

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-H100W-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:	R2DG200115801-10-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 R2DG200115801-10 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-H100W-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: 100W
Nominal CCT: 5000K
Nominal Lumen Output: 19000 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**

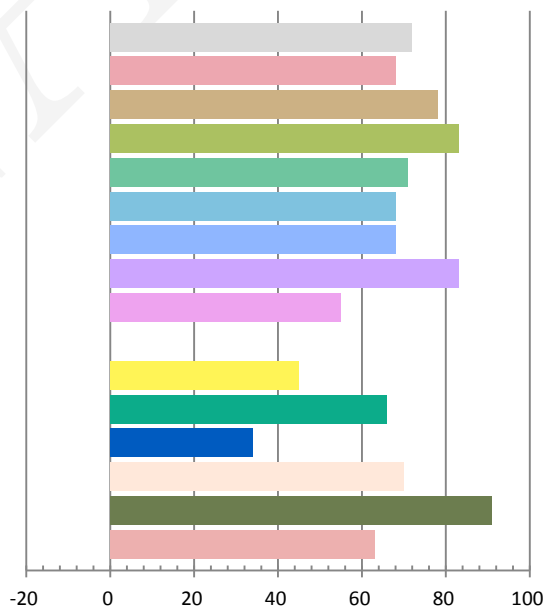
Photometric and Electrical Measurement Result

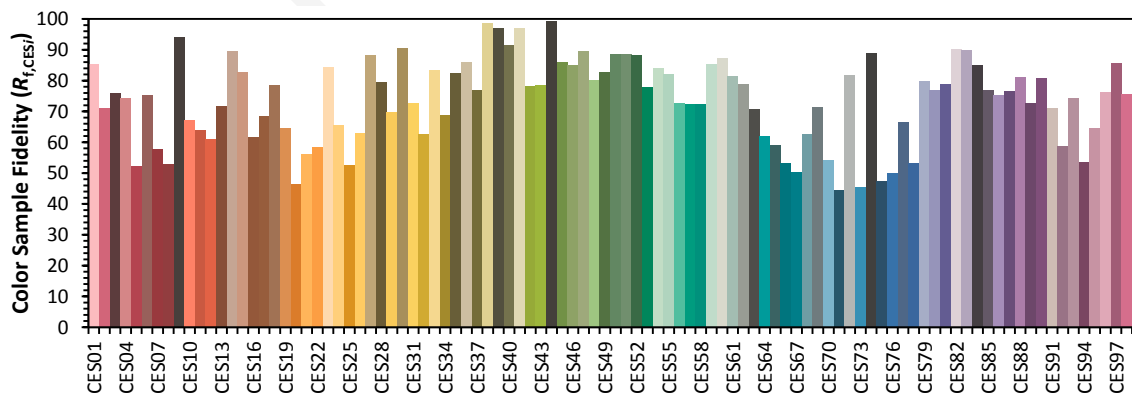
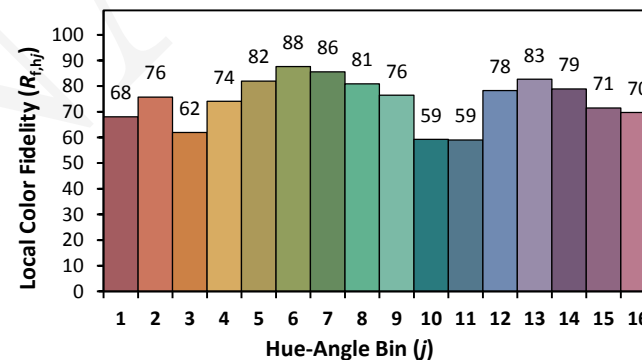
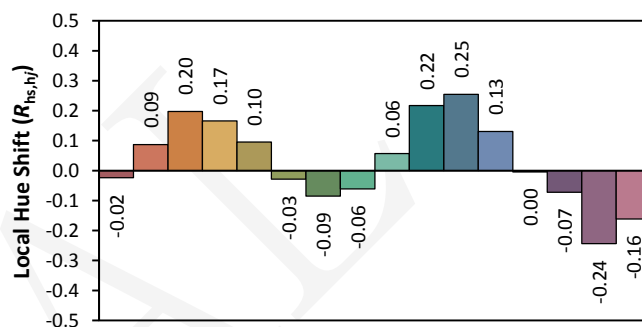
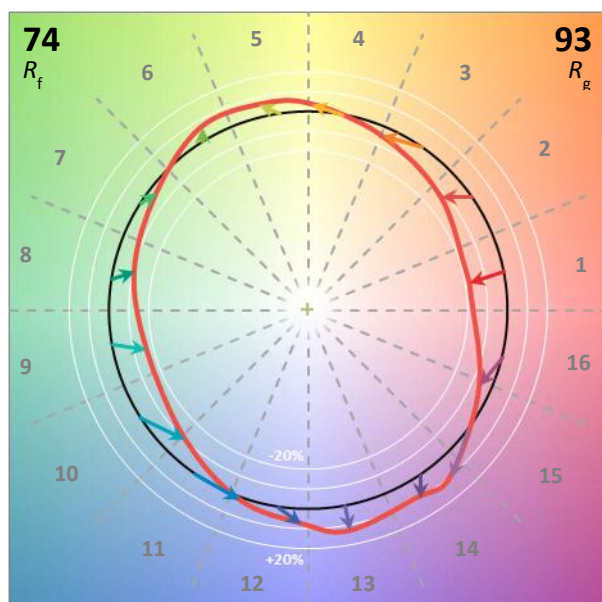
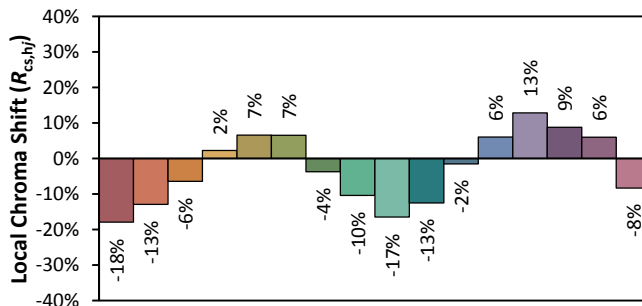
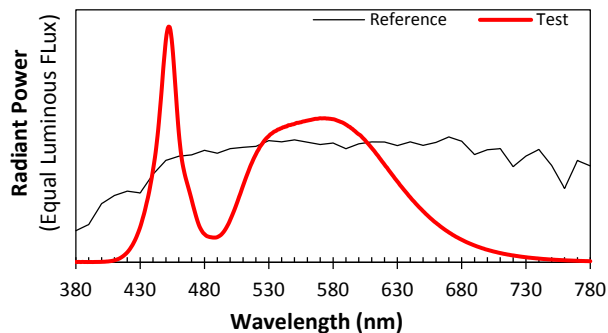
Voltage (V)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Luminous Flux(lm)	Efficacy (lm/W)
240.0	50	0.4171	94.41	0.9432	17951	190.14

Radiant Flux (W)	CCT (K)	Duv	x	y	u'	v'
51.934	4902	0.00506	0.3491	0.3651	0.2089	0.4917

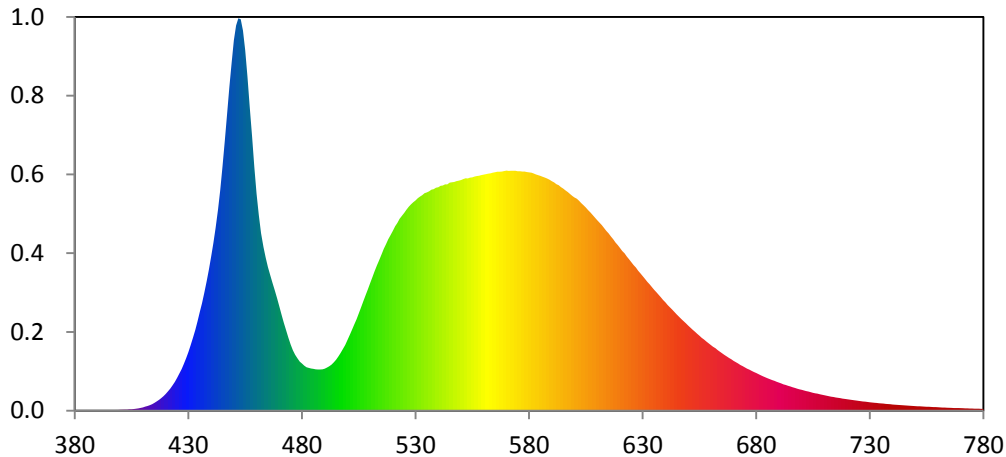
Color Rendering Index

Ra			
71.8			
R1	R2	R3	R4
68	78	83	71
R5	R6	R7	R8
68	68	83	55
R9	R10	R11	R12
0	45	66	34
R13	R14	R15	
70	91	63	





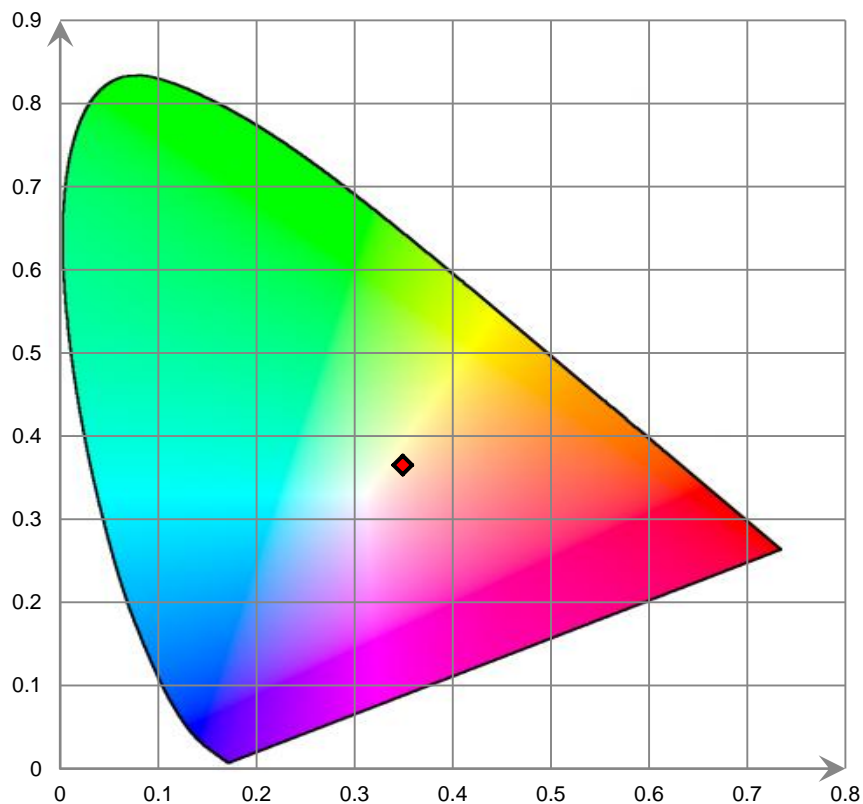
Relative Spectral Power Distribution



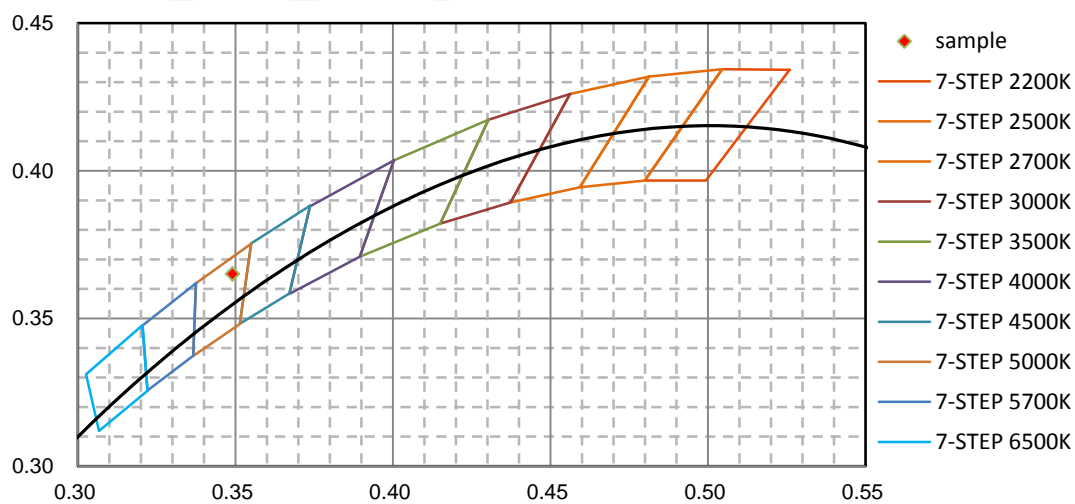
nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
380	8.681E-01	421	2.413E+01	462	2.219E+02	503	1.075E+02	544	2.829E+02
381	6.262E-01	422	2.767E+01	463	2.047E+02	504	1.144E+02	545	2.852E+02
382	8.992E-01	423	3.182E+01	464	1.914E+02	505	1.217E+02	546	2.856E+02
383	7.537E-01	424	3.603E+01	465	1.796E+02	506	1.290E+02	547	2.860E+02
384	6.086E-01	425	4.104E+01	466	1.696E+02	507	1.368E+02	548	2.870E+02
385	9.410E-01	426	4.627E+01	467	1.601E+02	508	1.440E+02	549	2.874E+02
386	7.716E-01	427	5.215E+01	468	1.504E+02	509	1.519E+02	550	2.882E+02
387	6.647E-01	428	5.880E+01	469	1.407E+02	510	1.595E+02	551	2.895E+02
388	7.820E-01	429	6.578E+01	470	1.306E+02	511	1.669E+02	552	2.905E+02
389	6.306E-01	430	7.329E+01	471	1.200E+02	512	1.745E+02	553	2.904E+02
390	7.481E-01	431	8.194E+01	472	1.101E+02	513	1.816E+02	554	2.913E+02
391	6.626E-01	432	9.161E+01	473	1.002E+02	514	1.884E+02	555	2.916E+02
392	7.227E-01	433	1.010E+02	474	9.104E+01	515	1.954E+02	556	2.927E+02
393	6.231E-01	434	1.117E+02	475	8.271E+01	516	2.023E+02	557	2.934E+02
394	7.261E-01	435	1.234E+02	476	7.552E+01	517	2.081E+02	558	2.938E+02
395	7.819E-01	436	1.343E+02	477	6.988E+01	518	2.143E+02	559	2.946E+02
396	8.459E-01	437	1.472E+02	478	6.530E+01	519	2.198E+02	560	2.951E+02
397	8.486E-01	438	1.617E+02	479	6.132E+01	520	2.250E+02	561	2.957E+02
398	8.881E-01	439	1.763E+02	480	5.886E+01	521	2.305E+02	562	2.962E+02
399	9.294E-01	440	1.926E+02	481	5.629E+01	522	2.346E+02	563	2.967E+02
400	1.083E+00	441	2.095E+02	482	5.446E+01	523	2.399E+02	564	2.974E+02
401	1.186E+00	442	2.285E+02	483	5.361E+01	524	2.436E+02	565	2.980E+02
402	1.264E+00	443	2.512E+02	484	5.273E+01	525	2.473E+02	566	2.987E+02
403	1.441E+00	444	2.758E+02	485	5.233E+01	526	2.513E+02	567	2.988E+02
404	1.725E+00	445	3.052E+02	486	5.183E+01	527	2.548E+02	568	2.989E+02
405	1.838E+00	446	3.363E+02	487	5.160E+01	528	2.578E+02	569	2.995E+02
406	2.224E+00	447	3.691E+02	488	5.159E+01	529	2.605E+02	570	3.000E+02
407	2.552E+00	448	4.047E+02	489	5.176E+01	530	2.629E+02	571	2.997E+02
408	2.988E+00	449	4.344E+02	490	5.256E+01	531	2.658E+02	572	2.998E+02
409	3.543E+00	450	4.628E+02	491	5.396E+01	532	2.677E+02	573	2.999E+02
410	4.236E+00	451	4.815E+02	492	5.557E+01	533	2.696E+02	574	2.999E+02
411	5.086E+00	452	4.904E+02	493	5.756E+01	534	2.718E+02	575	2.993E+02
412	6.004E+00	453	4.893E+02	494	6.051E+01	535	2.730E+02	576	2.994E+02
413	7.022E+00	454	4.751E+02	495	6.376E+01	536	2.743E+02	577	2.990E+02
414	8.202E+00	455	4.504E+02	496	6.769E+01	537	2.764E+02	578	2.988E+02
415	9.824E+00	456	4.176E+02	497	7.205E+01	538	2.770E+02	579	2.983E+02
416	1.155E+01	457	3.803E+02	498	7.695E+01	539	2.786E+02	580	2.980E+02
417	1.349E+01	458	3.427E+02	499	8.216E+01	540	2.794E+02	581	2.975E+02
418	1.573E+01	459	3.046E+02	500	8.834E+01	541	2.811E+02	582	2.965E+02
419	1.818E+01	460	2.711E+02	501	9.451E+01	542	2.815E+02	583	2.954E+02
420	2.085E+01	461	2.444E+02	502	1.008E+02	543	2.829E+02	584	2.944E+02

nm	mW	nm	mW	nm	mW	nm	mW	nm	mW
585	2.934E+02	626	1.822E+02	667	6.789E+01	708	2.051E+01	749	5.958E+00
586	2.923E+02	627	1.788E+02	668	6.601E+01	709	1.990E+01	750	5.804E+00
587	2.914E+02	628	1.750E+02	669	6.434E+01	710	1.932E+01	751	5.621E+00
588	2.901E+02	629	1.717E+02	670	6.241E+01	711	1.876E+01	752	5.498E+00
589	2.886E+02	630	1.683E+02	671	6.074E+01	712	1.813E+01	753	5.249E+00
590	2.868E+02	631	1.650E+02	672	5.913E+01	713	1.762E+01	754	5.147E+00
591	2.852E+02	632	1.611E+02	673	5.724E+01	714	1.718E+01	755	4.979E+00
592	2.831E+02	633	1.580E+02	674	5.581E+01	715	1.662E+01	756	4.854E+00
593	2.819E+02	634	1.547E+02	675	5.410E+01	716	1.612E+01	757	4.721E+00
594	2.795E+02	635	1.513E+02	676	5.260E+01	717	1.571E+01	758	4.561E+00
595	2.778E+02	636	1.482E+02	677	5.132E+01	718	1.516E+01	759	4.492E+00
596	2.753E+02	637	1.450E+02	678	4.977E+01	719	1.469E+01	760	4.301E+00
597	2.733E+02	638	1.418E+02	679	4.841E+01	720	1.437E+01	761	4.187E+00
598	2.708E+02	639	1.383E+02	680	4.705E+01	721	1.399E+01	762	4.005E+00
599	2.685E+02	640	1.354E+02	681	4.575E+01	722	1.349E+01	763	3.911E+00
600	2.665E+02	641	1.321E+02	682	4.435E+01	723	1.314E+01	764	3.854E+00
601	2.649E+02	642	1.291E+02	683	4.304E+01	724	1.272E+01	765	3.723E+00
602	2.623E+02	643	1.264E+02	684	4.178E+01	725	1.231E+01	766	3.639E+00
603	2.593E+02	644	1.232E+02	685	4.062E+01	726	1.194E+01	767	3.462E+00
604	2.567E+02	645	1.203E+02	686	3.948E+01	727	1.157E+01	768	3.443E+00
605	2.539E+02	646	1.175E+02	687	3.836E+01	728	1.129E+01	769	3.292E+00
606	2.505E+02	647	1.146E+02	688	3.728E+01	729	1.088E+01	770	3.176E+00
607	2.478E+02	648	1.120E+02	689	3.615E+01	730	1.058E+01	771	3.090E+00
608	2.446E+02	649	1.093E+02	690	3.514E+01	731	1.024E+01	772	2.937E+00
609	2.414E+02	650	1.065E+02	691	3.410E+01	732	9.894E+00	773	2.920E+00
610	2.382E+02	651	1.040E+02	692	3.304E+01	733	9.677E+00	774	2.775E+00
611	2.350E+02	652	1.011E+02	693	3.216E+01	734	9.387E+00	775	2.765E+00
612	2.319E+02	653	9.871E+01	694	3.122E+01	735	9.094E+00	776	2.623E+00
613	2.282E+02	654	9.616E+01	695	3.034E+01	736	8.853E+00	777	2.590E+00
614	2.247E+02	655	9.368E+01	696	2.929E+01	737	8.607E+00	778	2.564E+00
615	2.216E+02	656	9.121E+01	697	2.866E+01	738	8.308E+00	779	2.411E+00
616	2.177E+02	657	8.894E+01	698	2.756E+01	739	8.137E+00	780	2.322E+00
617	2.142E+02	658	8.649E+01	699	2.678E+01	740	7.837E+00		
618	2.104E+02	659	8.424E+01	700	2.610E+01	741	7.584E+00		
619	2.071E+02	660	8.226E+01	701	2.533E+01	742	7.336E+00		
620	2.035E+02	661	8.001E+01	702	2.459E+01	743	7.093E+00		
621	1.998E+02	662	7.805E+01	703	2.391E+01	744	6.890E+00		
622	1.968E+02	663	7.579E+01	704	2.314E+01	745	6.722E+00		
623	1.928E+02	664	7.372E+01	705	2.246E+01	746	6.523E+00		
624	1.893E+02	665	7.178E+01	706	2.182E+01	747	6.301E+00		
625	1.858E+02	666	6.979E+01	707	2.126E+01	748	6.122E+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**

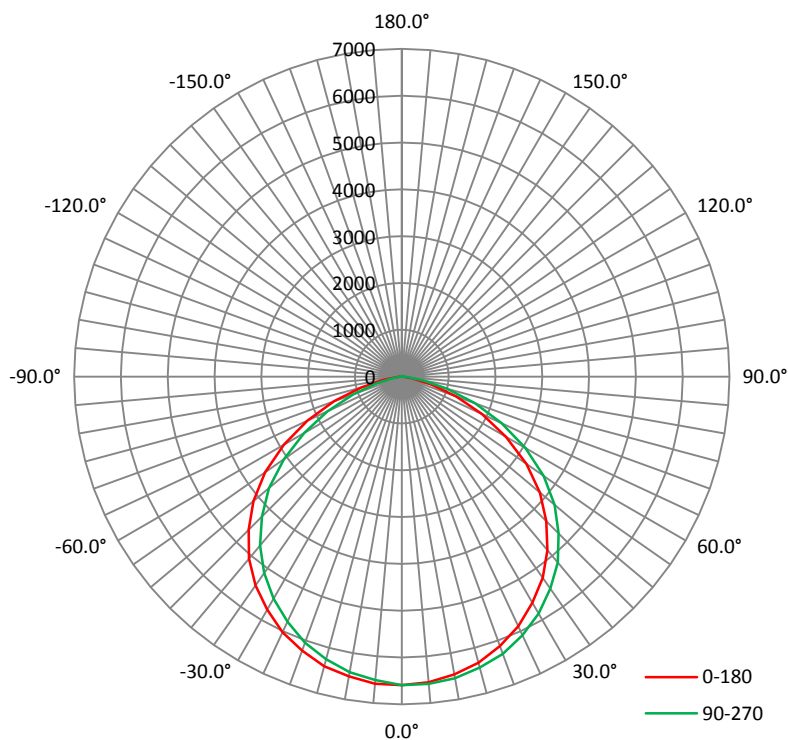
Electrical Measurement

Input Voltage (V)	Frequency (Hz)	Input Current (A)	Power (W)	Power Factor
240.01	50	0.4184	94.500	0.9410

Photometric Measurement

Luminous Flux (lm)	Efficacy (lm/W)	I_{max} (cd)	S/MH (C0/180)	S/MH (C90/270)
17985.5	190.32	6608	1.26	1.31

Luminous Intensity Distribution



	C0/180	C45/225	C90/270	C135/315	AVG.
Beam Angle (50% I_{max}):	111.6	111.4	111.3	111.3	111.4
Field Angle (10% I_{max}):	151.9	151.8	151.8	152.0	151.9

Luminous Intensity (cd) Distribution Data

C Y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
0°	6589	6589	6589	6589	6589	6589	6589	6589
1°	6604	6592	6580	6567	6558	6580	6568	6584
2°	6596	6581	6580	6555	6559	6553	6557	6574
3°	6587	6582	6556	6540	6550	6556	6539	6560
4°	6590	6552	6553	6529	6523	6540	6532	6548
5°	6586	6548	6555	6516	6506	6520	6514	6539
6°	6574	6540	6527	6494	6500	6508	6489	6519
7°	6560	6506	6507	6472	6476	6484	6481	6490
8°	6542	6510	6484	6453	6441	6466	6456	6470
9°	6519	6497	6463	6430	6432	6439	6426	6454
10°	6503	6474	6443	6428	6413	6414	6422	6432
11°	6492	6457	6422	6391	6378	6387	6377	6407
12°	6476	6433	6405	6360	6351	6348	6350	6380
13°	6451	6403	6373	6339	6322	6322	6315	6357
14°	6433	6368	6342	6302	6284	6293	6290	6314
15°	6405	6348	6323	6267	6250	6257	6247	6293
16°	6387	6321	6277	6239	6223	6218	6210	6252
17°	6340	6270	6243	6195	6182	6181	6186	6216
18°	6311	6249	6198	6156	6126	6139	6123	6175
19°	6265	6214	6167	6109	6091	6086	6090	6130
20°	6229	6171	6124	6081	6049	6045	6057	6093
21°	6201	6131	6081	6023	5996	5989	5993	6052
22°	6156	6087	6041	5978	5949	5930	5940	5991
23°	6111	6039	5985	5929	5896	5885	5885	5941
24°	6072	5977	5933	5870	5830	5833	5833	5891
25°	6027	5939	5887	5815	5778	5772	5775	5843
26°	5984	5891	5831	5757	5720	5712	5713	5779
27°	5922	5823	5766	5701	5663	5652	5665	5719
28°	5864	5777	5708	5642	5594	5595	5598	5655
29°	5796	5722	5644	5577	5537	5527	5530	5590
30°	5746	5672	5587	5522	5478	5463	5478	5526
31°	5695	5610	5519	5445	5404	5400	5406	5465
32°	5634	5550	5463	5378	5339	5320	5337	5389
33°	5570	5485	5392	5310	5274	5267	5265	5323
34°	5510	5415	5324	5234	5197	5196	5193	5248
35°	5448	5353	5266	5167	5123	5120	5114	5176
36°	5379	5284	5180	5089	5051	5047	5038	5098
37°	5307	5201	5109	5007	4971	4968	4971	5017
38°	5238	5134	5021	4921	4880	4879	4884	4935
39°	5147	5061	4941	4829	4798	4783	4788	4849
40°	5076	4973	4854	4752	4711	4696	4710	4754
41°	4993	4887	4759	4649	4605	4597	4608	4663
42°	4903	4792	4676	4560	4518	4502	4509	4567
43°	4807	4704	4573	4464	4423	4407	4412	4473
44°	4717	4604	4485	4366	4318	4312	4326	4378
45°	4625	4514	4400	4274	4224	4222	4219	4291
46°	4530	4416	4290	4177	4127	4121	4118	4180
47°	4434	4307	4191	4076	4032	4024	4027	4081
48°	4340	4220	4088	3974	3916	3909	3915	3977
49°	4232	4119	3992	3873	3815	3801	3812	3872

Luminous Intensity (cd) Distribution Data

C y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
50°	4135	4017	3880	3766	3704	3689	3700	3766
51°	4032	3913	3763	3639	3573	3563	3571	3645
52°	3927	3791	3648	3521	3453	3436	3445	3525
53°	3797	3664	3519	3391	3327	3313	3316	3402
54°	3679	3544	3396	3267	3201	3191	3197	3273
55°	3562	3414	3280	3139	3071	3058	3064	3150
56°	3433	3286	3144	3014	2947	2936	2942	3017
57°	3299	3149	3015	2880	2817	2803	2815	2885
58°	3173	3027	2884	2750	2675	2666	2672	2743
59°	3039	2898	2752	2611	2544	2534	2539	2608
60°	2907	2757	2606	2480	2407	2395	2411	2469
61°	2763	2623	2472	2349	2272	2266	2274	2337
62°	2626	2484	2343	2220	2146	2131	2144	2203
63°	2484	2352	2209	2086	2014	2006	2010	2069
64°	2351	2216	2076	1948	1879	1878	1879	1936
65°	2223	2088	1941	1816	1750	1742	1746	1807
66°	2084	1957	1805	1688	1625	1617	1614	1676
67°	1946	1818	1673	1549	1485	1474	1475	1541
68°	1814	1686	1536	1419	1353	1343	1340	1402
69°	1680	1553	1405	1285	1225	1211	1214	1269
70°	1538	1416	1272	1162	1098	1083	1092	1135
71°	1396	1283	1141	1034	978	966	971	1011
72°	1262	1146	1019	916	861	844	854	889
73°	1130	1024	905	802	755	741	743	779
74°	1010	903	793	697	651	633	641	674
75°	892	790	685	598	555	541	545	572
76°	777	682	585	514	475	459	464	490
77°	665	578	502	432	395	378	383	408
78°	566	494	420	349	315	297	302	326
79°	481	409	337	280	245	228	233	258
80°	396	325	265	218	188	175	180	198
81°	311	257	205	163	139	128	131	144
82°	240	193	155	121	104	96	94	103
83°	183	143	113	89	76	69	69	73
84°	130	105	81	63	54	57	57	54
85°	92	74	58	52	44	44	44	45
86°	65	53	48	41	35	32	32	36
87°	54	44	38	30	27	25	25	28
88°	44	35	28	23	20	18	18	20
89°	34	27	21	16	15	14	14	15
90°	26	20	15	12	11	10	10	11
91°	19	15	11	8	7	6	6	7
92°	15	11	7	6	4	4	3	5
93°	10	8	5	4	1	1	1	3
94°	7	5	3	1	1	1	1	1
95°	4	1	1	1	1	1	1	1
96°	1	1	1	1	1	2	1	1
97°	1	1	1	1	2	2	2	2
98°	1	1	1	2	2	2	2	2
99°	1	1	2	2	2	2	2	2

Luminous Intensity (cd) Distribution Data

C y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
100°	1	1	2	2	2	2	2	2
101°	1	2	2	2	2	2	2	2
102°	2	2	2	2	2	2	2	2
103°	2	2	2	2	2	2	2	2
104°	2	2	2	2	2	2	2	2
105°	2	2	2	2	2	2	2	2
106°	2	2	2	2	2	2	2	2
107°	2	2	2	2	2	2	2	2
108°	2	2	2	2	2	2	2	2
109°	2	2	2	2	2	2	2	2
110°	2	2	2	2	2	2	2	2
111°	2	2	2	2	2	2	2	2
112°	2	2	2	2	2	2	2	2
113°	2	2	2	2	2	2	2	2
114°	2	2	2	2	2	2	2	2
115°	2	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	3	3	3	2
121°	2	2	2	3	3	3	3	3
122°	2	3	3	3	3	3	3	3
123°	3	3	3	3	3	3	3	3
124°	3	3	3	3	3	3	3	3
125°	3	3	3	3	3	3	3	3
126°	3	3	3	3	3	3	3	3
127°	3	3	3	3	3	3	3	3
128°	3	3	3	3	4	3	3	3
129°	3	3	3	4	4	4	4	3
130°	3	4	4	4	4	4	4	4
131°	4	4	4	4	4	4	4	4
132°	4	4	4	4	4	4	4	4
133°	4	4	4	4	4	4	4	4
134°	4	4	4	5	5	5	4	4
135°	4	5	5	5	5	5	5	4
136°	5	5	5	5	5	5	5	5
137°	5	5	5	5	5	5	5	5
138°	5	5	5	5	6	6	5	5
139°	5	5	6	6	6	6	6	5
140°	5	6	6	6	6	6	6	6
141°	6	6	6	6	6	6	6	6
142°	6	6	6	6	7	7	6	6
143°	6	7	7	7	7	7	7	6
144°	6	7	7	7	7	7	7	7
145°	7	7	7	8	8	8	7	7
146°	7	7	8	8	8	8	8	7
147°	7	8	8	8	8	8	8	7
148°	7	8	8	8	9	8	8	8
149°	8	8	8	9	9	9	8	8

Luminous Intensity (cd) Distribution Data

C y	0°	22.5°	45°	67.5°	90°	112.5°	135°	157.5°
150°	8	8	9	9	9	9	8	8
151°	8	9	9	9	9	9	9	8
152°	8	9	9	9	9	9	9	8
153°	9	9	9	9	9	9	9	9
154°	9	9	9	10	10	10	9	9
155°	9	10	9	10	10	10	9	9
156°	9	10	10	10	10	10	10	9
157°	9	10	10	10	10	10	10	9
158°	10	10	10	10	10	10	10	9
159°	10	10	10	10	10	10	10	9
160°	10	10	10	10	10	10	10	9
161°	10	10	10	10	10	10	10	9
162°	10	10	10	10	10	10	10	9
163°	10	10	10	10	10	10	10	9
164°	10	10	10	10	10	10	10	9
165°	10	10	10	10	10	10	10	9
166°	10	10	9	10	10	10	10	9
167°	10	9	9	9	10	9	9	9
168°	9	9	9	9	9	9	9	9
169°	9	9	9	9	9	9	9	9
170°	9	9	9	9	9	9	9	9
171°	9	9	9	9	9	9	9	9
172°	9	9	9	9	8	9	9	9
173°	9	9	9	8	8	8	8	9
174°	9	9	8	8	8	8	8	8
175°	9	9	8	8	8	8	8	8
176°	9	8	8	8	8	8	8	8
177°	8	8	8	8	8	8	8	8
178°	8	8	8	7	7	7	8	8
179°	8	8	7	7	7	7	7	8
180°	8	7	7	7	7	7	7	7

Luminous Intensity (cd) Distribution Data (cont.)

C Y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
0°	6589	6589	6589	6589	6589	6589	6589	6589
1°	6586	6583	6590	6574	6592	6595	6584	6594
2°	6581	6582	6575	6586	6583	6608	6594	6590
3°	6584	6560	6583	6582	6598	6605	6601	6596
4°	6576	6566	6581	6575	6595	6607	6589	6595
5°	6556	6555	6579	6573	6587	6606	6580	6598
6°	6535	6533	6556	6561	6576	6598	6583	6578
7°	6511	6523	6548	6551	6575	6582	6563	6569
8°	6503	6506	6543	6545	6568	6563	6559	6553
9°	6486	6500	6515	6527	6539	6565	6542	6538
10°	6460	6482	6502	6521	6542	6545	6536	6521
11°	6428	6454	6486	6495	6518	6527	6513	6506
12°	6411	6427	6458	6477	6494	6513	6495	6485
13°	6393	6385	6441	6462	6485	6499	6487	6470
14°	6371	6382	6412	6440	6470	6482	6455	6451
15°	6329	6355	6395	6414	6436	6458	6429	6436
16°	6287	6309	6368	6387	6407	6433	6417	6395
17°	6249	6287	6334	6359	6392	6403	6379	6368
18°	6215	6254	6311	6330	6367	6366	6358	6340
19°	6175	6210	6261	6301	6325	6351	6328	6307
20°	6127	6173	6223	6272	6306	6313	6304	6266
21°	6082	6130	6185	6221	6264	6273	6260	6232
22°	6045	6083	6140	6182	6213	6245	6223	6197
23°	5992	6031	6102	6143	6189	6206	6189	6157
24°	5948	5990	6051	6106	6143	6156	6133	6109
25°	5885	5937	6019	6057	6095	6123	6096	6071
26°	5829	5871	5950	6005	6039	6072	6038	6019
27°	5764	5822	5899	5957	5998	6018	5992	5972
28°	5706	5762	5848	5905	5947	5955	5945	5914
29°	5650	5709	5786	5848	5882	5917	5890	5871
30°	5580	5645	5716	5801	5844	5859	5849	5805
31°	5511	5582	5662	5727	5778	5794	5776	5747
32°	5453	5525	5592	5669	5710	5751	5721	5690
33°	5392	5456	5538	5605	5658	5703	5667	5628
34°	5322	5393	5471	5543	5598	5618	5593	5559
35°	5248	5325	5415	5475	5529	5562	5535	5505
36°	5170	5245	5334	5401	5464	5503	5474	5425
37°	5088	5180	5263	5333	5406	5432	5399	5356
38°	5006	5105	5196	5255	5331	5355	5329	5285
39°	4927	5025	5113	5188	5261	5294	5254	5224
40°	4841	4942	5032	5114	5186	5217	5191	5131
41°	4741	4858	4949	5021	5104	5134	5105	5052
42°	4653	4757	4861	4941	5011	5058	5019	4967
43°	4555	4664	4769	4850	4929	4969	4944	4873
44°	4466	4570	4674	4767	4837	4873	4845	4786
45°	4364	4473	4584	4660	4738	4785	4756	4704
46°	4263	4366	4474	4563	4640	4690	4666	4597
47°	4165	4279	4377	4473	4556	4597	4567	4511
48°	4065	4181	4284	4364	4458	4491	4473	4410
49°	3959	4075	4178	4273	4364	4406	4372	4320

Luminous Intensity (cd) Distribution Data (cont.)

C y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
50°	3850	3969	4076	4176	4261	4302	4280	4207
51°	3736	3864	3972	4063	4153	4194	4171	4106
52°	3628	3752	3860	3957	4040	4099	4061	4005
53°	3498	3633	3754	3853	3943	3992	3958	3881
54°	3378	3505	3623	3742	3832	3875	3835	3765
55°	3249	3375	3501	3608	3702	3745	3716	3643
56°	3117	3242	3369	3477	3572	3625	3584	3514
57°	2984	3119	3242	3355	3446	3491	3453	3383
58°	2852	2987	3117	3218	3316	3354	3326	3258
59°	2712	2852	2977	3085	3184	3232	3193	3133
60°	2570	2711	2843	2955	3047	3097	3064	2990
61°	2433	2572	2701	2814	2911	2958	2927	2856
62°	2300	2436	2557	2673	2768	2820	2788	2721
63°	2169	2305	2422	2532	2630	2676	2651	2581
64°	2035	2171	2283	2399	2488	2534	2510	2445
65°	1893	2037	2154	2258	2351	2400	2378	2311
66°	1759	1897	2010	2124	2210	2266	2242	2172
67°	1632	1766	1873	1987	2074	2133	2104	2035
68°	1499	1634	1741	1841	1933	1990	1963	1896
69°	1361	1497	1608	1712	1800	1852	1827	1762
70°	1234	1356	1466	1578	1664	1717	1693	1619
71°	1107	1230	1329	1430	1519	1575	1547	1477
72°	981	1103	1204	1292	1376	1436	1406	1343
73°	863	977	1079	1167	1250	1296	1277	1219
74°	754	857	954	1043	1123	1169	1151	1094
75°	645	743	831	918	996	1043	1025	970
76°	546	635	719	798	872	916	902	847
77°	458	537	613	691	762	802	783	730
78°	376	447	518	580	648	690	676	625
79°	298	363	429	490	551	583	573	530
80°	233	285	346	407	462	488	482	442
81°	184	217	272	325	374	400	393	358
82°	134	172	204	253	297	317	313	281
83°	86	126	161	189	226	243	241	217
84°	60	80	118	142	179	193	191	171
85°	48	59	76	95	131	142	140	124
86°	39	46	57	71	83	92	89	79
87°	32	38	45	55	63	66	67	59
88°	24	30	37	43	48	50	50	46
89°	19	22	29	35	40	42	42	39
90°	14	18	22	27	32	34	34	31
91°	9	13	17	20	24	26	26	23
92°	5	8	12	16	19	19	19	16
93°	2	3	7	11	14	14	14	8
94°	1	1	4	6	9	10	10	0
95°	1	1	1	3	5	6	5	0
96°	1	1	1	1	2	2	1	0
97°	1	1	1	1	1	1	0	0
98°	1	1	1	1	1	1	1	1
99°	1	1	1	1	1	1	1	1

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	1
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°	2	1	1	1	1	1	1	1
117°	2	1	1	1	1	1	1	1
118°	2	2	2	1	1	1	1	1
119°	2	2	2	2	1	1	1	1
120°	2	2	2	2	2	1	1	1
121°	2	2	2	2	2	2	1	1
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	2	2
126°	2	2	2	2	2	2	2	2
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°	3	2	2	2	2	2	2	2
131°	3	3	2	2	2	2	2	2
132°	3	3	2	2	2	2	2	2
133°	3	3	3	3	2	2	2	2
134°	3	3	3	3	2	3	2	3
135°	3	3	3	3	3	3	3	3
136°	3	3	3	3	3	3	3	3
137°	3	3	3	3	3	3	3	3
138°	3	3	3	3	3	3	3	3
139°	3	3	3	3	3	3	3	3
140°	3	3	3	3	3	3	3	3
141°	3	3	3	3	3	3	3	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°	4	3	3	4	3	3	3	3
146°	4	3	4	4	4	3	3	3
147°	4	3	4	4	4	4	3	4
148°	4	4	4	4	4	4	4	4
149°	4	4	4	4	4	4	4	4

Luminous Intensity (cd) Distribution Data (cont.)

C y	180°	202.5°	225°	247.5°	270°	292.5°	315°	337.5°
150°	4	4	4	4	4	4	4	4
151°	4	4	4	4	4	4	4	4
152°	4	4	4	4	4	4	4	4
153°	4	4	4	4	4	4	4	4
154°	4	4	4	4	4	4	4	4
155°	4	4	4	4	4	4	4	4
156°	4	4	4	4	4	4	4	5
157°	5	4	5	4	4	4	4	5
158°	5	5	5	5	4	5	4	5
159°	5	5	5	5	5	5	4	5
160°	5	5	5	5	5	5	4	5
161°	5	5	5	5	5	5	5	5
162°	5	5	5	5	5	5	5	5
163°	5	5	5	5	5	5	5	5
164°	5	5	5	5	5	5	5	5
165°	5	5	5	5	5	5	5	5
166°	5	5	5	5	5	5	5	5
167°	5	5	5	5	5	5	5	6
168°	6	6	5	5	5	5	5	6
169°	6	6	5	5	5	5	5	6
170°	6	6	5	5	5	5	5	6
171°	6	6	5	5	5	5	5	6
172°	6	6	6	5	5	5	5	6
173°	6	6	6	6	5	5	5	6
174°	6	6	6	6	6	6	6	6
175°	7	7	6	6	6	6	6	7
176°	7	7	7	6	6	6	6	7
177°	7	7	7	6	6	6	6	7
178°	7	7	7	7	6	6	7	7
179°	8	8	7	7	7	7	7	7
180°	8	8	7	7	7	7	7	7

Zonal Lumen Density Measurement

Deg	Flux (lm)	%	Deg	Flux (lm)	%
0-5	157.1	0.87	0-5	157.1	0.87
5-10	466.0	2.59	0-10	623.1	3.46
10-15	760.8	4.23	0-15	1383.9	7.69
15-20	1032.4	5.74	0-20	2416.2	13.43
20-25	1271.0	7.07	0-25	3687.2	20.50
25-30	1467.9	8.16	0-30	5155.1	28.66
30-35	1618.6	9.00	0-35	6773.7	37.66
35-40	1716.0	9.54	0-40	8489.8	47.20
40-45	1746.9	9.72	0-45	10236.7	56.92
45-50	1712.5	9.52	0-50	11949.1	66.44
50-55	1605.9	8.93	0-55	13555.0	75.37
55-60	1415.9	7.87	0-60	14970.9	83.24
60-65	1162.1	6.46	0-65	16133.0	89.70
65-70	869.2	4.83	0-70	17002.2	94.53
70-75	556.8	3.10	0-75	17559.0	97.63
75-80	283.5	1.58	0-80	17842.5	99.21
80-85	97.0	0.53	0-85	17939.5	99.74
85-90	22.9	0.13	0-90	17962.4	99.87
90-95	5.1	0.03	0-95	17967.5	99.90
95-100	0.6	0.00	0-100	17968.2	99.90
100-105	0.7	0.01	0-105	17968.8	99.91
105-110	0.7	0.00	0-110	17969.6	99.91
110-115	0.8	0.01	0-115	17970.4	99.92
115-120	0.9	0.00	0-120	17971.3	99.92
120-125	1.0	0.01	0-125	17972.3	99.93
125-130	1.2	0.00	0-130	17973.5	99.93
130-135	1.3	0.01	0-135	17974.8	99.94
135-140	1.5	0.01	0-140	17976.3	99.95
140-145	1.6	0.01	0-145	17977.9	99.96
145-150	1.7	0.01	0-150	17979.6	99.97
150-155	1.6	0.01	0-155	17981.2	99.98
155-160	1.5	0.00	0-160	17982.7	99.98
160-165	1.2	0.01	0-165	17983.9	99.99
165-170	0.9	0.01	0-170	17984.8	100.00
170-175	0.5	0.00	0-175	17985.3	100.00
175-180	0.2	0.00	0-180	17985.5	100.00

6. Product Photo







ULLEDLIGHTING

LED High Bay Light

Model: UL-H100W-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
R2DG200115801-10	2020-04-22	Original report.
R2DG200115801-10-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*****