



UL-CCIC Company Limited
No.2 Chengwan Road,
Suzhou Industrial Park
Suzhou 215122, China
86-512-68086400



Photometric Test Report

Relevant Standards

IES LM-79-2008

Prepared For

P.Q.L., Inc.

2285 Ward Avenue
Simi Valley, CA 93065

Catalog Number

55226

Project Number

4787655531

Report Number

4787655531_12

Test Date

10/24/2016-10/25/2016

Issue Date

11/3/2016

Prepared By

Jonathan Xu

Jonathan Xu

Approved By

Duff Yang

Duff Yang

The results contained in this report pertain only to the tested sample.

This report shall not be reproduced, except in full, without written approval of Underwriters Laboratories.

This report must not be used by the client to claim product certification, approval, or endorsement by NVLAP, NIST, or any agency of the Federal Government.



UL-CCIC Company Limited
No.2 Chengwan Road,
Suzhou Industrial Park
Suzhou 215122, China
86-512-68086400



1.0 Test List

Test Item	Test	Test Date	Model Number	Tests Conducted By
1	Integrating Sphere Test for the Lower CCT	10/24/2016	55226	Elvis Wu
2	Goniophotometer Test	10/25/2016	55226	Elvis Wu

Remark (if any)

1. UL test equipment information is recorded on Meter Use in UL's Laboratory Project Management (LPM) database.



UL-CCIC Company Limited
No.2 Chengwan Road,
Suzhou Industrial Park
Suzhou 215122, China
86-512-68086400



2.0 Production Description

Luminaire Description: High-bay Luminaires for Commercial and Industrial Buildings

Model Number: 55226

Rated Voltage: 120~277V

Frequency: 50/60 Hz

LED Packagr: STWxA2PD-xx

Photos of Luminaire Characteristics





3.0 LM-79 Measurement and Test Results

3.1 Integrating Sphere Test for the lower CCT

Model No.	55226		Sample ID.	613669-002	
Driver No.	N/A	Opreate time (Min.)	80	Stabilization time (Min.)	70

Test Method

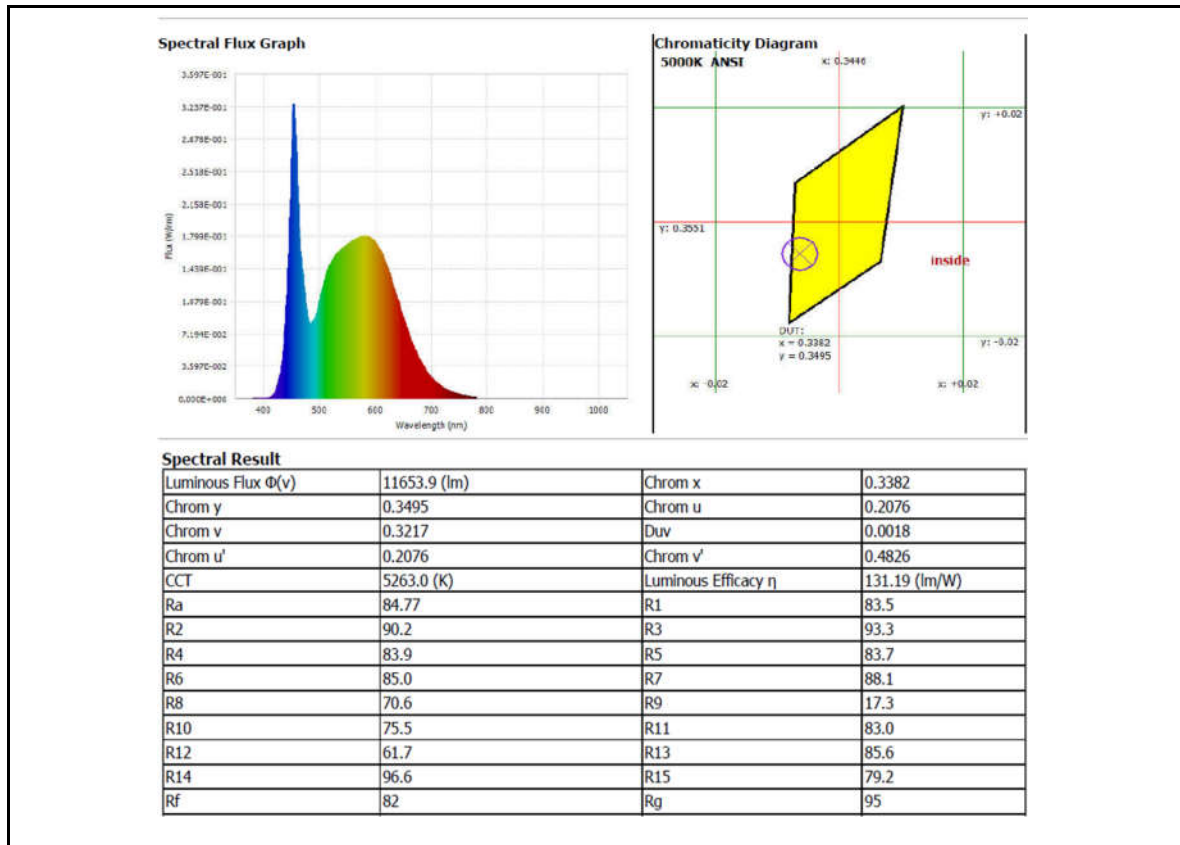
- The sample was tested according to the IES LM-79-2008.
- Photometric paramters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25° C ± 1° C.
- The sample measurements were made using a spectroradiometer 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.

Integrating Sphere Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency(Hz)	Current (A)	Power (W)	Power Factor	Current THD
25.5	120.01	60	0.7418	88.830	0.9979	4.20%

Test Results

Orientation	CCT (K)	CRI (Ra)	Duv	Luminous Flux (lm)	Luminous Efficacy (lm/W)
Horizontal	5263	84.8	0.0018	11653.9	131.19





3.0 LM-79 Measurement and Test Results

3.2 Goniophotometer Test

Model No.	55226		Sample ID.	613669-002	
Driver No.	N/A	Operate time (Min.)	80	Stabilization time (Min.)	70

Test Method

1. The sample was tested according to the IES LM-79-2008.
2. Photometric parameters were measured using a type C goniophotometer and software.
3. The ambient temperature shall be maintained at 25° C ± 1° C, measured at a point not more than 1 m from the sample and at the same height as the sample.
4. The samples were operated at rated voltage and was stabilized before measurement. Luminous flux, luminaire efficacy, zonal lumen were calculated from the software taken at 0.5° vertical intervals and 22.5° horizontal intervals.

Goniophotometer Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency	Current (A)	Power (W)	Power Factor
25.2	119.96	60	0.7403	88.61	0.9979

Test Result

Orientation	Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)
		Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread	
Horizontal	11548.90	153.5	155.1	102.1	104.3	130.3



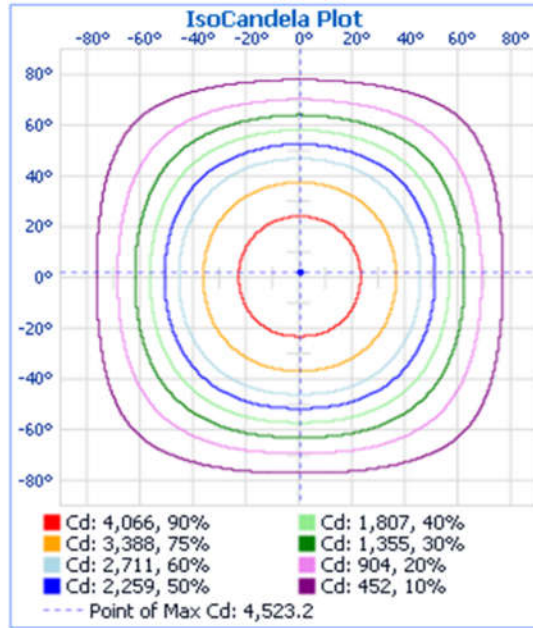
UL-CCIC Company Limited
No.2 Chengwan Road,
Suzhou Industrial Park
Suzhou 215122, China
86-512-68086400



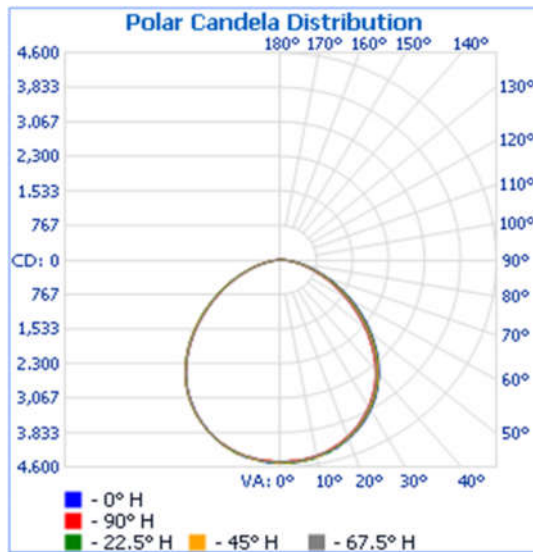
NVLAP LAB CODE: 600106-0

3.2 Goniophotometer Test (Cont'd)

IsoCandela Plot



Polar Candela Distribution





UL-CCIC Company Limited
 No.2 Chengwan Road,
 Suzhou Industrial Park
 Suzhou 215122, China
 86-512-68086400



NVLAP LAB CODE: 600106-0

3.2 Goniophotometer Test (Cont'd)

Zonal Lumen Summary

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	3,491.6	30.2%
0-40	5,679.5	49.2%
0-60	9,611.2	83.2%
60-90	1,937.7	16.8%
70-100	743.2	6.4%
90-120	0	0%
0-90	11,548.9	100%
90-180	0	0%
0-180	11,548.9	100%

Lumens Per Zone

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-5	107.3	0.9%	90-95	0	0%
5-10	318.7	2.8%	95-100	0	0%
10-15	519.6	4.5%	100-105	0	0%
15-20	702.4	6.1%	105-110	0	0%
20-25	859.2	7.4%	110-115	0	0%
25-30	984.4	8.5%	115-120	0	0%
30-35	1,072.3	9.3%	120-125	0	0%
35-40	1,115.7	9.7%	125-130	0	0%
40-45	1,108.2	9.6%	130-135	0	0%
45-50	1,050.8	9.1%	135-140	0	0%
50-55	951.4	8.2%	140-145	0	0%
55-60	821.3	7.1%	145-150	0	0%
60-65	674.1	5.8%	150-155	0	0%
65-70	520.4	4.5%	155-160	0	0%
70-75	368.4	3.2%	160-165	0	0%
75-80	232.6	2.0%	165-170	0	0%
80-85	114.3	1.0%	170-175	0	0%
85-90	27.9	0.2%	175-180	0	0%



3.2 Goniophotometer Test (Cont'd)

Intensity Data(cd)

	0	22.5	45	67.5	90	113	135	158	180	203	225	247.5	270	292.5	315	338	360
0	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500	4500
1	4497	4499	4487	4481	4473	4476	4510	4512	4514	4512	4510	4476	4473	4481	4487	4499	4497
2	4507	4523	4505	4482	4472	4486	4489	4494	4490	4494	4489	4486	4472	4482	4505	4523	4507
3	4512	4515	4494	4480	4463	4491	4474	4500	4501	4500	4474	4491	4463	4480	4494	4515	4512
4	4499	4504	4498	4475	4463	4477	4484	4489	4501	4489	4484	4477	4463	4475	4498	4504	4499
5	4506	4489	4483	4476	4465	4478	4484	4499	4476	4499	4484	4478	4465	4476	4483	4489	4506
6	4476	4482	4476	4470	4457	4475	4469	4477	4468	4477	4469	4475	4457	4470	4476	4482	4476
7	4479	4491	4483	4451	4446	4446	4461	4462	4459	4462	4461	4446	4446	4451	4483	4491	4479
8	4466	4468	4468	4458	4431	4435	4461	4442	4459	4442	4461	4435	4431	4458	4468	4468	4466
9	4442	4475	4447	4442	4430	4423	4431	4442	4430	4442	4431	4423	4430	4442	4447	4475	4442
10	4423	4440	4446	4420	4419	4414	4417	4434	4433	4434	4417	4414	4419	4420	4446	4440	4423
11	4426	4432	4423	4414	4389	4410	4402	4409	4411	4409	4402	4410	4389	4414	4423	4432	4426
12	4388	4414	4400	4388	4404	4375	4388	4393	4382	4393	4388	4375	4404	4388	4400	4414	4388
13	4406	4397	4370	4367	4360	4354	4362	4387	4364	4387	4362	4354	4360	4367	4370	4397	4406
14	4377	4390	4355	4355	4334	4342	4346	4356	4346	4356	4346	4342	4334	4355	4355	4390	4377
15	4345	4352	4348	4337	4313	4313	4327	4329	4324	4329	4327	4313	4313	4337	4348	4352	4345
16	4347	4321	4310	4298	4280	4304	4313	4296	4296	4296	4313	4304	4280	4298	4310	4321	4347
17	4297	4313	4280	4295	4264	4268	4276	4278	4277	4278	4276	4268	4264	4295	4280	4313	4297
18	4280	4281	4262	4245	4234	4247	4244	4246	4242	4246	4244	4247	4234	4245	4262	4281	4280
19	4256	4246	4231	4214	4204	4209	4215	4225	4204	4225	4215	4209	4204	4214	4231	4246	4256
20	4227	4217	4197	4184	4172	4177	4180	4182	4174	4182	4180	4177	4172	4184	4197	4217	4227
25	4057	4039	4021	3998	3984	3984	3989	3992	3977	3992	3989	3984	3984	3998	4021	4039	4057
30	3833	3818	3798	3771	3752	3755	3760	3762	3746	3762	3760	3755	3752	3771	3798	3818	3833
35	3564	3554	3532	3502	3477	3479	3487	3486	3478	3486	3487	3479	3477	3502	3532	3554	3564
40	3250	3237	3216	3178	3146	3147	3161	3161	3151	3161	3161	3147	3146	3178	3216	3237	3250
45	2892	2873	2842	2794	2760	2765	2784	2790	2777	2790	2784	2765	2760	2794	2842	2873	2892
50	2501	2475	2437	2382	2347	2350	2375	2390	2367	2390	2375	2350	2347	2382	2437	2475	2501
55	2099	2064	2020	1960	1926	1930	1956	1977	1956	1977	1956	1930	1926	1960	2020	2064	2099
60	1693	1660	1611	1557	1523	1527	1554	1576	1554	1576	1554	1527	1523	1557	1611	1660	1693
65	1311	1278	1232	1181	1153	1154	1178	1201	1180	1201	1178	1154	1153	1181	1232	1278	1311
70	956	920	883	847	823	821	834	854	828	854	834	821	823	847	883	920	956
75	641	611	581	554	538	530	538	552	532	552	538	530	538	554	581	611	641
80	371	353	332	313	297	294	295	303	294	303	295	294	297	313	332	353	371
85	154	141	128	118	109	105	104	102	100	102	104	105	109	118	128	141	154
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



UL-CCIC Company Limited
No.2 Chengwan Road,
Suzhou Industrial Park
Suzhou 215122, China
86-512-68086400



***** END OF REPORT. THIS PAGE INTENTIONALLY LEFT BLANK *****