



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

5524X_68W_3500K, 55243, 55244

Project Number

4787668865

Report Number

4787668865_20

Test Date

11/18/2016-11/22/2016

Issue Date

12/7/2016

Prepared By

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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	11/18/2016	5524X_68W_3500K	Gavin Yang
2	THD and PF Test	11/18/2016	5524X_68W_3500K	Gavin Yang
3	ISTMT Test	11/22/2016	5524X_68W_3500K	Gavin Yang

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: Direct Linear Ambient Luminaires

Model Number: 5524X_68W_3500K

Rated Voltage: 120~277V

Frequency: 50/60 Hz

LED Package: STWxA2PD-xx

Photos of Luminaire Characteristics





3.0 Integrating Sphere Test for the lower CCT

Model No.	5524X_68W_3500K		Sample ID.	643501-007	
Driver No.	N/A	Operate time (Min.)	80	Stabilization time (Min.)	70

Test Method

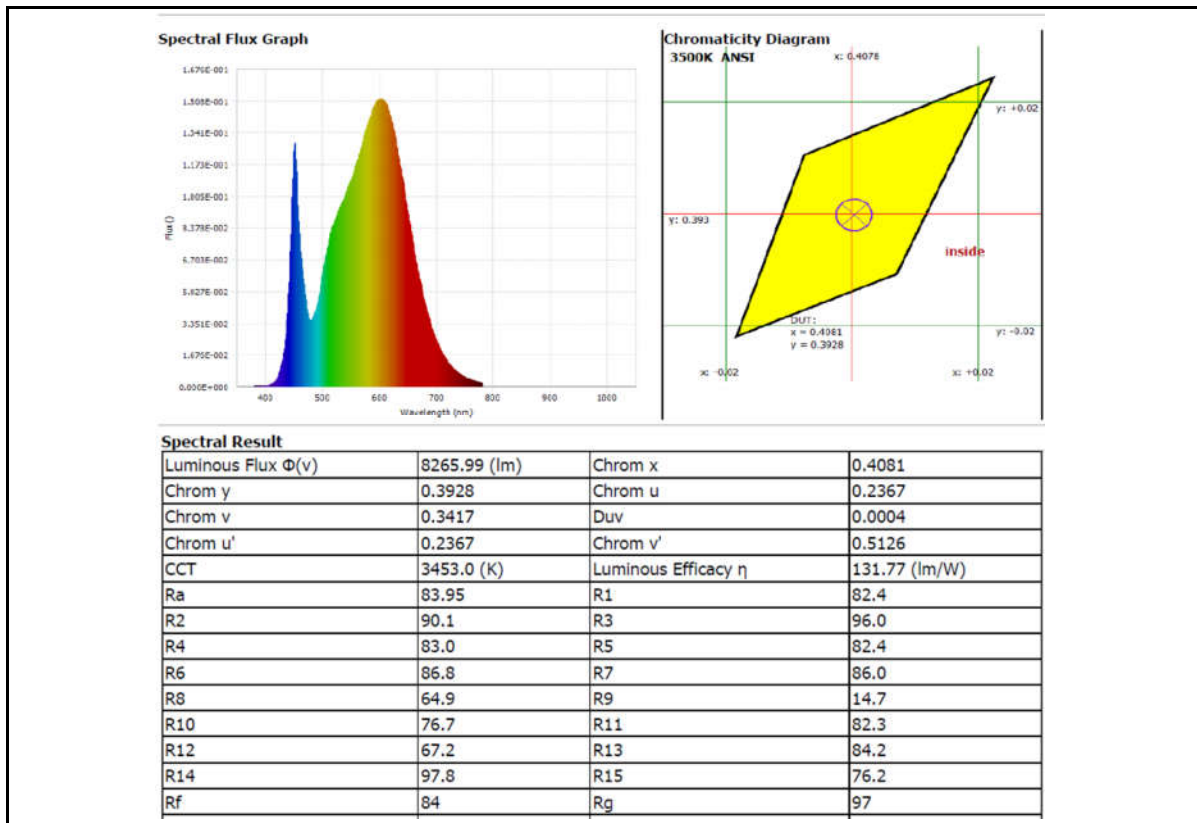
1. The sample was tested according to the IES LM-79-2008.
2. Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at 25° C ± 1° C.
3. The sample measurements were made using a spectroradiometer 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
25.5	120.02	60	0.5261	62.73	0.9935

Test Results

Orientation	CCT (K)	CRI (Ra)	Duv	Luminous Flux (lm)	Luminous Efficacy (lm/W)
Horizontal	3453	84.0	0.0004	8266.0	131.77





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NVLAP LAB CODE: 600106-0

4.0 THD and PF Test

Model No.	5524X_68W_3500K	Sample ID.	643501-007
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Test Method

1. The samples were tested according to the ANSI C82.77-2002.
2. The ambient temperature condition was maintained at 25° C ± 1° C. The sample measurement was made using a digital power meter and power supply. The sample was operated at rated voltage and stabilized before measurement. The total harmonic distortion were calculated from the digital power meter.

Test Results

Temperature (°C)	Voltage (Vac)	Frequency	Current (A)	Power (W)	Power Factor	Current THD
25.5	276.9	60	0.2377	62.358	0.9473	13.80%



5.0 In-Situ Temperature Measurement Test

Model No.	5524X_68W_3500K	Sample ID.	643501-007
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Test Method

1. In-Situ Temperature Measurement Test is conducted according to the UL1598-2008, Section 14 or UL1993-2012, Section 8.5.
2. The testing was conducted in a room with ambient temperature of $25^{\circ}\text{C} \pm 5^{\circ}\text{C}$. The apparatus construction followed those described in UL1598-2008 for normal temperature testing. Thermocouples were placed on the LED package in the locations indicated by LM-80 report. The temperature was recorded after the lamp was operated by 3.5 hours in stability or by 7.5 hours.

In-Situ Temperature Measurement Test Conditions

Temperature (°C)	Voltage (Vac)	Frequency	Current (A)	Power (W)	Power Factor	Orientation
25.0	120.02	60	0.5261	62.73	0.9935	horizontal

Test Results(LED)

Thermocouple Location	Manufacturer Declared Current (mA)	Temperature for Lighting source (°C)		LED Model Number	LM-80 Limit Current (mA)	LM-80 Limit Temp. (°C)
		Test result column 1	Test result (Correct to 25 °C)			
TMP of LEDs	85	53.4	53.4	STWxA2PD-xx	300	85
Ambient temperature	N/A	25.0	25.0			

Test Results(Driver)

Thermocouple Location	Temperature for Driver (°C)		Driver Model Number	Driver Limit Temp. (°C)
	Test result column 1	Test result (Correct to 25 °C)		
TMP of Driver	55.2	55.2	VEL75140MVHDA-10V-1	86
Ambient temperature	25.0	25.0		



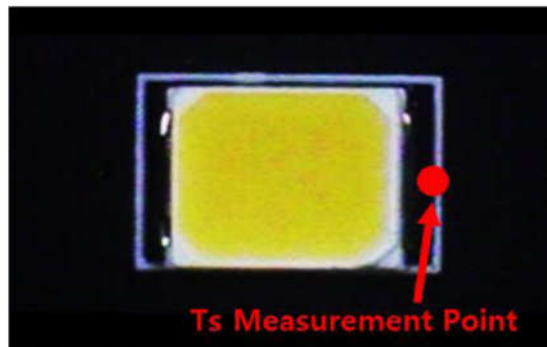
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5.0 In-Situ Temperature Measurement Test (Cont'd)

Test Photos for Tc Point of LED Packages





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