0 R10=53 R11=65 R12=45 R13=71 R14=93 R15=63

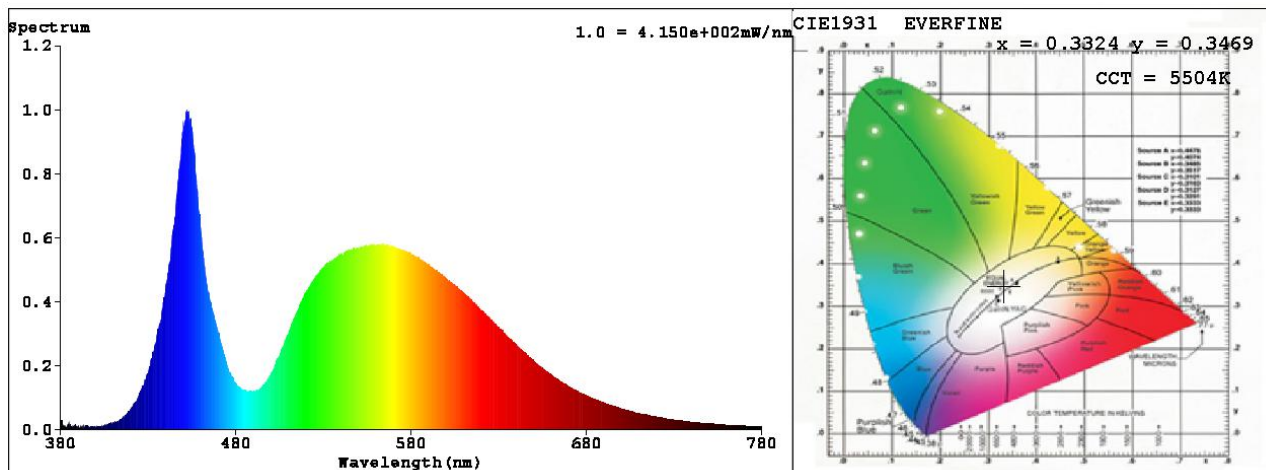


Guangdong Meide Testing Technology Co., Ltd.



NVLAP LAB CODE:600177-0

201Y0100W57L70DY



### Colorimetric Parameters

Chromaticity Coordinate:  $x = 0.3324$   $y = 0.3469$  /  $u' = 0.2046$   $v' = 0.4805$  ( $duv=3.17e-03$ )

CCT= 5504K Prop WL:  $L_d=551.1nm$  Purity=3.9%

Peak WL:  $L_p=452nm$  FWHM:  $=20.8nm$  Ratio:R=13.7% G=82.7% B=3.6%

Render Index:  $R_a = 73.4$  TM30:  $R_f=72$   $R_g=93$

R1 =71 R2 =78 R3 =81 R4 =73 R5 =71 R6 =69 R7 =83

R8 =61 R9 =0 R10=46 R11=68 R12=41 R13=72 R14=89 R15=67





Guangdong Meide Testing Technology Co., Ltd.



## 6. Goniophotometer Test results

### 6.1 Test Data

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

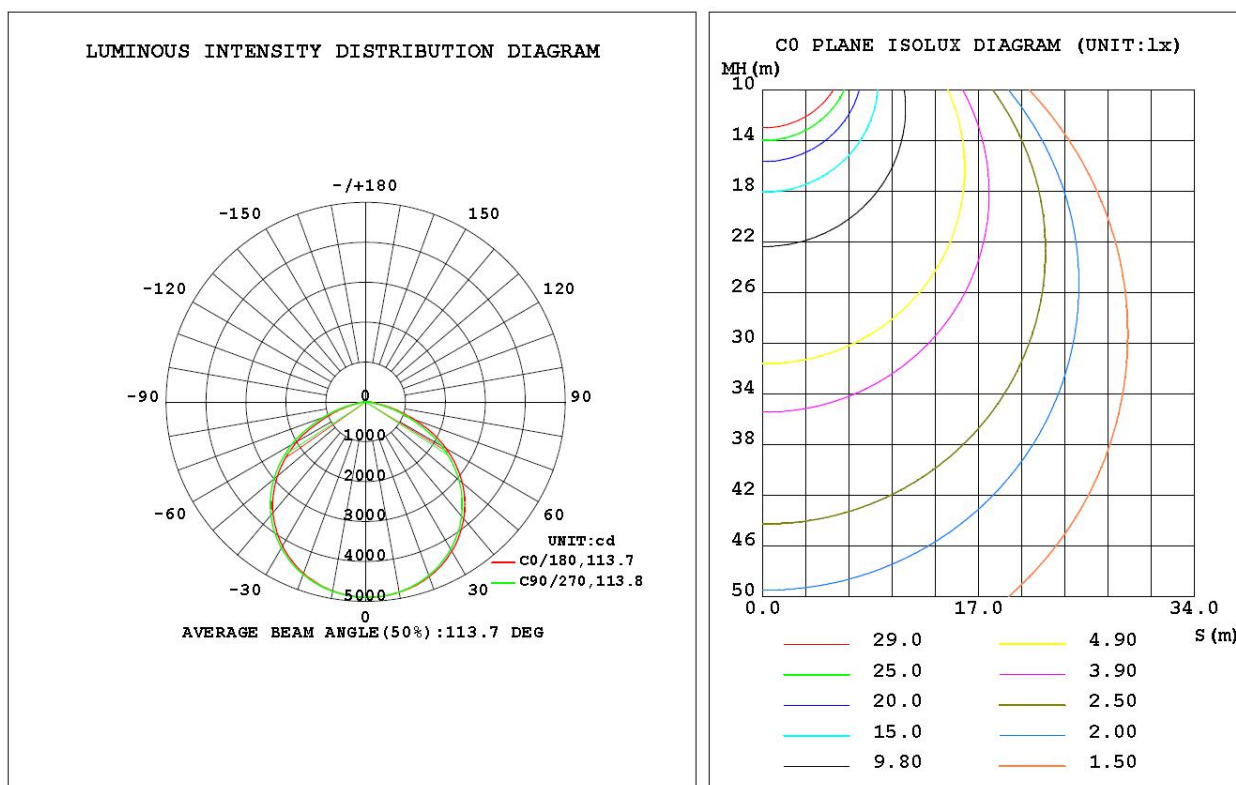
### Electrical Measurement

Model Number	Input Voltage (V)	Frequency (Hz)	Input Current(A)	Power Factor	Power(W)
201Y0100W30L70DY	120.0	60	0.8197	0.9956	97.93

### Photometric Measurement

Model Number	Luminous Flux (lm)	Efficacy (lm/W)	ZL (20-50° )	Spacing Criteria (C0/180°)	Spacing Criteria (C90/270°)
201Y0100W30L70DY	13743.5	140.34	52.2%	1.27	1.28

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





Guangdong Meide Testing Technology Co., Ltd.



### 6.3 Zonal Flux Diagram

ZONAL FLUX DIAGRAM:

$\gamma$	C0	C45	C90	C135	C180	C225	C270	C315	$\gamma$	$\Phi$ zone	$\Phi$ total	$\Phi$ lum, lamp
10	4845	4846	4834	4817	4806	4806	4818	4835	0- 10	464.0	464.0	3.38, 3.38
20	4655	4651	4623	4588	4568	4571	4599	4633	10- 20	1338	1802	13.1, 13.1
30	4317	4304	4261	4207	4175	4185	4229	4282	20- 30	2050	3852	28, 28
40	3818	3799	3738	3662	3621	3639	3703	3776	30- 40	2503	6355	46.2, 46.2
50	3158	3136	3050	2943	2889	2913	3008	3107	40- 50	2615	8971	65.3, 65.3
60	2320	2283	2179	2056	2002	2045	2152	2264	50- 60	2330	11301	82.2, 82.2
70	1294	1251	1141	1011	967.3	1007	1130	1252	60- 70	1635	12936	94.1, 94.1
80	380.2	340.6	265.1	183.6	160.3	185.6	269.3	346.9	70- 80	708.9	13645	99.3, 99.3
90	5.588	2.137	0.5283	0.5412	1.079	1.030	0.9882	2.608	80- 90	85.07	13730	99.9, 99.9
100	0.7318	0.7549	0.8052	0.8689	1.734	1.678	1.555	1.444	90-100	1.105	13731	99.9, 99.9
110	1.082	1.111	1.175	1.252	2.012	1.940	1.772	1.721	100-110	1.451	13732	99.9, 99.9
120	1.567	1.571	1.838	1.804	1.930	1.881	1.870	1.706	110-120	1.611	13734	99.9, 99.9
130	2.149	2.266	2.607	2.484	2.449	2.357	2.439	2.252	120-130	1.833	13736	99.9, 99.9
140	2.748	2.910	3.084	3.016	3.580	3.499	3.463	3.547	130-140	2.186	13738	100, 100
150	2.903	2.987	3.041	3.076	4.491	4.504	4.403	4.498	140-150	2.218	13740	100, 100
160	3.136	3.532	3.521	3.510	4.780	4.945	5.026	5.083	150-160	1.855	13742	100, 100
170	3.583	3.775	3.890	3.973	4.629	4.528	4.764	4.922	160-170	1.195	13743	100, 100
180	4.154	4.135	4.359	4.471	4.198	4.030	4.235	4.441	170-180	0.4069	13744	100, 100
DEG	LUMINOUS INTENSITY: cd									UNIT: lm		

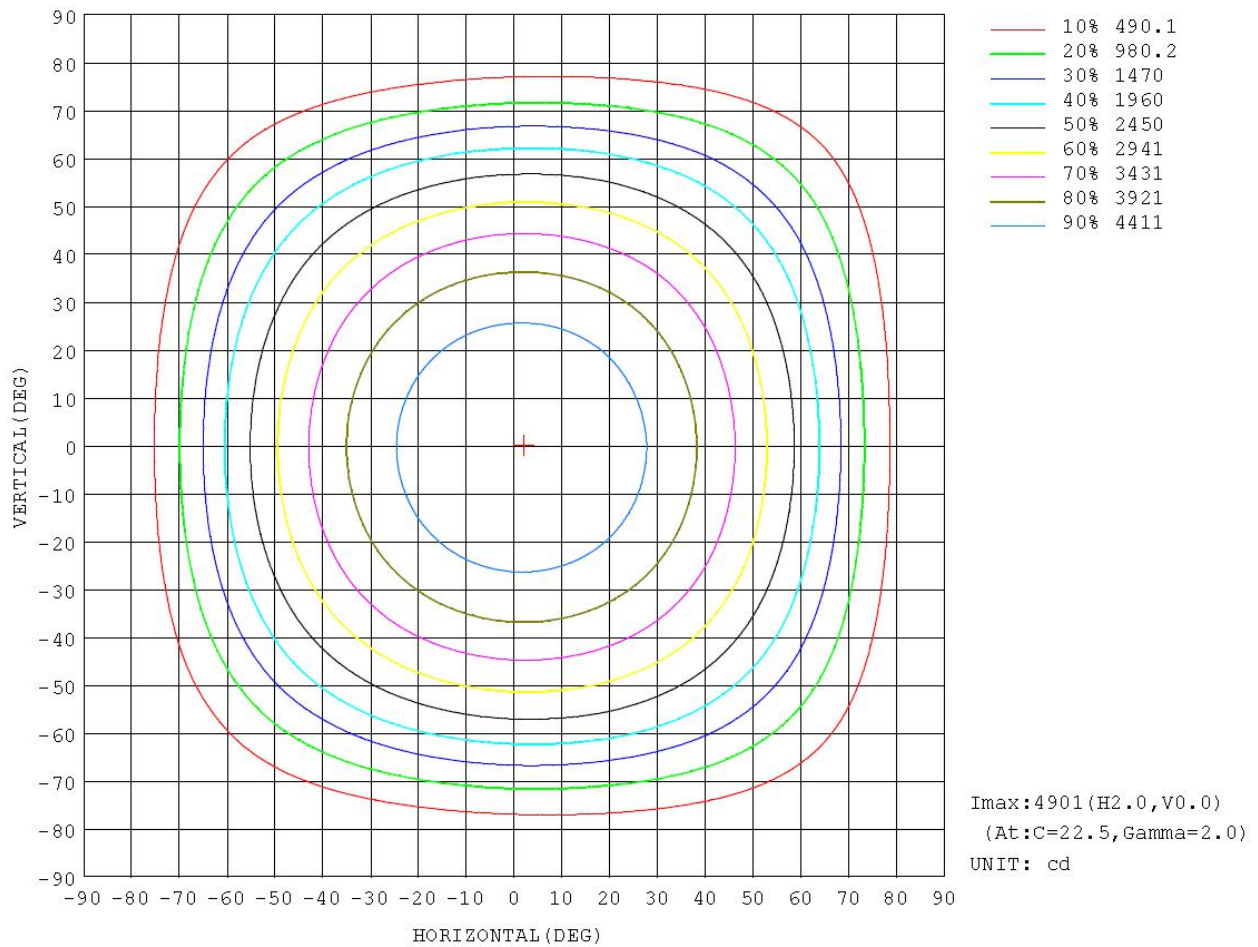




Guangdong Meide Testing Technology Co., Ltd.



#### 6.4 Isocandela Diagram





Guangdong Meide Testing Technology Co., Ltd.



## 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	4896	4896	4896	4896	4896	4896	4896	4896	4896	4896	4896	4896	4896	4896	4896	4896			
5	4888	4889	4888	4886	4882	4879	4874	4871	4868	4868	4868	4871	4874	4879	4882	4886			
10	4845	4848	4846	4841	4834	4825	4817	4811	4806	4804	4806	4810	4818	4827	4835	4841			
15	4768	4771	4768	4759	4748	4734	4722	4714	4706	4704	4706	4715	4727	4740	4752	4761			
20	4655	4657	4651	4639	4623	4606	4588	4577	4568	4565	4571	4583	4599	4617	4633	4647			
25	4506	4506	4498	4481	4462	4439	4417	4403	4391	4390	4397	4413	4433	4455	4477	4496			
30	4317	4316	4304	4284	4261	4234	4207	4188	4175	4175	4185	4204	4229	4257	4282	4303			
35	4087	4085	4070	4048	4020	3986	3954	3933	3919	3920	3932	3957	3985	4020	4049	4072			
40	3818	3817	3799	3773	3738	3697	3662	3637	3621	3621	3639	3668	3703	3740	3776	3801			
45	3509	3507	3489	3456	3414	3365	3326	3298	3280	3282	3302	3334	3379	3419	3463	3491			
50	3158	3157	3136	3100	3050	2993	2943	2906	2889	2889	2913	2953	3008	3055	3107	3141			
55	2759	2761	2736	2693	2637	2571	2514	2474	2462	2464	2491	2538	2593	2650	2699	2745			
60	2320	2309	2283	2248	2179	2113	2056	2021	2002	2014	2045	2098	2152	2219	2264	2310			
65	1841	1839	1794	1736	1659	1587	1519	1487	1465	1480	1514	1583	1659	1731	1800	1834			
70	1294	1287	1251	1183	1141	1071	1011	968	967	975	1007	1062	1130	1189	1252	1288			
75	810	802	770	724	671	605	551	507	507	515	551	607	666	725	775	810			
80	380	370	341	303	265	216	184	160	160	165	186	218	269	313	347	381			
85	99.2	93.7	75.9	64.2	37.1	23.6	14.9	10.7	11.5	12.3	24.3	33.4	47.3	57.3	73.5	89.2			
90	5.59	5.08	2.14	1.11	0.53	0.52	0.54	0.56	1.08	1.06	1.03	0.98	0.99	1.62	2.61	3.18			
95	0.57	0.58	0.59	0.61	0.64	0.67	0.70	0.72	1.43	1.41	1.37	1.32	1.26	1.20	1.15	1.12			
100	0.73	0.74	0.75	0.78	0.81	0.84	0.87	0.90	1.73	1.72	1.68	1.63	1.55	1.49	1.44	1.42			
105	0.89	0.90	0.92	0.94	0.98	1.02	1.04	1.10	1.96	1.95	1.90	1.84	1.77	1.69	1.66	1.65			
110	1.08	1.09	1.11	1.13	1.18	1.22	1.25	1.33	2.01	2.00	1.94	1.83	1.77	1.71	1.72	1.72			
115	1.32	1.33	1.33	1.35	1.47	1.48	1.49	1.59	1.97	1.97	1.90	1.81	1.77	1.71	1.69	1.71			
120	1.57	1.58	1.57	1.66	1.84	1.82	1.80	1.82	1.93	1.95	1.88	1.87	1.87	1.77	1.71	1.69			
125	1.84	1.87	1.93	2.08	2.24	2.21	2.17	2.18	2.05	2.08	2.03	2.07	2.07	1.99	1.89	1.86			
130	2.15	2.22	2.27	2.48	2.61	2.61	2.48	2.64	2.45	2.47	2.36	2.44	2.44	2.36	2.25	2.25			
135	2.56	2.55	2.64	2.83	2.95	2.95	2.77	2.91	3.05	2.96	2.90	2.95	2.94	2.90	2.86	2.84			
140	2.75	2.81	2.91	2.97	3.08	3.08	3.02	3.00	3.58	3.47	3.50	3.46	3.46	3.46	3.55	3.50			
145	3.03	3.09	3.02	3.02	3.14	3.15	3.08	3.16	4.18	4.04	4.08	3.95	3.94	4.00	4.09	4.13			
150	2.90	2.99	2.99	3.01	3.04	3.22	3.08	3.07	4.49	4.54	4.50	4.53	4.40	4.47	4.50	4.52			
155	3.01	3.17	3.22	3.26	3.27	3.44	3.25	3.20	4.80	4.84	4.84	5.05	4.80	4.67	4.90	4.85			
160	3.14	3.42	3.53	3.46	3.52	3.59	3.51	3.39	4.78	4.85	4.94	5.10	5.03	4.99	5.08	4.99			
165	3.33	3.60	3.68	3.56	3.60	3.78	3.73	3.51	4.71	4.66	4.69	4.85	4.88	4.85	4.86	4.95			
170	3.58	3.66	3.77	3.79	3.89	4.01	3.97	3.67	4.63	4.62	4.53	4.58	4.76	4.84	4.92	4.91			
175	3.82	3.95	4.07	4.18	4.29	4.36	4.32	4.06	4.33	4.32	4.40	4.57	4.67	4.77	4.82	4.76			
180	4.15	4.03	4.13	4.24	4.36	4.45	4.47	4.26	4.20	4.18	4.03	4.16	4.24	4.35	4.44	4.45			

## 7. THD and PF Test

Test type	Voltage (V AC)	Frequency (Hz)	Current(A)	Power Factor	Power(W)	Current THD
Results	277.0	60	0.3591	0.9669	96.18	12.24%





Guangdong Meide Testing Technology Co., Ltd.



## 8. Photo of sample

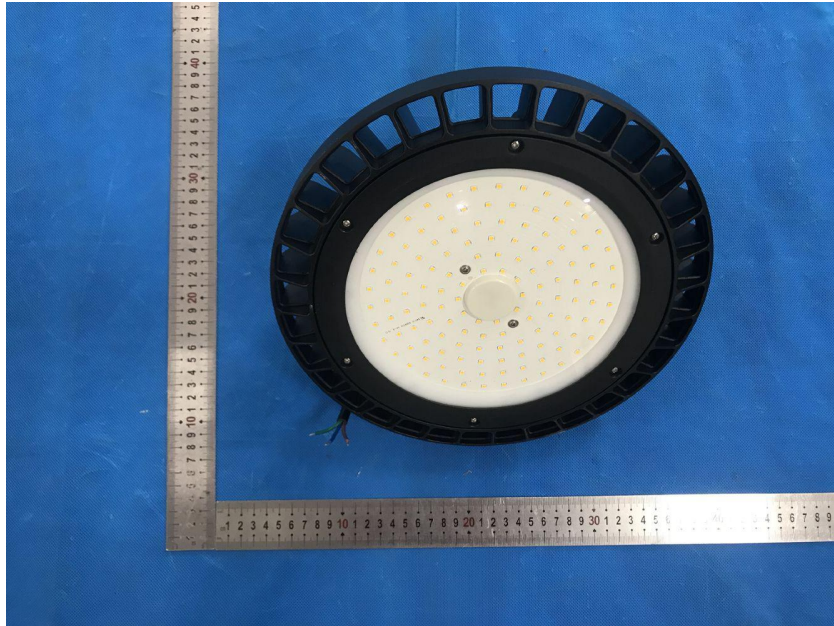


Figure 1

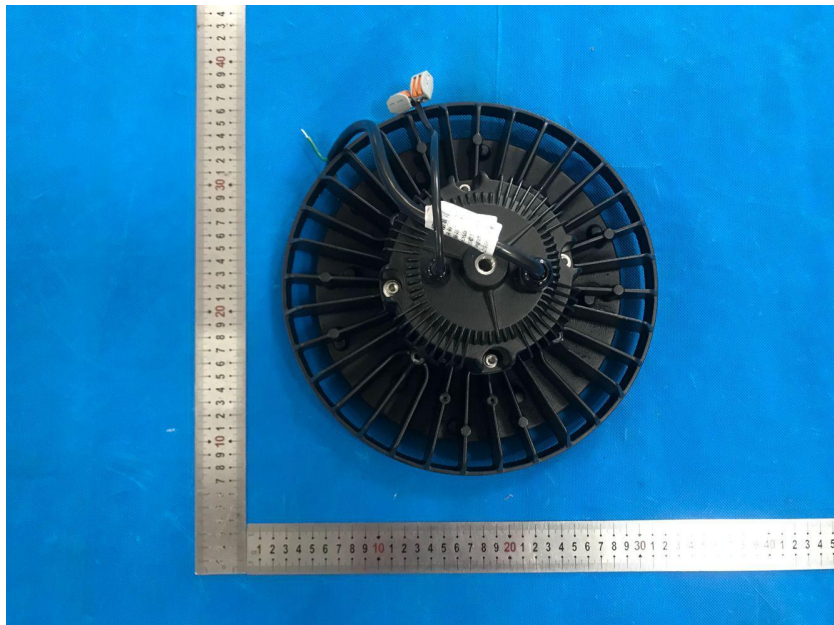


Figure 2

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