



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

55228

### Project Number

4787668865

### Report Number

4787668865\_30

### Test Date

11/11/2016

### Issue Date

11/30/2016

### Prepared By

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Jonathan Xu

### Approved By

*Duff Yang*

Duff Yang

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

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## 1.0 Test List

Test Item	Test	Test Date	Model Number	Tests Conducted By
1	Integrating Sphere Test for the Lower CCT	11/11/2016	55228	Elvis Wu
2	Goniophotometer Test	11/11/2016	55228	Elvis Wu

### Remark (if any)

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



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## 2.0 Production Description

**Luminaire Description:** High-bay Luminaires for Commercial and Industrial Buildings  
**Model Number:** 55228

**Rated Voltage:** 120~277V

**Frequency:** 50/60 Hz

**LED Package:** 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.	55228		Sample ID.	628448-002	
Driver No.	N/A	Operate time (Min.)	80	Stabilization time (Min.)	70

#### Test Method

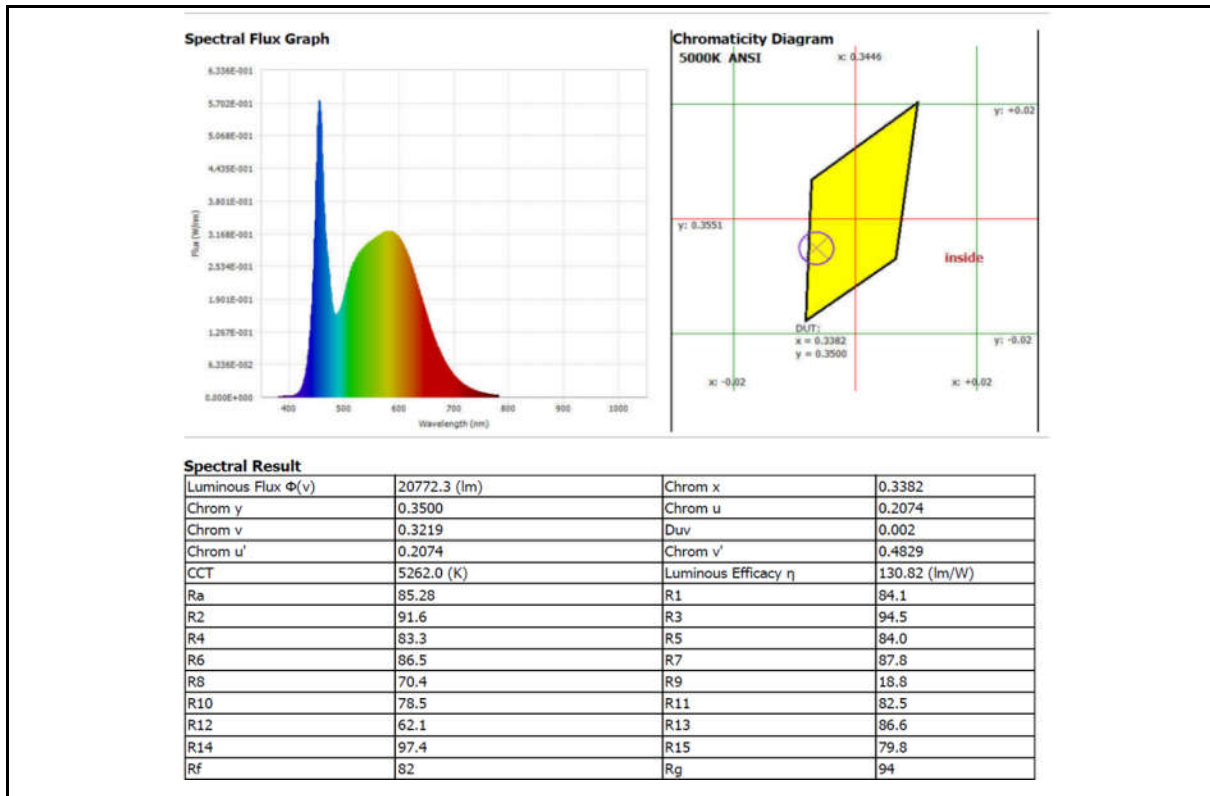
1. The sample was tested according to the IES LM-79-2008.
2. Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25° C ± 1° C.
3. The sample measurements were made using a spectroradiometer 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	120.03	60	1.3256	158.78	0.9980	5.00%

#### Test Results

Orientation	CCT (K)	CRI (Ra)	Duv	Luminous Flux (lm)	Luminous Efficacy (lm/W)
Horizontal	5262	85.3	0.002	20772.3	130.82





### 3.0 LM-79 Measurement and Test Results

#### 3.2 Goniophotometer Test

Model No.	55228		Sample ID.	628448-002	
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
25.0	119.97	60	1.3303	159.13	0.9972

#### Test Result

Orientation	Flux (lm)	Field Angle (10%)		Beam Angle (50%)		Luminous Efficacy (lm/W)
		Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread	
Horizontal	20588.10	154.3	155.6	103.9	105	129.4



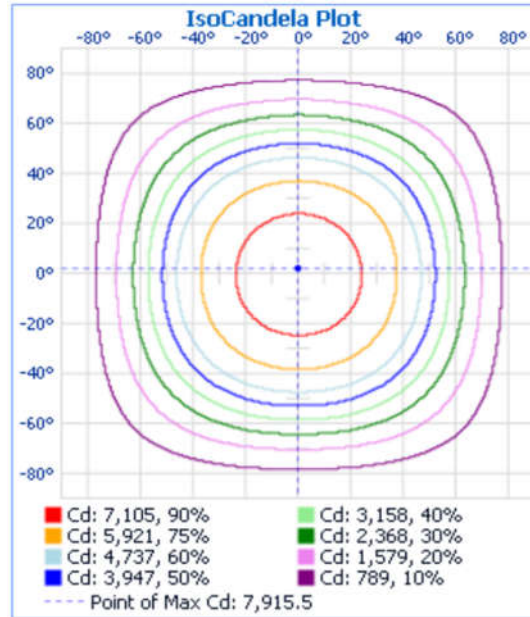
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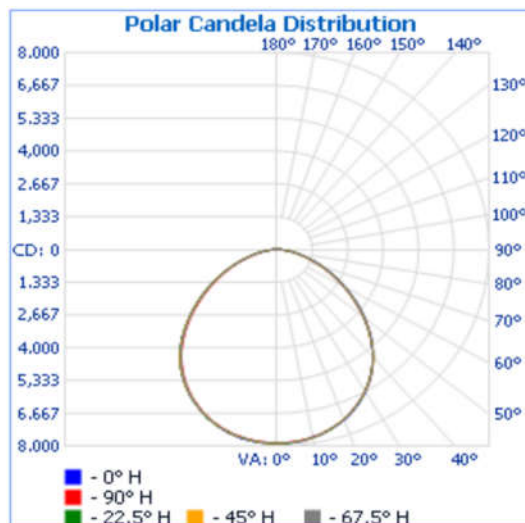
NVLAP LAB CODE: 600106-0

### 3.2 Goniophotometer Test (Cont'd)

#### IsoCandela Plot



#### Polar Candela Distribution





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NVLAP LAB CODE: 600106-0

### 3.2 Goniophotometer Test (Cont'd)

#### Zonal Lumen Summary

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	6,141.3	29.8%
0-40	10,014.7	48.6%
0-60	17,035.7	82.7%
60-90	3,501.0	17%
70-100	1,354.5	6.6%
90-120	17.4	0.1%
0-90	20,536.7	99.8%
90-180	51.4	0.2%
0-180	20,588.1	100%

#### Lumens Per Zone

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-5	188.3	0.9%	90-95	3.8	0%
5-10	559.1	2.7%	95-100	3.0	0%
10-15	912.0	4.4%	100-105	2.5	0%
15-20	1,234.0	6.0%	105-110	2.6	0%
20-25	1,512.3	7.3%	110-115	2.7	0%
25-30	1,735.6	8.4%	115-120	2.9	0%
30-35	1,895.5	9.2%	120-125	3.1	0%
35-40	1,977.9	9.6%	125-130	3.3	0%
40-45	1,971.1	9.6%	130-135	3.6	0%
45-50	1,874.6	9.1%	135-140	3.8	0%
50-55	1,701.2	8.3%	140-145	4.0	0%
55-60	1,474.0	7.2%	145-150	3.8	0%
60-65	1,214.0	5.9%	150-155	3.5	0%
65-70	939.2	4.6%	155-160	3.0	0%
70-75	667.1	3.2%	160-165	2.4	0%
75-80	421.7	2.0%	165-170	1.8	0%
80-85	207.5	1.0%	170-175	1.2	0%
85-90	51.5	0.3%	175-180	0.4	0%







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