



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, DIST. GAUTAM BUDH NAGAR, UP-201305

Test Model..... : 201Y0150W30L70DY, 201Y0150W57L70DY

Product Description : High Bay Luminaires for Commercial and Industrial Buildings

Brand Name..... :  

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

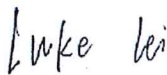
Address..... : 1st floor, B Area, Jinbaisheng Industrial Park, Headquarters 2 Road, Songshan Lake
Hi-tech Industrial Development Zone, Dongguan City, Guangdong Pr., China.

Report No..... : CA1905127L 01007

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



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1.Product Information

Model Number.....: 201Y0150W30L70DY,201Y0150W57L70DY

Manufacturer.....: ROYALUX EXPORTS

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

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

Rated Power.....: 150W

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 Spectoradio 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).



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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° vertical intervals and 22.5° 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
201Y0150W30L70DY	120.0	60	1.24	147.9	0.9939
201Y0150W57L70DY	120.0	60	1.243	148.3	0.9941

Model Number	Luminous Flux(lm)	Efficacy (lm/W)	CCT (K)	Ra	R9
201Y0150W30L70DY	20841	140.92	3001	72.4	0
201Y0150W57L70DY	21618	145.77	5474	73.3	0

Model Number	duv	x	y	u'	v'
201Y0150W30L70DY	0.0009	0.4382	0.4068	0.2502	0.5226
201Y0150W57L70DY	0.00333	0.3331	0.3479	0.2047	0.4811

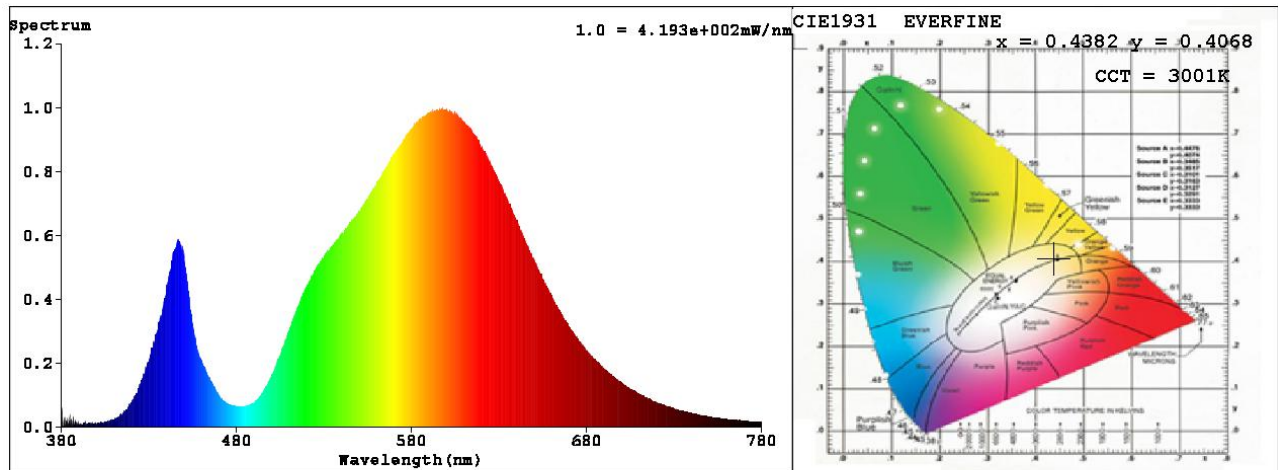


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5.2 Spectrum

201Y0150W30L70DY



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.4382$ $y = 0.4068$ / $u' = 0.2502$ $v' = 0.5226$ ($duv=9.00e-04$)

CCT= 3001K Prcp WL: Ld=582.5nm Purity=53.6%

Peak WL: Lp=598nm FWHM: =126.7nm Ratio:R=21.5% G=77.2% B=1.3%

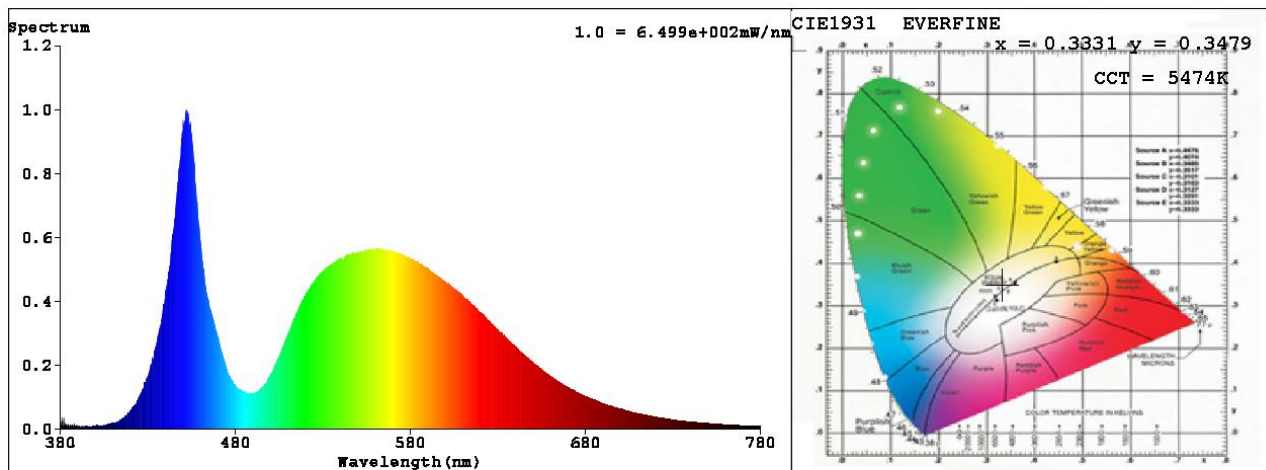
Render Index: Ra = 72.4 TM30:Rf=70 Rg=96

R1 =70 R2 =80 R3 =89 R4 =71 R5 =68 R6 =72 R7 =80

R8 =50 R9 =0 R10=53 R11=66 R12=45 R13=71 R14=93 R15=63



201Y0150W57L70DY



Colorimetric Parameters

Chromaticity Coordinate: $x = 0.3331$ $y = 0.3479$ / $u' = 0.2047$ $v' = 0.4811$ ($duv=3.33e-03$)

CCT= 5474K Prop WL: $L_d=553.7nm$ Purity=4.3%

Peak WL: $L_p=452nm$ FWHM: =19.6nm Ratio:R=13.7% G=82.8% B=3.5%

Render Index: $R_a = 73.3$ 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=45 R11=68 R12=40 R13=72 R14=89 R15=67



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6. Goniophotometer Test results

6.1 Test Data

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

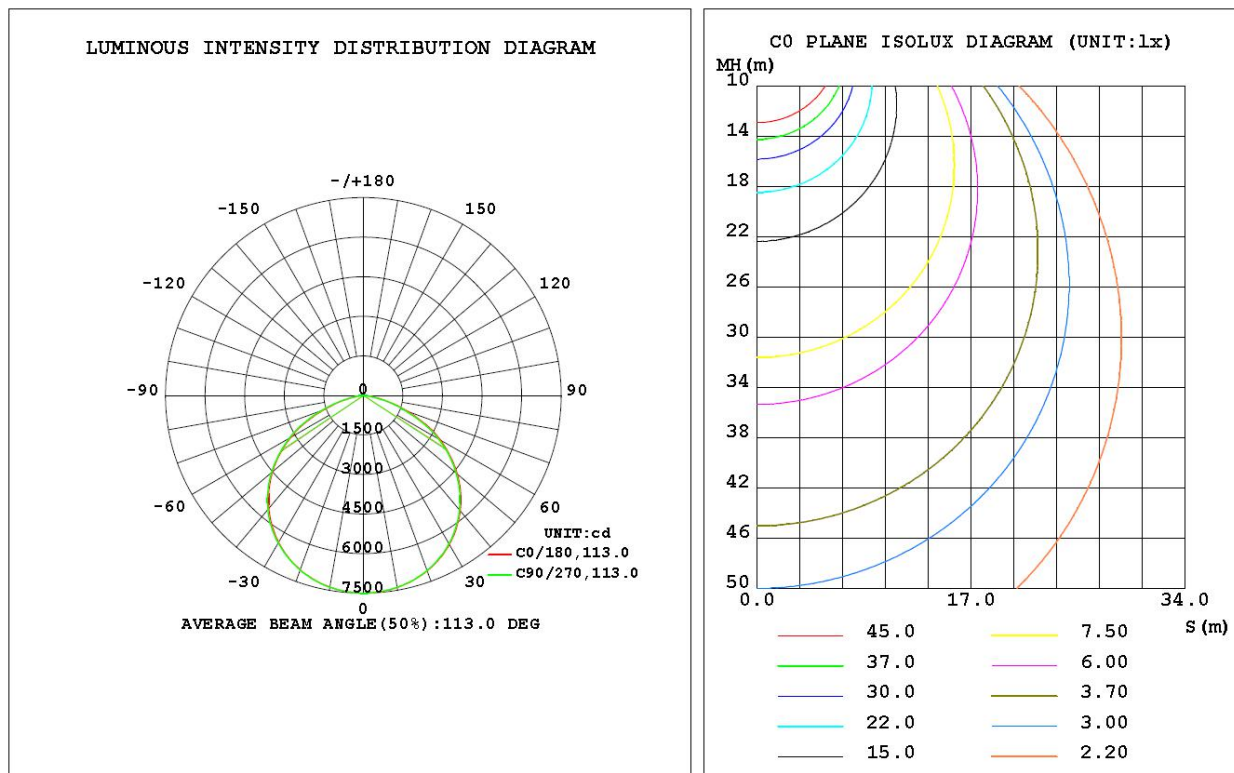
Electrical Measurement

Model Number	Input Voltage (V)	Frequency (Hz)	Input Current(A)	Power Factor	Power(W)
201Y0150W30L70DY	120.0	60	1.239	0.9940	147.8

Photometric Measurement

Model Number	Luminous Flux (lm)	Efficacy (lm/W)	ZL (20-50°)	Spacing Criteria (C0/180°)	Spacing Criteria (C90/270°)
201Y0150W30L70DY	20848.9	141.06	52.3%	1.28	1.28

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





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6.3 Zonal Flux Diagram

ZONAL FLUX DIAGRAM:

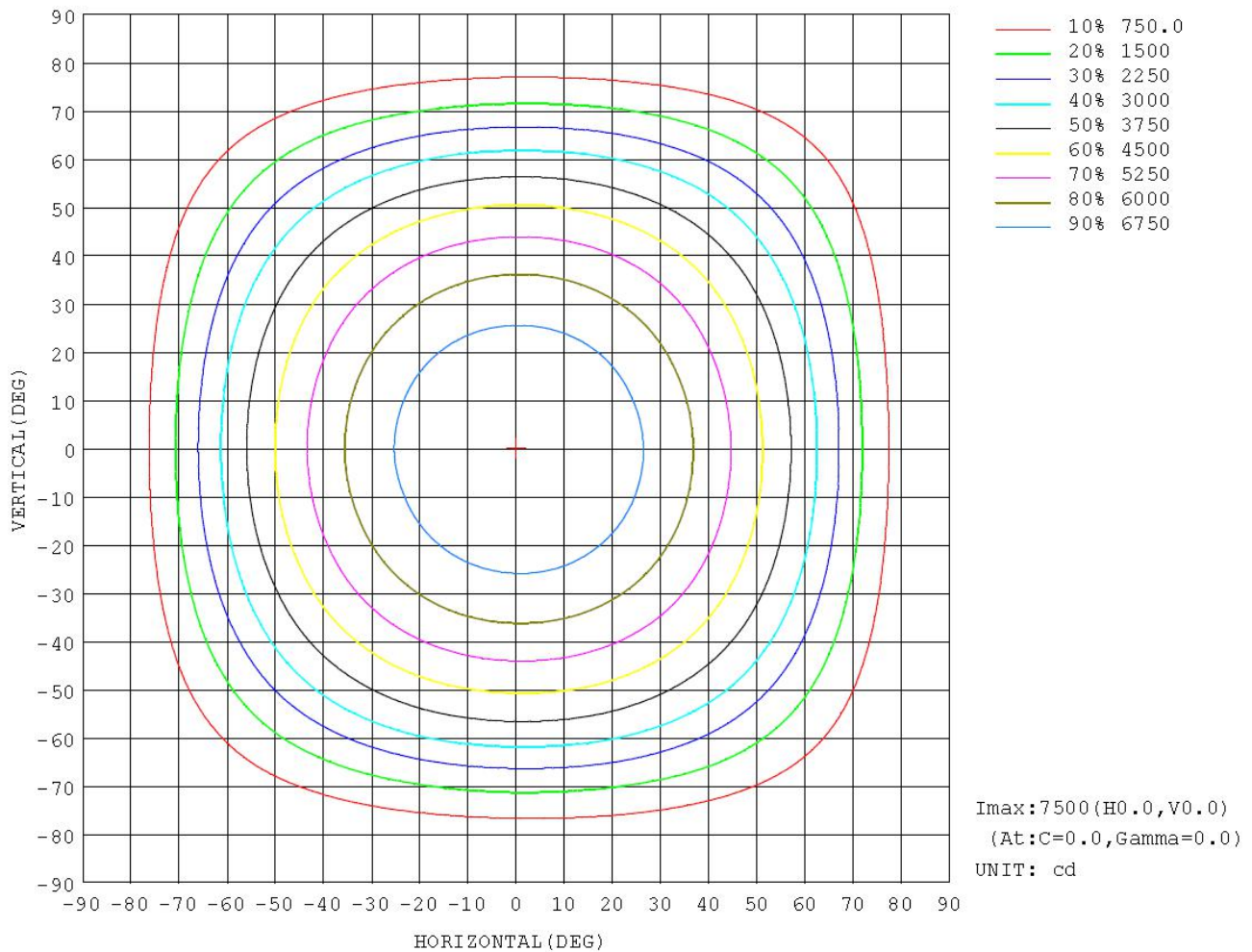
γ	C0	C45	C90	C135	C180	C225	C270	C315	γ	Φ zone	Φ total	%lum, lamp
10	7390	7391	7385	7377	7376	7378	7384	7389	0- 10	710.0	710.0	3.41, 3.41
20	7073	7076	7059	7035	7028	7030	7043	7063	10- 20	2046	2756	13.2, 13.2
30	6518	6512	6487	6449	6439	6439	6468	6496	20- 30	3131	5888	28.2, 28.2
40	5707	5705	5661	5605	5589	5589	5647	5678	30- 40	3810	9698	46.5, 46.5
50	4642	4642	4588	4513	4506	4509	4561	4597	40- 50	3959	13657	65.5, 65.5
60	3356	3329	3275	3197	3183	3196	3246	3319	50- 60	3515	17172	82.4, 82.4
70	1778	1770	1687	1603	1610	1649	1725	1790	60- 70	2465	19636	94.2, 94.2
80	460.1	430.5	384.6	337.2	353.1	365.2	416.3	468.1	70- 80	1063	20699	99.3, 99.3
90	1.442	1.109	0.8421	0.7892	1.491	1.463	1.488	2.365	80- 90	129.1	20828	99.9, 99.9
100	1.179	1.194	1.223	1.262	2.466	2.433	2.340	2.267	90-100	1.586	20830	99.9, 99.9
110	1.739	1.751	1.788	1.831	2.908	2.849	2.680	2.681	100-110	2.187	20832	99.9, 99.9
120	2.480	2.451	2.795	2.650	2.812	2.780	2.832	2.635	110-120	2.436	20834	99.9, 99.9
130	3.373	3.513	3.953	3.687	3.615	3.512	3.685	3.458	120-130	2.775	20837	99.9, 99.9
140	4.275	4.488	4.677	4.527	5.364	5.277	5.244	5.423	130-140	3.315	20840	100, 100
150	4.445	4.568	4.621	4.656	6.803	6.830	6.691	6.869	140-150	3.371	20844	100, 100
160	4.801	5.392	5.352	5.349	7.286	7.525	7.653	7.755	150-160	2.824	20846	100, 100
170	5.479	5.750	5.924	6.056	7.077	6.915	7.265	7.510	160-170	1.823	20848	100, 100
180	6.360	6.325	6.631	6.814	6.424	6.157	6.473	6.794	170-180	0.6215	20849	100, 100
DEG	LUMINOUS INTENSITY: cd									UNIT: lm		



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6.4 Isocandela Diagram





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6.5 Luminous Distribution Intensity Data

Table--1

UNIT: cd

C(°)	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5			
γ (°)	0	5	10	15	20	25	30	35	40	45	50	55	60	65	70	75	80	85	90
0	7493	7493	7493	7493	7493	7493	7493	7493	7493	7493	7493	7493	7493	7493	7493	7493			
5	7467	7468	7467	7466	7465	7463	7461	7461	7462	7462	7462	7465	7465	7466	7467	7468			
10	7390	7391	7391	7390	7385	7380	7377	7375	7376	7377	7378	7382	7384	7386	7389	7389			
15	7259	7263	7264	7260	7252	7241	7235	7231	7233	7230	7232	7239	7244	7248	7254	7257			
20	7073	7077	7076	7070	7059	7044	7035	7029	7028	7025	7030	7038	7043	7051	7063	7068			
25	6828	6830	6825	6820	6804	6786	6774	6762	6763	6760	6767	6775	6782	6796	6812	6820			
30	6518	6518	6512	6506	6487	6466	6449	6433	6439	6433	6439	6454	6468	6481	6496	6505			
35	6144	6148	6141	6128	6105	6085	6059	6040	6046	6041	6044	6068	6094	6106	6119	6127			
40	5707	5712	5705	5689	5661	5635	5605	5582	5589	5583	5589	5620	5647	5663	5678	5683			
45	5208	5207	5205	5188	5156	5119	5086	5061	5077	5071	5081	5105	5133	5152	5172	5177			
50	4642	4640	4642	4630	4588	4557	4513	4486	4506	4505	4509	4528	4561	4576	4597	4611			
55	4017	4021	4010	4005	3961	3933	3886	3850	3874	3869	3872	3900	3924	3951	3968	3996			
60	3356	3351	3329	3317	3275	3245	3197	3154	3183	3173	3196	3224	3246	3288	3319	3338			
65	2604	2588	2567	2538	2477	2434	2384	2359	2421	2411	2441	2488	2523	2563	2604	2606			
70	1778	1774	1770	1731	1687	1636	1603	1581	1610	1611	1649	1684	1725	1760	1790	1795			
75	1074	1065	1052	1012	996	938	900	889	902	915	939	982	1013	1047	1074	1107			
80	460	449	430	407	385	358	337	325	353	360	365	389	416	445	468	488			
85	101	98.1	90.3	81.4	73.7	64.6	58.2	55.3	57.5	58.9	53.1	62.3	73.1	84.7	93.2	102			
90	1.44	1.31	1.11	0.86	0.84	0.88	0.79	0.79	1.49	1.48	1.46	1.44	1.49	1.76	2.37	2.72			
95	0.93	0.94	0.95	0.96	0.97	0.99	1.01	1.02	2.00	1.99	1.97	1.94	1.89	1.85	1.82	1.80			
100	1.18	1.19	1.19	1.20	1.22	1.24	1.26	1.28	2.47	2.46	2.43	2.41	2.34	2.29	2.27	2.25			
105	1.43	1.45	1.45	1.45	1.48	1.51	1.52	1.57	2.82	2.81	2.77	2.73	2.67	2.60	2.60	2.61			
110	1.74	1.76	1.75	1.74	1.79	1.81	1.83	1.91	2.91	2.91	2.85	2.73	2.68	2.64	2.68	2.71			
115	2.10	2.12	2.08	2.09	2.23	2.20	2.18	2.29	2.86	2.88	2.80	2.70	2.68	2.62	2.63	2.68			
120	2.48	2.50	2.45	2.57	2.80	2.71	2.65	2.63	2.81	2.85	2.78	2.79	2.83	2.72	2.64	2.64			
125	2.91	2.94	3.01	3.22	3.41	3.30	3.19	3.18	3.00	3.06	3.01	3.09	3.13	3.05	2.92	2.89			
130	3.37	3.47	3.51	3.83	3.95	3.91	3.69	3.88	3.61	3.66	3.51	3.66	3.68	3.60	3.46	3.47			
135	3.99	3.97	4.09	4.35	4.48	4.43	4.13	4.29	4.53	4.41	4.36	4.43	4.45	4.42	4.38	4.36			
140	4.28	4.37	4.49	4.54	4.68	4.63	4.53	4.47	5.36	5.22	5.28	5.23	5.24	5.27	5.42	5.36			
145	4.67	4.76	4.62	4.61	4.75	4.75	4.64	4.75	6.30	6.11	6.16	5.98	5.98	6.10	6.25	6.33			
150	4.44	4.58	4.57	4.59	4.62	4.88	4.66	4.63	6.80	6.87	6.83	6.87	6.69	6.80	6.87	6.90			
155	4.61	4.84	4.91	4.97	4.97	5.22	4.94	4.85	7.29	7.35	7.35	7.68	7.30	7.11	7.48	7.40			
160	4.80	5.22	5.39	5.27	5.35	5.46	5.35	5.16	7.29	7.38	7.52	7.76	7.65	7.61	7.76	7.61			
165	5.09	5.50	5.62	5.43	5.49	5.76	5.70	5.35	7.18	7.11	7.14	7.40	7.43	7.39	7.41	7.55			
170	5.48	5.59	5.75	5.78	5.92	6.10	6.06	5.60	7.08	7.06	6.91	6.99	7.26	7.37	7.51	7.48			
175	5.84	6.04	6.21	6.40	6.56	6.66	6.60	6.20	6.61	6.60	6.72	6.98	7.13	7.28	7.35	7.26			
180	6.36	6.16	6.32	6.48	6.63	6.81	6.81	6.43	6.42	6.40	6.16	6.36	6.47	6.66	6.79	6.80			

7. THD and PF Test

Test type	Voltage (V AC)	Frequency (Hz)	Current(A)	Power Factor	Power(W)	Current THD
Results	277.0	60	0.5606	0.9364	145.42	14.6%



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8. Photo of sample

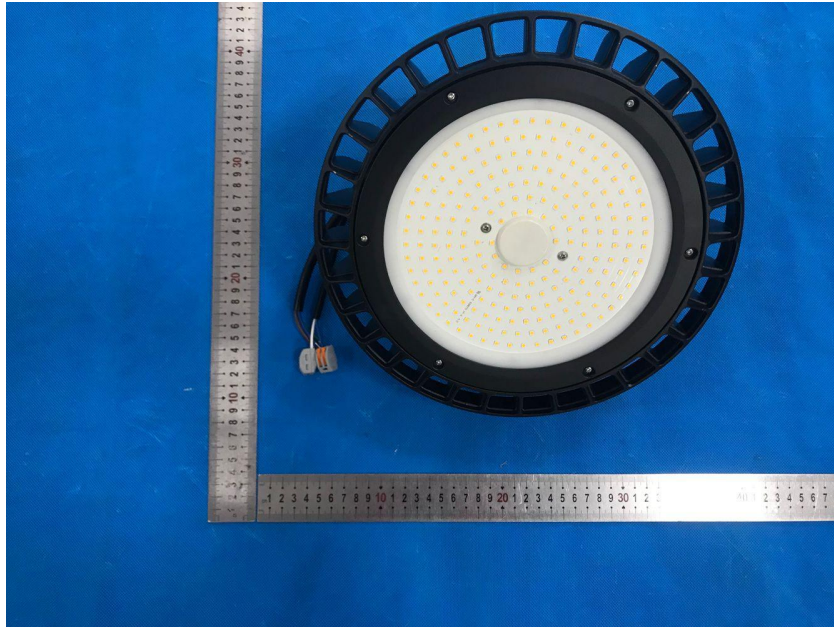


Figure 1

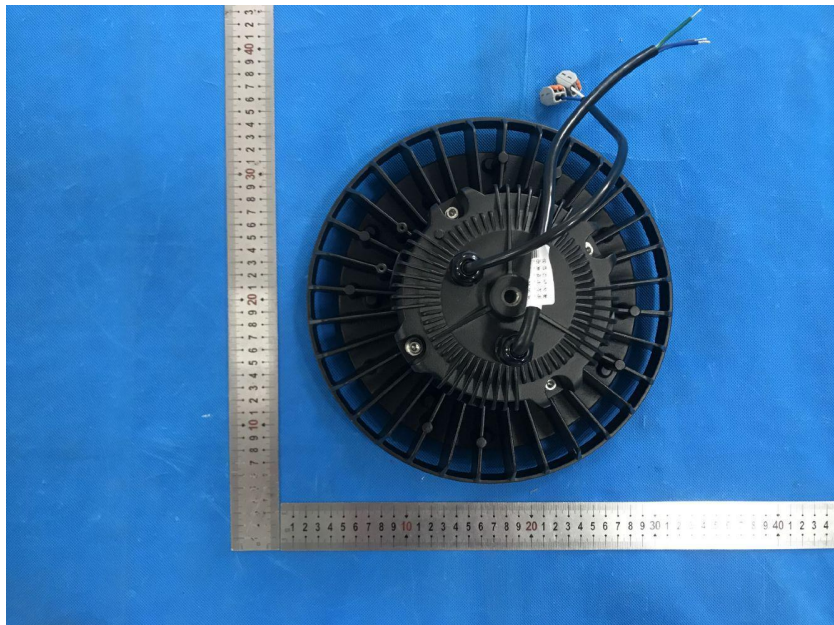


Figure 2

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