

IES LM-79-19

MEASUREMENT AND TEST REPORT

For

Shenzhen Ulledlighting Photoelectricity Co., ltd.

A1702, Yonghuayuan Business Building, No. 6 Baotian 2nd Road, Baoan District, Shenzhen, China

#Test Model: UL-H80W-HS

Report Type:	Electrical and Photometric tests including: Luminous Flux, Power Factor, Chromaticity, Luminous Intensity Distribution
Test Engineer:	Hexy He <i>Hexy He</i>
Report Number:	R2DG200115800-10-M1
Test Date:	2020-03-18 to 2020-04-01
Report Date:	2020-09-17
Reviewed By:	Blake Zhang / EE Engineer
Revised Note:	The previous report R2DG200115800-10 is replaced by this report on 2020-09-17
Prepared By:	Bay Area Compliance Laboratories Corp. (Dongguan). No.69,Pulongcun ,Puxinhu Industrial Area, Tangxia , Dongguan, Guangdong, China. Tel: +86-0769-86858888 Fax:+86-0769-86858588
Accreditation:	The IAS Accreditation Number TL-460.

1. Product Description

General Information:

One test sample was in good condition and received on 2020-01-15, and used for testing.

#Model Tested:	UL-H80W-HS
#Manufacturer:	Shenzhen Ulledlighting Photoelectricity Co., Ltd.
#Brand Name:	ULLEDLIGHTING
#Product Designation:	LED High Bay Light
Burning Time Before Test:	0hour(For New Products)
#Driver Brand:	ULLEDLIGHTING
#Driver Model:	GD122D951-VF21

#Rated Values:

Rated Voltage/Frequency:	AC 100V-240V 50/60HZ
Rated Power:	80W
Nominal CCT:	5000K
Nominal Lumen Output:	15200 lm

2. Standards Used

- ANSI/IES LM-79-19: Approved method :Optical and Electrical Measurements of Solid-State Lighting Products
- ANSI C82.77-10-2014: Harmonic Emission Limits – Related Power Quality Requirements for Lighting
- IES TM-30-18: IES Method for Evaluating Light Source Color Rendition (This method is not in IAS accreditation scope)

3. Description of Test Equipment

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
1.5m temperature integrating sphere	SENSING	SPR-600	S09008	2019-10-24	2020-10-23
High-precision rapid spectral analysis system	EVERFINE	HAAS-2000	M112048CA1361125	2019-10-24	2020-10-23
Digital power meter	YOKOGAWA	WT310	13398	2019-07-12	2020-07-11
Programmable Precision DC Power Supply	ITECH	IT6154	0061 0417 6471 0010 19	2020-03-08	2021-03-07
thermometer	SENSING	NA	NA	2020-03-13	2021-03-12
Standard Light Source	EVERFINE	D204	N/A	2019-07-19	2020-07-18
Precision frequency power supply	ALL Power	APW-105N	970613	2020-03-10	2021-03-09
AC POWER SUPPLY	EVERFINE	VPS1030 PWM	1012017	2020-03-13	2021-03-12
Digital CC&CV DC Power Supply	EVERFINE	WY12010	1009009	2020-03-13	2021-03-12
Digital power meter	YOKOGAWA	WT-210	91j926132	2020-03-13	2021-03-12

Device	Manufacture	Model No	Serial No	Calibration date	Calibration due date
full-field speed goniophotometer	EVERFINE	GO-R5000	YG108492N10120001	2020-03-13	2021-03-12
Wireless Remote Sensor	N/A	433MHz	N/A	2020-03-13	2021-03-12
Standard Light Source	EVERFINE	D908	1012003	2019-11-27	2020-11-26

Statement of Traceability: Bay Area Compliance Laboratories Corp. (Dongguan) attested that all calibration has been performed using suitable standards traceable to National Primary Standards and International System of Units (SI).

4. Test Method

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 is maintained between 10% and 65%. The air flow around the SSL product is less than 0.2m/s.

Integrating Sphere System

The system includes AC power source, digital power meter, DC power supply, Spectroradiometer, and integrating sphere. The integrating sphere system is calibrated by standard spectrum light source before measurement.

4π geometry was used during measurement. The product was operated in its intended orientation in application and was recorded in this report.

The uncertainty of the light output (luminous flux) measurements is $U=2.1\%$ ($K=2$), at the 95% confidence level. The uncertainty of the correlated color temperature measurements is $U=22\text{K}$ ($K=2$), at the 95% confidence level. The uncertainty of the CRI is $U=2.1(K=2)$, at the 95% confidence level.

The uncertainty of power meter AC current $U=0.39\%$ of rdg, AC Voltage $U=0.25\%$ of rdg, Power $U=0.42\%$ ($K=2$), at the 95% confidence level.

Goniophotometer System

The goniophotometer system is calibrated by standard light source before measurement.

Type C goniophotometer was used for measuring total luminous flux, luminous intensity distribution, and color spatial uniformity. The product was operated in its intended orientation in application and was recorded in this report. For luminous intensity distribution, The vertical angle (γ) test intervals were set no more than 2.5 degree, The horizontal angle (C plane) test intervals were set no more than 22.5 degree. For color spatial uniformity, The vertical angle (γ) test intervals were set no more than 90 degree, The horizontal angle (C plane) test intervals were set no more than 10 degree.

The uncertainty of the luminous intensity is $U=2.00\%$ ($K=2$), at the 95% confidence level.

Fidelity Index and Gamut Index 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. Test Result

[Integrating Sphere System]

Total operating time for integrating sphere test: **1.0 hour**

Test orientation: **Downward**

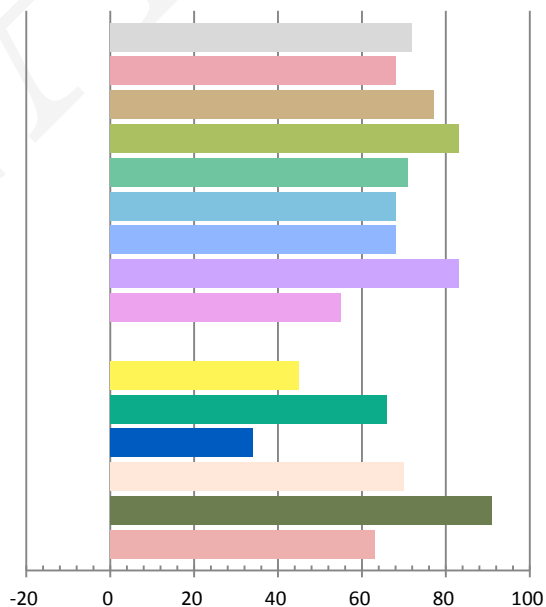
Photometric and Electrical Measurement Result

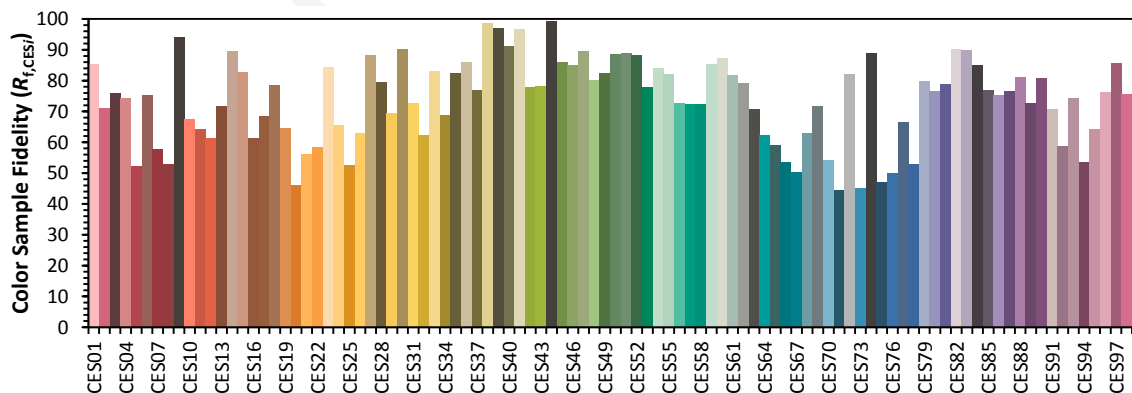
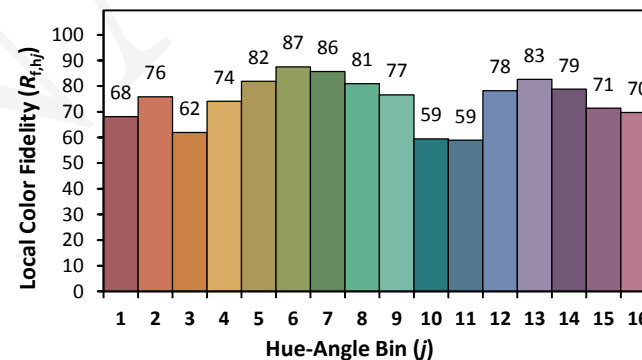
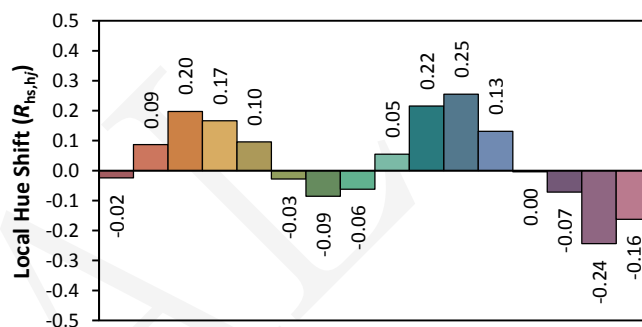
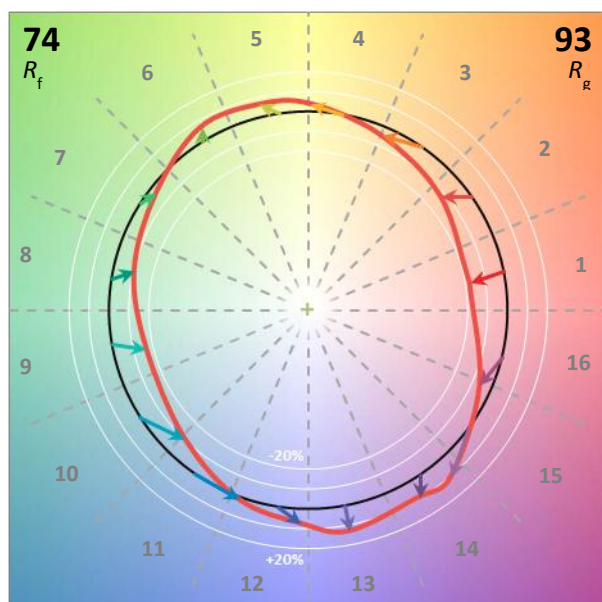
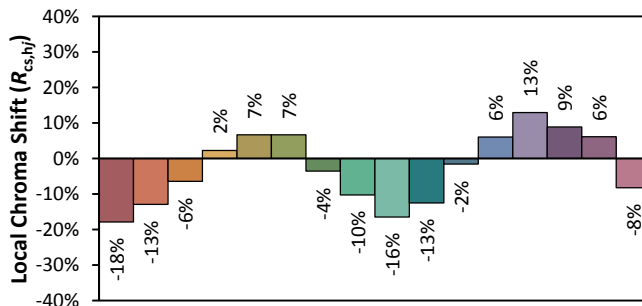
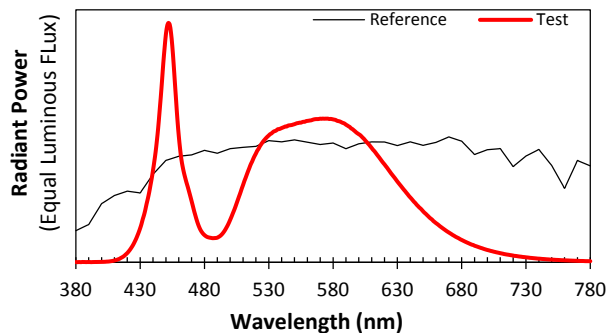
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
240.0	50	0.3495	77.22	0.9207	14697	190.33

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
42.443	4902	0.00520	0.3491	0.3654	0.2089	0.4918

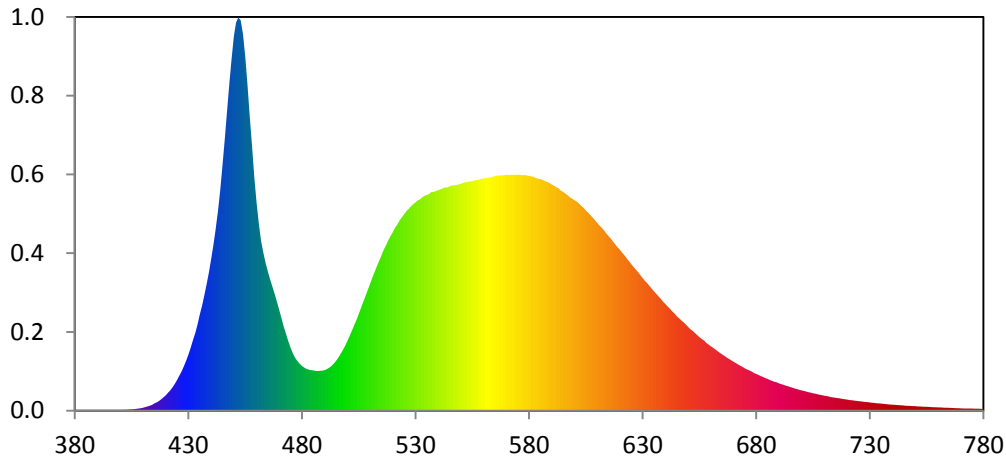
Color Rendering Index

Ra			
71.8			
R1	R2	R3	R4
68	77	83	71
R5	R6	R7	R8
68	68	83	55
R9	R10	R11	R12
0	45	66	34
R13	R14	R15	
70	91	63	





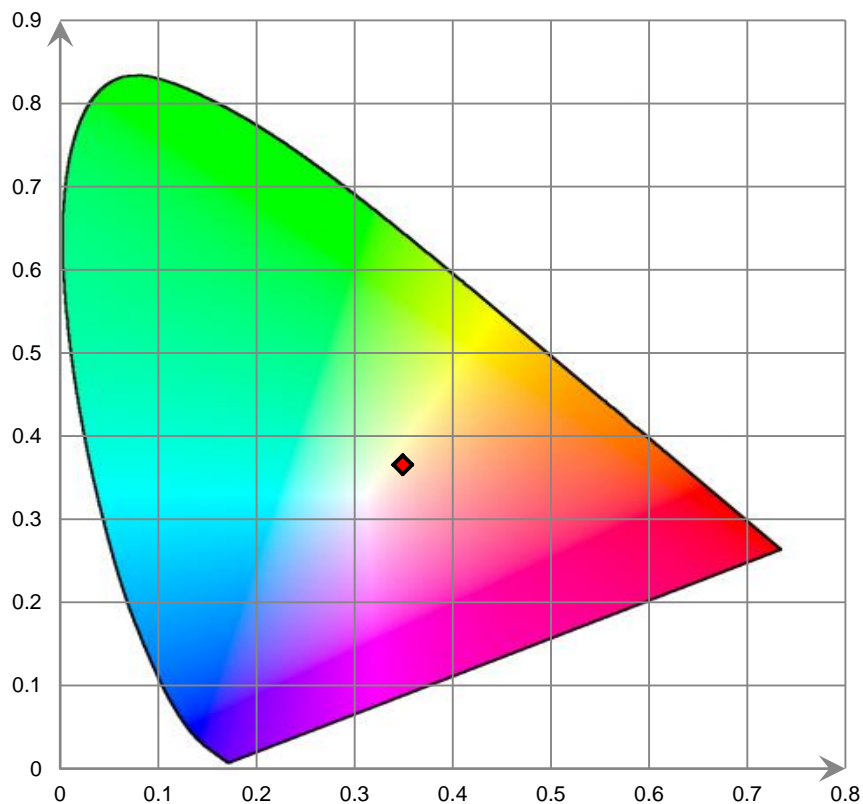
Relative Spectral Power Distribution



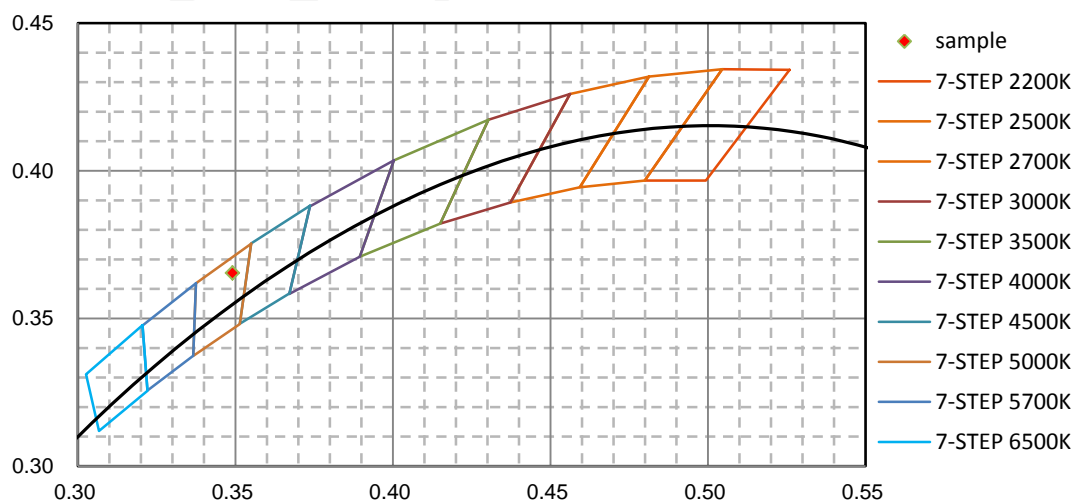
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	5.411E-01	421	1.850E+01	462	1.764E+02	503	8.860E+01	544	2.315E+02
381	2.918E-01	422	2.129E+01	463	1.636E+02	504	9.437E+01	545	2.331E+02
382	4.789E-01	423	2.446E+01	464	1.530E+02	505	1.006E+02	546	2.335E+02
383	4.740E-01	424	2.793E+01	465	1.443E+02	506	1.068E+02	547	2.338E+02
384	3.171E-01	425	3.180E+01	466	1.361E+02	507	1.130E+02	548	2.342E+02
385	6.314E-01	426	3.623E+01	467	1.288E+02	508	1.192E+02	549	2.349E+02
386	5.578E-01	427	4.090E+01	468	1.207E+02	509	1.258E+02	550	2.355E+02
387	5.273E-01	428	4.627E+01	469	1.126E+02	510	1.318E+02	551	2.364E+02
388	4.131E-01	429	5.200E+01	470	1.043E+02	511	1.383E+02	552	2.372E+02
389	5.410E-01	430	5.824E+01	471	9.586E+01	512	1.441E+02	553	2.375E+02
390	5.082E-01	431	6.515E+01	472	8.719E+01	513	1.501E+02	554	2.381E+02
391	4.995E-01	432	7.345E+01	473	7.931E+01	514	1.559E+02	555	2.381E+02
392	3.097E-01	433	8.072E+01	474	7.181E+01	515	1.614E+02	556	2.390E+02
393	5.179E-01	434	8.952E+01	475	6.520E+01	516	1.672E+02	557	2.396E+02
394	5.257E-01	435	9.970E+01	476	5.964E+01	517	1.716E+02	558	2.396E+02
395	6.026E-01	436	1.088E+02	477	5.493E+01	518	1.768E+02	559	2.407E+02
396	6.143E-01	437	1.193E+02	478	5.144E+01	519	1.814E+02	560	2.411E+02
397	6.447E-01	438	1.314E+02	479	4.863E+01	520	1.855E+02	561	2.414E+02
398	7.020E-01	439	1.434E+02	480	4.651E+01	521	1.902E+02	562	2.418E+02
399	7.100E-01	440	1.571E+02	481	4.473E+01	522	1.933E+02	563	2.421E+02
400	7.881E-01	441	1.718E+02	482	4.343E+01	523	1.976E+02	564	2.429E+02
401	8.108E-01	442	1.881E+02	483	4.266E+01	524	2.009E+02	565	2.436E+02
402	8.980E-01	443	2.074E+02	484	4.210E+01	525	2.041E+02	566	2.440E+02
403	1.025E+00	444	2.290E+02	485	4.172E+01	526	2.071E+02	567	2.442E+02
404	1.214E+00	445	2.547E+02	486	4.128E+01	527	2.096E+02	568	2.442E+02
405	1.318E+00	446	2.813E+02	487	4.121E+01	528	2.121E+02	569	2.444E+02
406	1.540E+00	447	3.098E+02	488	4.139E+01	529	2.143E+02	570	2.449E+02
407	1.885E+00	448	3.399E+02	489	4.155E+01	530	2.163E+02	571	2.447E+02
408	2.206E+00	449	3.654E+02	490	4.210E+01	531	2.184E+02	572	2.450E+02
409	2.627E+00	450	3.885E+02	491	4.331E+01	532	2.196E+02	573	2.448E+02
410	3.202E+00	451	4.030E+02	492	4.469E+01	533	2.215E+02	574	2.449E+02
411	3.810E+00	452	4.082E+02	493	4.653E+01	534	2.232E+02	575	2.449E+02
412	4.421E+00	453	4.050E+02	494	4.893E+01	535	2.239E+02	576	2.449E+02
413	5.258E+00	454	3.909E+02	495	5.176E+01	536	2.251E+02	577	2.443E+02
414	6.144E+00	455	3.680E+02	496	5.506E+01	537	2.269E+02	578	2.445E+02
415	7.501E+00	456	3.388E+02	497	5.886E+01	538	2.271E+02	579	2.442E+02
416	8.674E+00	457	3.062E+02	498	6.288E+01	539	2.279E+02	580	2.437E+02
417	1.004E+01	458	2.742E+02	499	6.752E+01	540	2.289E+02	581	2.432E+02
418	1.184E+01	459	2.421E+02	500	7.255E+01	541	2.298E+02	582	2.427E+02
419	1.387E+01	460	2.160E+02	501	7.768E+01	542	2.307E+02	583	2.414E+02
420	1.590E+01	461	1.943E+02	502	8.319E+01	543	2.317E+02	584	2.408E+02

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	2.403E+02	626	1.492E+02	667	5.534E+01	708	1.665E+01	749	4.715E+00
586	2.394E+02	627	1.464E+02	668	5.372E+01	709	1.613E+01	750	4.723E+00
587	2.382E+02	628	1.437E+02	669	5.228E+01	710	1.565E+01	751	4.502E+00
588	2.374E+02	629	1.407E+02	670	5.088E+01	711	1.517E+01	752	4.408E+00
589	2.364E+02	630	1.377E+02	671	4.948E+01	712	1.471E+01	753	4.227E+00
590	2.347E+02	631	1.349E+02	672	4.814E+01	713	1.416E+01	754	4.128E+00
591	2.334E+02	632	1.322E+02	673	4.662E+01	714	1.377E+01	755	4.054E+00
592	2.319E+02	633	1.295E+02	674	4.542E+01	715	1.335E+01	756	3.902E+00
593	2.307E+02	634	1.267E+02	675	4.402E+01	716	1.307E+01	757	3.776E+00
594	2.284E+02	635	1.239E+02	676	4.280E+01	717	1.268E+01	758	3.613E+00
595	2.272E+02	636	1.214E+02	677	4.176E+01	718	1.229E+01	759	3.636E+00
596	2.253E+02	637	1.186E+02	678	4.060E+01	719	1.195E+01	760	3.403E+00
597	2.235E+02	638	1.160E+02	679	3.921E+01	720	1.153E+01	761	3.378E+00
598	2.215E+02	639	1.131E+02	680	3.817E+01	721	1.106E+01	762	3.291E+00
599	2.199E+02	640	1.107E+02	681	3.709E+01	722	1.091E+01	763	3.174E+00
600	2.184E+02	641	1.083E+02	682	3.598E+01	723	1.059E+01	764	3.059E+00
601	2.170E+02	642	1.057E+02	683	3.493E+01	724	1.022E+01	765	2.981E+00
602	2.149E+02	643	1.031E+02	684	3.389E+01	725	9.920E+00	766	2.882E+00
603	2.126E+02	644	1.009E+02	685	3.297E+01	726	9.671E+00	767	2.811E+00
604	2.105E+02	645	9.817E+01	686	3.194E+01	727	9.342E+00	768	2.715E+00
605	2.078E+02	646	9.602E+01	687	3.097E+01	728	9.067E+00	769	2.664E+00
606	2.054E+02	647	9.366E+01	688	3.005E+01	729	8.852E+00	770	2.532E+00
607	2.029E+02	648	9.178E+01	689	2.948E+01	730	8.556E+00	771	2.462E+00
608	2.005E+02	649	8.952E+01	690	2.836E+01	731	8.332E+00	772	2.380E+00
609	1.977E+02	650	8.698E+01	691	2.764E+01	732	8.070E+00	773	2.317E+00
610	1.950E+02	651	8.472E+01	692	2.688E+01	733	7.736E+00	774	2.316E+00
611	1.921E+02	652	8.281E+01	693	2.610E+01	734	7.538E+00	775	2.210E+00
612	1.898E+02	653	8.064E+01	694	2.532E+01	735	7.338E+00	776	2.085E+00
613	1.870E+02	654	7.856E+01	695	2.457E+01	736	7.073E+00	777	2.029E+00
614	1.840E+02	655	7.634E+01	696	2.389E+01	737	6.906E+00	778	2.051E+00
615	1.812E+02	656	7.452E+01	697	2.306E+01	738	6.665E+00	779	1.987E+00
616	1.784E+02	657	7.278E+01	698	2.238E+01	739	6.428E+00	780	1.935E+00
617	1.753E+02	658	7.043E+01	699	2.168E+01	740	6.260E+00		
618	1.723E+02	659	6.869E+01	700	2.103E+01	741	6.160E+00		
619	1.695E+02	660	6.689E+01	701	2.053E+01	742	5.899E+00		
620	1.669E+02	661	6.531E+01	702	1.986E+01	743	5.742E+00		
621	1.640E+02	662	6.360E+01	703	1.927E+01	744	5.604E+00		
622	1.612E+02	663	6.172E+01	704	1.879E+01	745	5.411E+00		
623	1.581E+02	664	6.013E+01	705	1.812E+01	746	5.201E+00		
624	1.551E+02	665	5.848E+01	706	1.767E+01	747	5.085E+00		
625	1.520E+02	666	5.687E+01	707	1.708E+01	748	4.899E+00		

CIE 1931 x y Chromaticity Diagram



7-Step Chromaticity Quadrangles



[Goniophotometer System]

Total operating time for luminous intensity distribution: **2.0 hour**

Test orientation: **Downward**

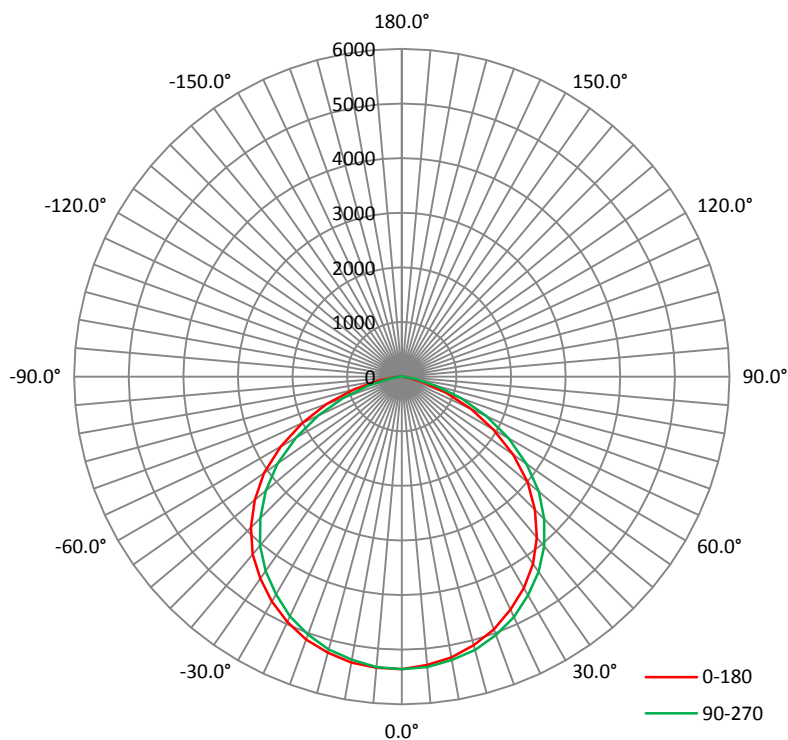
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
240.02	50	0.3501	77.200	0.9187

Photometric Measurement

Luminous Flux (lm)	Efficacy (lm/W)	I_{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
14718.9	190.66	5377	1.24	1.28

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I_{max}):	111.9	111.8	111.9	111.9	111.9
Field Angle (10% I_{max}):	152.3	152.0	152.2	152.2	152.2

Luminous Intensity (cd) Distribution Data

C y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0°	5357	5357	5357	5357	5357	5357	5357	5357
1°	5357	5365	5359	5357	5346	5354	5350	5359
2°	5361	5360	5353	5361	5346	5348	5341	5333
3°	5376	5363	5355	5355	5346	5343	5335	5329
4°	5364	5364	5349	5352	5338	5336	5332	5327
5°	5351	5354	5347	5344	5338	5323	5314	5305
6°	5351	5346	5339	5334	5320	5308	5297	5295
7°	5343	5338	5328	5318	5304	5292	5278	5280
8°	5333	5339	5321	5314	5289	5285	5266	5265
9°	5323	5321	5313	5304	5276	5275	5255	5244
10°	5318	5312	5298	5283	5262	5249	5234	5228
11°	5300	5301	5284	5275	5231	5233	5207	5207
12°	5288	5283	5261	5251	5228	5203	5191	5173
13°	5282	5263	5249	5234	5205	5193	5166	5158
14°	5254	5261	5237	5215	5189	5162	5148	5133
15°	5233	5229	5209	5195	5171	5142	5121	5110
16°	5207	5212	5188	5174	5140	5119	5092	5076
17°	5192	5188	5170	5141	5112	5083	5050	5040
18°	5169	5171	5145	5121	5074	5056	5020	5005
19°	5147	5139	5130	5100	5055	5038	4991	4974
20°	5123	5112	5091	5070	5024	4989	4957	4937
21°	5088	5087	5063	5036	4979	4955	4920	4897
22°	5060	5053	5024	5000	4950	4910	4882	4850
23°	5036	5019	4995	4959	4915	4877	4844	4814
24°	4993	4992	4959	4925	4871	4832	4805	4774
25°	4956	4950	4911	4888	4843	4795	4757	4727
26°	4915	4915	4882	4847	4791	4747	4711	4675
27°	4877	4874	4839	4799	4745	4702	4657	4633
28°	4837	4836	4803	4760	4695	4656	4612	4582
29°	4792	4788	4769	4715	4648	4613	4557	4528
30°	4755	4742	4719	4667	4603	4553	4505	4478
31°	4704	4700	4668	4615	4544	4503	4448	4426
32°	4662	4646	4612	4570	4501	4448	4400	4367
33°	4622	4599	4567	4516	4450	4396	4347	4313
34°	4568	4554	4517	4461	4395	4338	4289	4261
35°	4515	4501	4462	4410	4348	4284	4228	4191
36°	4460	4443	4403	4351	4283	4223	4162	4133
37°	4409	4388	4348	4290	4225	4161	4095	4068
38°	4352	4341	4290	4237	4159	4098	4034	3999
39°	4299	4274	4238	4180	4101	4038	3966	3926
40°	4247	4216	4172	4112	4037	3962	3890	3850
41°	4177	4161	4108	4046	3954	3888	3808	3773
42°	4117	4093	4038	3978	3891	3810	3734	3689
43°	4055	4024	3968	3898	3815	3730	3654	3613
44°	3977	3955	3896	3826	3736	3653	3581	3531
45°	3908	3877	3816	3748	3663	3574	3499	3452
46°	3821	3802	3732	3666	3579	3494	3415	3374
47°	3745	3724	3661	3586	3502	3415	3325	3291
48°	3666	3648	3580	3504	3414	3327	3243	3202
49°	3589	3566	3503	3430	3334	3251	3164	3111

Luminous Intensity (cd) Distribution Data

C y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
50°	3515	3484	3419	3339	3252	3156	3073	3020
51°	3432	3402	3337	3259	3158	3066	2972	2920
52°	3345	3316	3248	3172	3076	2967	2873	2813
53°	3264	3232	3159	3078	2977	2865	2769	2712
54°	3174	3144	3076	2990	2883	2766	2670	2605
55°	3078	3049	2980	2886	2780	2657	2558	2498
56°	2975	2948	2872	2784	2671	2556	2451	2390
57°	2876	2843	2772	2672	2563	2450	2344	2280
58°	2769	2746	2670	2574	2455	2343	2235	2170
59°	2667	2640	2567	2471	2349	2242	2121	2058
60°	2562	2533	2460	2352	2237	2118	2004	1947
61°	2454	2425	2351	2251	2123	2007	1894	1839
62°	2347	2317	2237	2132	2010	1891	1785	1733
63°	2241	2205	2125	2018	1902	1785	1679	1621
64°	2125	2092	2012	1906	1792	1675	1569	1511
65°	2010	1978	1903	1794	1683	1562	1459	1399
66°	1899	1865	1792	1689	1577	1456	1353	1291
67°	1790	1757	1683	1569	1465	1343	1241	1174
68°	1682	1648	1568	1462	1357	1239	1127	1061
69°	1568	1533	1459	1352	1248	1126	1014	955
70°	1461	1421	1351	1244	1135	1016	909	851
71°	1348	1312	1239	1132	1026	909	802	756
72°	1235	1195	1122	1015	917	801	709	658
73°	1125	1085	1008	914	817	715	621	568
74°	1013	983	902	803	716	616	535	492
75°	902	875	800	712	625	526	456	416
76°	801	771	702	618	533	450	377	340
77°	706	674	613	528	456	374	309	274
78°	611	584	527	452	379	304	250	218
79°	525	505	447	375	308	242	191	165
80°	446	426	368	309	244	186	144	122
81°	367	347	304	243	186	140	101	88
82°	297	278	237	190	139	100	72	61
83°	236	218	182	140	101	70	53	49
84°	177	163	133	99	70	52	43	37
85°	130	117	93	69	52	40	33	26
86°	91	83	66	52	40	29	23	19
87°	64	58	53	40	29	22	17	14
88°	51	47	41	30	22	16	13	11
89°	40	37	29	23	17	13	10	8
90°	28	26	22	17	12	10	7	6
91°	21	20	17	13	9	7	5	3
92°	16	13	13	10	6	4	3	1
93°	11	9	10	7	4	3	1	1
94°	8	5	7	5	1	2	1	1
95°	4	1	5	3	1	1	1	1
96°	1	2	3	1	1	1	1	1
97°	1	1	1	1	1	1	1	1
98°	1	1	1	1	1	1	1	1
99°	1	1	1	1	1	1	1	1

Luminous Intensity (cd) Distribution Data

C y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
100°	1	1	1	1	1	1	1	1
101°	1	1	1	1	1	1	1	1
102°	1	1	1	1	1	1	1	2
103°	1	1	1	1	1	1	2	2
104°	1	1	1	1	1	1	2	2
105°	1	1	1	1	1	2	2	2
106°	1	1	1	1	1	2	2	2
107°	1	1	1	1	1	2	2	2
108°	1	1	1	1	2	2	2	2
109°	1	1	1	1	2	2	2	2
110°	1	1	1	1	2	2	2	2
111°	1	1	1	2	2	2	2	2
112°	1	1	1	2	2	2	2	2
113°	1	1	1	2	2	2	2	2
114°	1	1	2	2	2	2	2	2
115°	1	2	2	2	2	2	2	2
116°	2	2	2	2	2	2	2	2
117°	2	2	2	2	2	2	2	2
118°	2	2	2	2	2	2	2	2
119°	2	2	2	2	2	2	2	2
120°	2	2	2	2	2	2	2	2
121°	2	2	2	2	2	2	2	2
122°	2	2	2	2	2	2	2	2
123°	2	2	2	2	2	2	2	2
124°	2	2	2	2	2	2	2	2
125°	2	2	2	2	2	2	3	2
126°	2	2	2	2	3	3	3	3
127°	2	2	2	3	3	3	3	3
128°	2	3	3	3	3	3	3	3
129°	3	3	3	3	3	3	3	3
130°	3	3	3	3	3	3	3	3
131°	3	3	3	3	3	3	3	3
132°	3	3	3	3	3	3	3	3
133°	3	3	3	3	4	4	4	3
134°	3	3	3	4	4	4	4	4
135°	3	4	4	4	4	4	4	4
136°	4	4	4	4	4	4	4	4
137°	4	4	4	4	4	4	4	4
138°	4	4	4	4	4	5	4	4
139°	4	4	4	4	5	5	5	4
140°	4	4	5	5	5	5	5	5
141°	5	5	5	5	5	5	5	5
142°	5	5	5	5	5	5	5	5
143°	5	5	5	5	6	6	6	5
144°	5	5	6	6	6	6	6	5
145°	5	6	6	6	6	6	6	6
146°	6	6	6	6	6	6	6	6
147°	6	6	6	7	7	7	6	6
148°	6	6	7	7	7	7	7	6
149°	6	7	7	7	7	7	7	7

Luminous Intensity (cd) Distribution Data

C y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
150°	6	7	7	7	7	7	7	7
151°	6	7	7	7	7	7	7	7
152°	7	7	7	7	7	8	7	7
153°	7	7	7	8	8	8	8	7
154°	7	8	8	8	8	8	8	7
155°	7	8	8	8	8	8	8	8
156°	7	8	8	8	8	8	8	8
157°	8	8	8	8	8	8	8	8
158°	8	8	8	8	8	8	8	8
159°	8	8	8	8	8	8	8	8
160°	8	8	8	8	8	8	8	8
161°	8	8	8	8	8	8	8	8
162°	8	8	8	8	8	8	8	8
163°	8	8	8	8	8	8	8	8
164°	8	8	8	8	8	8	8	8
165°	8	8	8	8	8	8	8	8
166°	8	8	8	8	8	8	8	8
167°	8	8	8	8	8	8	8	8
168°	8	8	7	8	8	8	8	8
169°	7	7	7	7	8	8	8	7
170°	7	7	7	7	7	7	7	7
171°	7	7	7	7	7	7	7	7
172°	7	7	7	7	7	7	7	7
173°	7	7	7	7	7	7	7	7
174°	7	7	7	7	7	7	7	7
175°	7	7	7	7	7	7	7	7
176°	7	7	7	7	6	7	7	7
177°	7	7	7	6	6	6	7	7
178°	7	6	6	6	6	6	6	6
179°	7	6	6	6	6	6	6	6
180°	6	6	6	6	6	6	6	6

Luminous Intensity (cd) Distribution Data (cont.)

C Y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0°	5357	5357	5357	5357	5357	5357	5357	5357
1°	5340	5351	5356	5362	5349	5377	5358	5364
2°	5333	5343	5341	5350	5344	5362	5363	5369
3°	5325	5329	5332	5338	5347	5360	5352	5371
4°	5305	5314	5319	5337	5342	5360	5363	5371
5°	5300	5301	5308	5327	5339	5350	5353	5370
6°	5284	5289	5297	5315	5324	5337	5357	5356
7°	5282	5279	5278	5301	5310	5332	5335	5343
8°	5255	5262	5268	5291	5299	5311	5328	5331
9°	5238	5252	5254	5274	5274	5310	5310	5326
10°	5221	5226	5236	5256	5268	5295	5303	5314
11°	5193	5208	5220	5237	5252	5291	5286	5305
12°	5175	5189	5196	5220	5228	5258	5270	5287
13°	5143	5154	5172	5197	5220	5244	5254	5273
14°	5111	5128	5149	5177	5197	5226	5243	5258
15°	5091	5101	5119	5153	5181	5206	5222	5239
16°	5066	5077	5094	5126	5146	5185	5210	5216
17°	5036	5044	5062	5096	5118	5159	5178	5197
18°	4995	5011	5031	5065	5093	5127	5152	5159
19°	4957	4972	5000	5037	5052	5105	5127	5144
20°	4927	4939	4967	4999	5037	5068	5104	5120
21°	4885	4903	4935	4969	4998	5053	5069	5093
22°	4843	4866	4892	4928	4960	5009	5034	5060
23°	4799	4814	4850	4891	4926	4971	5003	5029
24°	4745	4774	4810	4851	4890	4936	4972	4996
25°	4709	4727	4764	4813	4857	4895	4938	4961
26°	4661	4685	4721	4769	4806	4854	4910	4918
27°	4616	4633	4674	4722	4759	4815	4862	4884
28°	4565	4582	4622	4676	4710	4770	4816	4837
29°	4515	4542	4576	4624	4660	4724	4771	4797
30°	4471	4482	4523	4573	4622	4680	4728	4754
31°	4413	4436	4479	4521	4565	4643	4681	4706
32°	4357	4376	4414	4472	4513	4581	4629	4658
33°	4301	4319	4356	4413	4465	4534	4579	4612
34°	4236	4261	4302	4358	4413	4486	4530	4566
35°	4188	4208	4242	4298	4364	4426	4478	4514
36°	4122	4153	4180	4236	4300	4370	4426	4453
37°	4062	4080	4116	4173	4240	4319	4360	4398
38°	3990	4010	4046	4113	4183	4250	4306	4336
39°	3918	3942	3977	4047	4111	4201	4242	4289
40°	3844	3860	3901	3977	4054	4140	4184	4227
41°	3765	3784	3832	3896	3984	4075	4121	4163
42°	3687	3714	3745	3824	3909	4001	4055	4093
43°	3605	3630	3667	3746	3839	3926	3988	4033
44°	3523	3549	3588	3677	3762	3854	3917	3964
45°	3447	3471	3511	3592	3687	3774	3843	3894
46°	3370	3396	3428	3514	3606	3696	3771	3807
47°	3283	3303	3346	3427	3527	3621	3685	3734
48°	3197	3218	3261	3345	3446	3535	3604	3651
49°	3104	3133	3173	3262	3356	3462	3522	3580

Luminous Intensity (cd) Distribution Data (cont.)

C y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
50°	3010	3034	3083	3173	3279	3379	3447	3497
51°	2906	2931	2991	3078	3191	3302	3363	3414
52°	2804	2833	2880	2979	3091	3205	3274	3328
53°	2700	2723	2775	2873	2995	3114	3186	3243
54°	2587	2620	2668	2770	2893	3020	3093	3157
55°	2488	2512	2563	2662	2786	2909	2999	3068
56°	2380	2412	2461	2557	2681	2806	2900	2961
57°	2271	2297	2352	2449	2574	2697	2793	2859
58°	2161	2184	2250	2342	2467	2589	2684	2746
59°	2048	2070	2134	2234	2359	2486	2576	2645
60°	1939	1956	2023	2123	2255	2380	2473	2540
61°	1827	1844	1914	2007	2142	2274	2364	2430
62°	1719	1738	1803	1900	2026	2157	2259	2323
63°	1610	1628	1697	1792	1921	2042	2149	2216
64°	1500	1519	1585	1686	1811	1936	2035	2100
65°	1396	1409	1473	1573	1702	1826	1926	1987
66°	1284	1305	1364	1463	1591	1719	1817	1878
67°	1178	1200	1255	1352	1477	1609	1709	1770
68°	1072	1095	1146	1243	1369	1496	1600	1658
69°	966	990	1038	1134	1257	1391	1488	1550
70°	861	880	934	1025	1154	1280	1380	1442
71°	763	778	828	917	1051	1173	1266	1329
72°	669	682	730	815	945	1066	1157	1219
73°	578	594	640	719	840	959	1049	1109
74°	489	507	547	628	742	852	942	999
75°	413	425	465	540	646	756	837	893
76°	344	355	389	457	556	658	739	790
77°	276	289	325	382	475	562	644	693
78°	218	229	262	317	394	478	552	602
79°	175	185	208	255	329	406	465	513
80°	131	141	166	200	263	334	392	431
81°	88	97	125	160	205	267	322	360
82°	63	70	84	120	164	210	259	293
83°	42	48	59	80	123	168	203	233
84°	30	32	42	58	82	126	161	186
85°	24	25	29	41	60	84	119	139
86°	18	20	23	28	41	59	77	93
87°	15	16	18	22	29	42	54	62
88°	11	12	14	18	22	30	38	43
89°	7	8	11	14	18	24	30	34
90°	5	5	7	10	14	20	23	27
91°	2	3	4	7	10	15	19	21
92°	0	1	2	4	7	11	14	14
93°	0	0	0	1	4	7	10	7
94°	0	0	0	0	1	4	7	0
95°	1	1	0	0	0	2	4	0
96°	1	1	1	0	0	0	0	0
97°	1	1	1	1	0	0	0	1
98°	1	1	1	1	1	0	0	0
99°	1	1	1	1	1	1	0	0

Luminous Intensity (cd) Distribution Data (cont.)

C y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
100°	1	1	1	1	1	1	1	0
101°	1	1	1	1	1	1	1	1
102°	1	1	1	1	1	1	1	1
103°	1	1	1	1	1	1	1	1
104°	1	1	1	1	1	1	1	1
105°	1	1	1	1	1	1	1	1
106°	1	1	1	1	1	1	1	1
107°	1	1	1	1	1	1	1	1
108°	1	1	1	1	1	1	1	1
109°	1	1	1	1	1	1	1	1
110°	1	1	1	1	1	1	1	1
111°	1	1	1	1	1	1	1	1
112°	1	1	1	1	1	1	1	1
113°	1	1	1	1	1	1	1	1
114°	1	1	1	1	1	1	1	1
115°	1	1	1	1	1	1	1	1
116°	1	1	1	1	1	1	1	1
117°	1	1	1	1	1	1	1	1
118°	1	1	1	1	1	1	1	1
119°	1	1	1	1	1	1	1	1
120°	2	1	1	1	1	1	1	1
121°	2	2	2	1	1	1	1	1
122°	2	2	2	2	1	1	1	1
123°	2	2	2	2	2	1	1	1
124°	2	2	2	2	2	1	1	1
125°	2	2	2	2	2	2	1	1
126°	2	2	2	2	2	2	2	1
127°	2	2	2	2	2	2	2	2
128°	2	2	2	2	2	2	2	2
129°	2	2	2	2	2	2	2	2
130°	2	2	2	2	2	2	2	2
131°	2	2	2	2	2	2	2	2
132°	2	2	2	2	2	2	2	2
133°	2	2	2	2	2	2	2	2
134°	2	2	2	2	2	2	2	2
135°	2	2	2	2	2	2	2	2
136°	3	2	2	2	2	2	2	2
137°	3	3	2	2	2	2	2	2
138°	3	3	3	2	2	2	2	2
139°	3	3	3	3	2	2	2	2
140°	3	3	3	3	3	2	2	2
141°	3	3	3	3	3	3	2	3
142°	3	3	3	3	3	3	3	3
143°	3	3	3	3	3	3	3	3
144°	3	3	3	3	3	3	3	3
145°	3	3	3	3	3	3	3	3
146°	3	3	3	3	3	3	3	3
147°	3	3	3	3	3	3	3	3
148°	3	3	3	3	3	3	3	3
149°	3	3	3	3	3	3	3	3

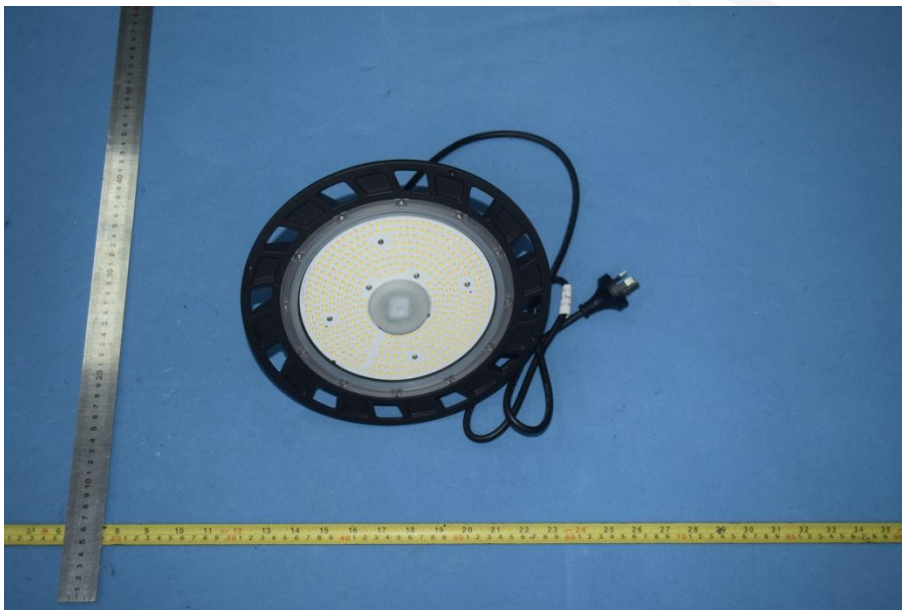
Luminous Intensity (cd) Distribution Data (cont.)

$\begin{matrix} C \\ \backslash \\ Y \end{matrix}$	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
150°	3	3	3	3	3	3	3	3
151°	3	3	3	3	3	3	3	3
152°	3	3	3	3	3	3	3	3
153°	3	3	3	3	3	3	3	3
154°	3	3	3	3	3	3	3	4
155°	3	3	4	4	3	4	3	4
156°	4	3	4	4	4	4	3	4
157°	4	4	4	4	4	4	3	4
158°	4	4	4	4	4	4	4	4
159°	4	4	4	4	4	4	4	4
160°	4	4	4	4	4	4	4	4
161°	4	4	4	4	4	4	4	4
162°	4	4	4	4	4	4	4	4
163°	4	4	4	4	4	4	4	4
164°	4	4	4	4	4	4	4	4
165°	4	4	4	4	4	4	4	4
166°	4	4	4	4	4	4	4	4
167°	4	4	4	4	4	4	4	5
168°	5	4	4	4	4	4	4	5
169°	5	5	4	4	4	4	4	5
170°	5	5	4	4	4	4	4	5
171°	5	5	4	4	4	4	4	5
172°	5	5	5	4	4	4	4	5
173°	5	5	5	5	4	5	4	5
174°	5	5	5	5	5	5	5	5
175°	5	5	5	5	5	5	5	5
176°	6	6	5	5	5	5	5	6
177°	6	6	6	5	5	5	5	6
178°	6	6	6	5	5	5	5	6
179°	6	6	6	6	5	5	6	6
180°	6	6	6	6	6	6	6	6

Zonal Lumen Density Measurement

Deg	Flux (lm)	%	Deg	Flux (lm)	%
0-5	127.8	0.87	0-5	127.8	0.87
5-10	379.1	2.57	0-10	506.9	3.44
10-15	619.1	4.21	0-15	1126.1	7.65
15-20	840.4	5.71	0-20	1966.5	13.36
20-25	1035.3	7.03	0-25	3001.8	20.39
25-30	1196.9	8.14	0-30	4198.6	28.53
30-35	1320.5	8.97	0-35	5519.2	37.50
35-40	1400.9	9.51	0-40	6920.1	47.01
40-45	1428.4	9.71	0-45	8348.5	56.72
45-50	1400.7	9.52	0-50	9749.2	66.24
50-55	1314.5	8.93	0-55	11063.6	75.17
55-60	1161.2	7.89	0-60	12224.9	83.06
60-65	956.2	6.49	0-65	13181.1	89.55
65-70	717.8	4.88	0-70	13898.9	94.43
70-75	463.3	3.15	0-75	14362.2	97.58
75-80	236.7	1.60	0-80	14598.9	99.18
80-85	82.9	0.57	0-85	14681.8	99.75
85-90	18.6	0.12	0-90	14700.4	99.87
90-95	3.7	0.03	0-95	14704.2	99.90
95-100	0.5	0.00	0-100	14704.7	99.90
100-105	0.5	0.01	0-105	14705.2	99.91
105-110	0.6	0.00	0-110	14705.8	99.91
110-115	0.7	0.01	0-115	14706.5	99.92
115-120	0.7	0.00	0-120	14707.2	99.92
120-125	0.8	0.01	0-125	14708.1	99.93
125-130	1.0	0.00	0-130	14709.0	99.93
130-135	1.1	0.01	0-135	14710.1	99.94
135-140	1.2	0.01	0-140	14711.3	99.95
140-145	1.3	0.01	0-145	14712.7	99.96
145-150	1.4	0.01	0-150	14714.1	99.97
150-155	1.3	0.01	0-155	14715.4	99.98
155-160	1.2	0.00	0-160	14716.6	99.98
160-165	1.0	0.01	0-165	14717.6	99.99
165-170	0.7	0.01	0-170	14718.3	100.00
170-175	0.4	0.00	0-175	14718.7	100.00
175-180	0.1	0.00	0-180	14718.9	100.00

6. Product Photo







ULLEDLIGHTING

LED High Bay Light

Model: UL-H80W-HS

Input Voltage: AC100~240V 50/60Hz

Driver Output: DC120V

Power Factor: >0.9

CCT: 5000K Cool White

Sensor: Motion+Daylight+Dimmable

CRI: Ra>70 120°

IP65



Made in China

7. Report Revision

Report Number	Report Date	Contents
R2DG200115800-10	2020-04-22	Original report.
R2DG200115800-10-M1	2020-09-17	Update the product label and add the remote control photo.

FINAL

Directions

1. The information marked “superscript #” is provided by the applicant, the laboratory is not responsible for its authenticity and this information can affect the validity of the result in the test report.
2. Unless otherwise stated the results shown in this test report refer only to the sample(s) tested.
3. Otherwise required by the applicant or Product Regulations, Decision Rule in this report did not consider the uncertainty.
4. The extended uncertainty given in this report is obtained by combining the standard uncertainty times the coverage factor K with the 95% confidence interval.
5. This report cannot be reproduced except in full, without prior written approval of the Company.
6. This report is valid only with a valid digital signature. The digital signature may be available only under the Adobe software above version 7.0.

*****END OF REPORT*****