NVLAP Lab Code: 200952-0

Verification Services

Project No: 4786571655-11
Report No: 4786571655-11e
Report Issued Date: 2014-11-03

Test Report

Manufacturer:	P.Q.L., Inc.
Product Description:	Lamp Type: 2x2 Luminaires for Ambient Lighting of Interior Commercial Spaces Total Amount Of Light Source: 80 pcs Manufacturer Of Light Source: SAMSUNG Model Number Of Light Source: LM561B
Model Number:	55146
Electrical Specification:	Rated voltage: 100~277 V Frequency: 50/60Hz Wattage: 36 W

Test Laboratory & Address:			
UL Verification Services (Guangzhou) Co., Ltd. ADD: Building A1, 1F & 2F, Nansha Science and Technology Innovation Center, No. 25, South Huanshi Avenue , Nansha District, Guangzhou 511458, China			
Telephone:	+86 20 28667188	**Fax:**	+86 20 83486605

Receipt of Test Samples :	2014-09-15	**Test Period:**	2014-09-15 ~ 2014-11-03

Tested By	**Approved By**
Xavier Xiong / Xavier Xiong	Sean Xiao / Sean Xiao
Test Personnel Name & Signatory	**Approval Name & Signatory**

The results reported herein have been performed in accordance with the laboratory's terms of accreditation. This report shall not be reproduced except in full without the written approval of the Laboratory. The results in this report apply to the test sample(s) mentioned above at the time of the testing period only and are not to be used to indicate applicability to other similar products. This report does not imply that the product(s) has met the criteria for certification.

Test Report

Statement of Results

Test Flow	Test Method	Sample ID (Lab)	Sample Serial No.	Pass/Fail/NA
1.	Integrating Sphere Test	1959804-S003	N/A	Evaluate by customer

Deviation from Test Method (*if any*)

N/A

Remark *(if any)*

1. This report shall not be used by the client to claim product endorsement by NVLAP, NIST or any agency of the US government.

Test Report

Test No. 1 : Integrating Sphere Test

Environmental Conditions

Temperature:	25.1 ºC

Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
GVS-LE-PE001	Integrating Sphere	Before Use	Before Use
GVS-LE-FS007	Measurement Standard Lamp	12/23/2013	12/22/2014

Test Sample

1959804-S003

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 25º C ± 1º 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.

Test Results

Test Type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation	Operate time (Min.)	Stabilization time (Min.)
Input	119.96	60	0.295	35.20	0.995	Base up	58	50

Test Type	CCT (K)	Luminous Flux (lm)	Color Rendering Index Ra	Luminous Efficacy (lm/W)
Output	4,036	3496.5	84.4	99.33

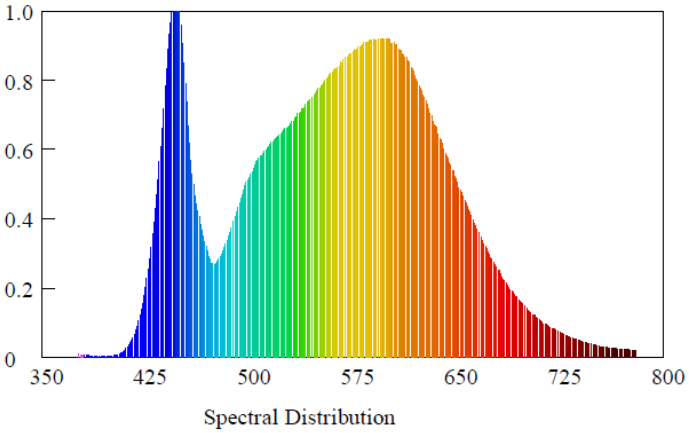
Test Report

Test Condition

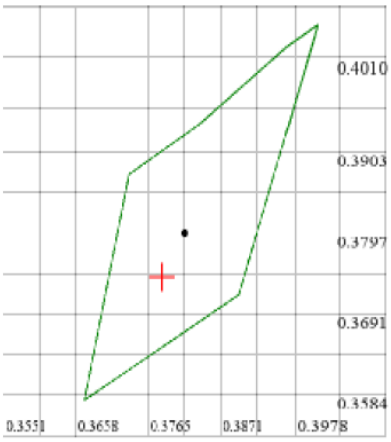
Temperature: 25.1°C | RH: ----%

Spectrum Range: 380-780 nm | Scan Step: 1 nm

Spectroradiometric Parameters



Spectral Distribution



Nominal CCT:LED_4000K
x0=0.3784 y0=0.3739

Chromaticity Coordinates: x=0.3784 y=0.3739 u'=0.2249 v'=0.5

Correlated Color Temperature: 4036 K | Dominant Wavelength: 578.0 nm(E)

Luminous Flux: 3496.547 lm | Purity: 0.2579

Chromaticity Difference: -0.00075Duv | Peak Wavelength: 449.5 nm

Color Ratio: Kr=37.8% Kg=52.4% Kb=9.8%

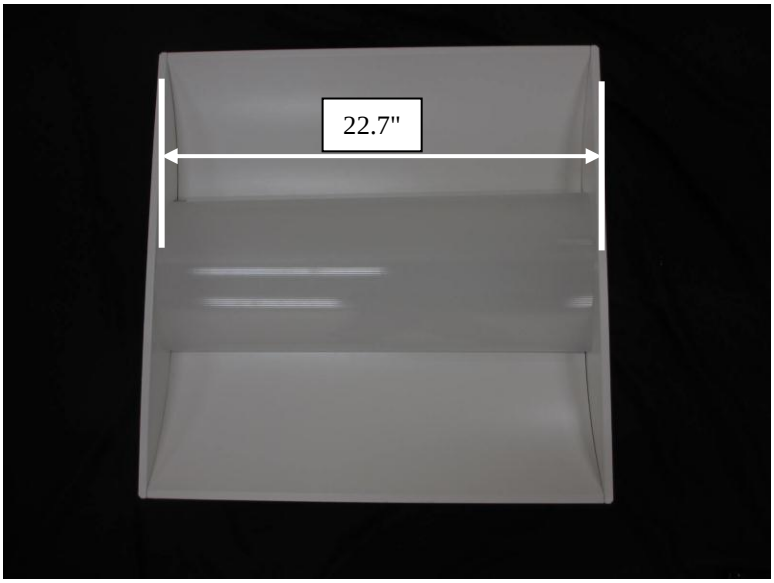
Bandwidth: 23nm | Radiant Flux: 9.576 W

Rendering Index: Ra=84.4

R1=83	R2=89	R3=94	R4=84	R5=83	R6=85	R7=87	R8=68
R9=18	R10=75	R11=84	R12=68	R13=85	R14=96	R15=78	

Test Report

Photos of sample



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