



Test Report



NVLAP Lab Code: 200952-0



Verification Services

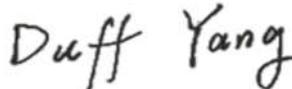
Project No. 4787241179-21
Report No. 4787241179-21a2
Report Issued Date: 2016-02-18

Customer Company & Address:			
P.Q.L., Inc. 2285 Ward Avenue Simi Valley, CA 93065			
Contact Person:			
Phone Number:	1-800-323-8107	Email Address:	

Relevant Standards:	IES LM-79-2008
Product Description:	Luminaire Description: Indoor High Bay Light Source: LGIT 5630 Ballast/Driver: VPL100-240
Brand Name:	Superior Life®
Tested Model Number:	55212
Product Family:	55212 / 4000K 55215 / 5000K
Allowable Variations:	Different types of diffuser, clear or frosted
Electrical Specification:	120~277 V AC, 50~60 Hz, 320 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

Sample Reception Date:	2015-12-14	Test Date:	2016-01-06
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Tested By	Approved By
 /Jonathan Xu	 /Duff Yang
Signatory & Test Personnel Name	Signatory & Approval Name

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.



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Statement of Results

Test Flow	Test Item	Sample ID (Lab)	Pass/Fail/NA
1	Integrating Sphere Test	2270262-S1	Evaluate by customer
2	Goniophotometer Test	2270262-S1	Evaluate by customer
3	THD and PF Test	2270262-S1	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.

2. The THD test data within this report comes from UL-CCIC Company Limited(NVLAP Lab Code:600106-0).



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Test Flow 1 : Integrating Sphere Test

Environmental Conditions

Temperature: 25.1°C

Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
GVS-LE-PE003	3-meter Integrating Sphere	Before Use	Before Use
GVS-LE-FS009	Measurement Standard Lamp	2015-08-22	2016-06-21

Test Sample

2270262-S1

Test Method

The sample was tested according to the IES LM-79-2008. Photometric parameters were measured using an integrating sphere, a spectroradiometer and software. The ambient temperature condition inside the sphere was maintained at $25^{\circ}\text{C} \pm 1^{\circ}\text{C}$. 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 Factor	Power(W)
Input	120.00	60	2.663	0.999	319.2

Test Type	CCT (K)	CRI	Lumen Output (lm)	Luminous Efficacy (lm/W)
Output	4189	84	37301	116.8



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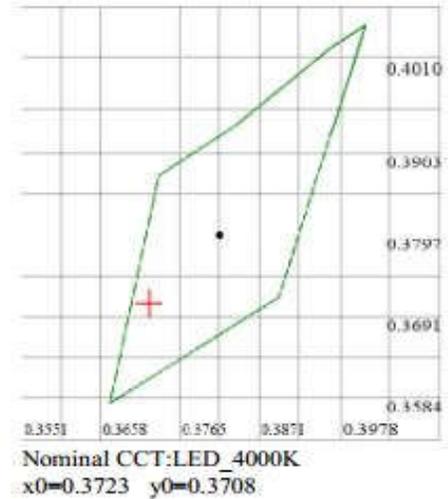
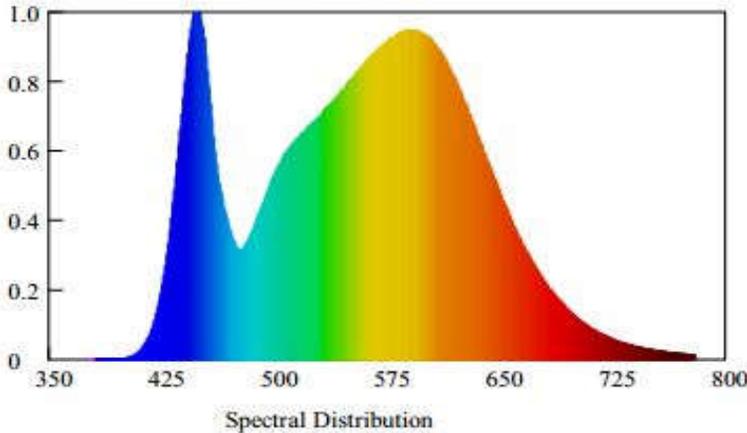
Test Report

Test Condition

Temperature: 25.1°C
Spectrum Range: 380-780 nm

RH: -----%
Scan Step: 1 nm

Spectroradiometric Parameters



Chromaticity Coordinates: $x=0.3723$ $y=0.3708$ $u'=0.2221$ $v'=0.4977$
 Correlated Color Temperature: 4189 K Dominant Wavelength: 577.0 nm(E)
 Luminous Flux: 37301.200 lm Purity: 0.2302
 Chromaticity Difference: -0.00034Duv Peak Wavelength: 450.5 nm
 Color Ratio: Kr=37.3% Kg=52.7% Kb=10.1%
 Bandwidth: 27.4nm Radiant Flux: 115.232 W
 Rendering Index: Ra=83.7
 R1=82 R2=89 R3=95 R4=83 R5=82 R6=85 R7=87 R8=66
 R9=12 R10=75 R11=82 R12=67 R13=84 R14=97 R15=76



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Test Flow 2: Goniophotometer Test

Environmental Conditions

Temperature:	25.1 ° C
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Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
GVS-LE-GS003	3-meter Goniophotometer	Before Use	Before Use
GVS-LE-FS009	Measurement Standard Lamp	2015-08-22	2015-08-21

Test Sample

2270262-S1

Test Method

The sample was tested according to the IES LM-79-2008.
 Photometric parameters were measured using a type C goniophotometer and software.
 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.
 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.

Test Results

Test Type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Power (W)
Input	120.00	60	2.663	0.999	319.2

Test Type	Lumen Output (lm)	Center Beam Candle Power (cd)	Field angle (10%)		Beam angle (50%)		Luminous Efficacy (lm/W)
			Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread	
Output	37733	14962	154.9	156.9	99.9	104.2	118.2



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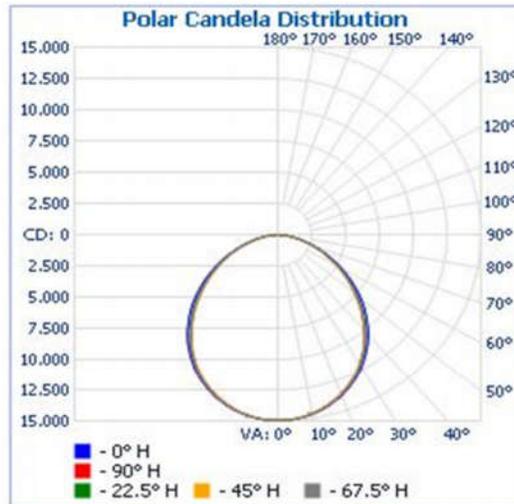
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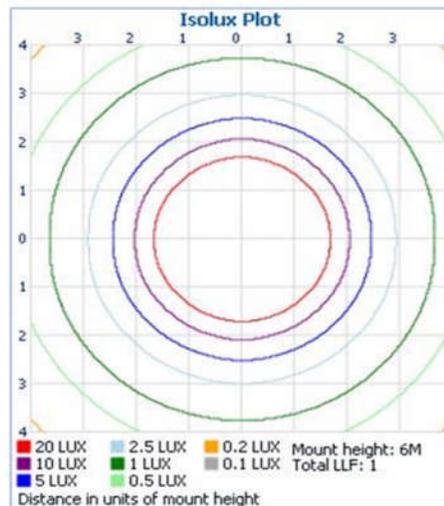
Illuminance at a Distance



Polar Candela Distribution



Isolux Plot





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Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	11,400.0	30.2%
0-40	18,359.5	48.7%
0-60	30,915.8	81.9%
60-90	6,786.0	18%
70-100	2,751.9	7.3%
90-120	13.6	0%
0-90	37,701.8	99.9%
90-180	30.7	0.1%
0-180	37,732.6	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-5	356.8	0.9%	90-95	11.4	0%
5-10	1,056.0	2.8%	95-100	0	0%
10-15	1,713.3	4.5%	100-105	0.2	0%
15-20	2,300.9	6.1%	105-110	0.2	0%
20-25	2,795.8	7.4%	110-115	0.6	0%
25-30	3,177.2	8.4%	115-120	1.2	0%
30-35	3,424.8	9.1%	120-125	1.8	0%
35-40	3,534.7	9.4%	125-130	2.0	0%
40-45	3,496.2	9.3%	130-135	2.2	0%
45-50	3,330.6	8.8%	135-140	2.4	0%
50-55	3,048.9	8.1%	140-145	2.1	0%
55-60	2,680.6	7.1%	145-150	2.0	0%
60-65	2,253.9	6.0%	150-155	1.6	0%
65-70	1,791.7	4.7%	155-160	1.3	0%
70-75	1,316.6	3.5%	160-165	0.8	0%
75-80	853.3	2.3%	165-170	0.6	0%
80-85	435.9	1.2%	170-175	0.3	0%
85-90	134.7	0.4%	175-180	0.1	0%



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Intensity Data(cd)

Table with 17 columns (0, 22.5, 45, 67.5, 90, 112.5, 135, 157.5, 180, 202.5, 225, 247.5, 270, 292.5, 315, 337.5, 360) and 181 rows of intensity data values.



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Test Flow 3: THD and PF Test

Environmental Conditions

Temperature: 25.1 °C

Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
122302	Power Analyzer	09/16/2015	09/15/2016

Test Sample

2270262-S1

Test Method

The samples were tested according to the ANSI C82.77-2002. 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

Test Type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power Factor	Current THD	Power (W)
Input	277.04	60	1.160	0.971	8.6%	311.9



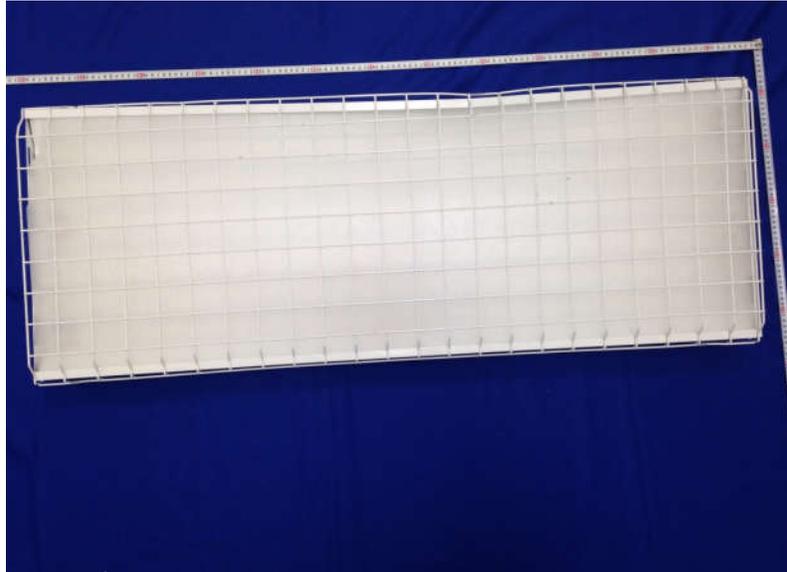
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Photos of sample



End of Test Report