



Test Report



NVLAP Lab Code: 200952-0



Verification Services

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

Customer Company & Address:			
P.Q.L., Inc. 2285 Ward Avenue Simi Valley, CA 93065			
Contact Person:			
Phone Number:		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:	55202
Product Family:	55202 / 4000K 55203 / 5000K
Allowable Variations:	Different types of diffuser, clear or frosted
Electrical Specification:	120~277 V AC, 50~60 Hz, 110 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
-------------------------------	------------	-------------------	------------

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.



Test Report



Verification Services

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

Statement of Results

Test Flow	Test Item	Sample ID (Lab)	Pass/Fail/NA
1	Integrating Sphere Test	2270257-S1	Evaluate by customer
2	Goniophotometer Test	2270257-S1	Evaluate by customer
3	THD and PF Test	2270257-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).



Test Report



NVLAP Lab Code: 200952-0



Verification Services

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

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-PE005	2-meter Integrating Sphere	Before Use	Before Use
GVS-LE-FS025	Measurement Standard Lamp	2015-06-17	2016-06-16

Test Sample

2270257-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	120.02	60	0.893	0.995	106.6

Test Type	CCT (K)	CRI	Lumen Output (lm)	Luminous Efficacy (lm/W)
Output	4092	84	12282	115.2



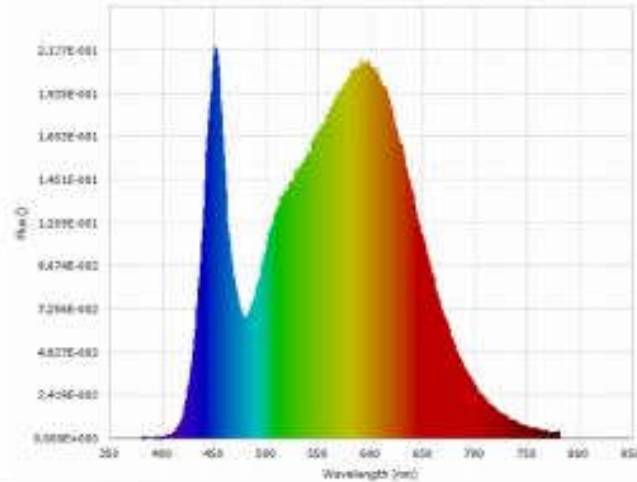
Test Report



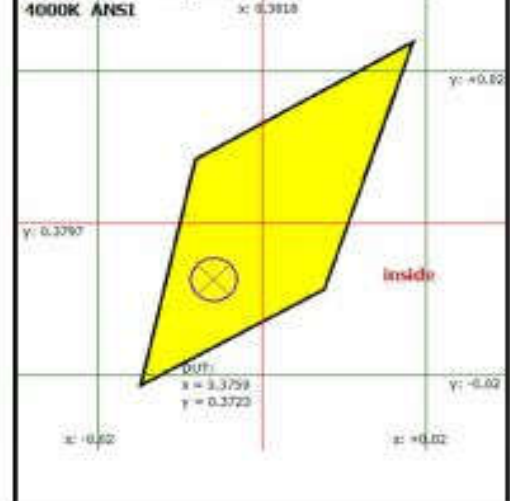
Verification Services

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

Spectral Flux Graph



Chromaticity Diagram



Spectral Result

Radiant Flux Φ	38.01 (W)	Luminous Flux $\Phi(v)$	12281.95 (lm)
$\Phi(v')$	21199.19 (lm')	Chrom x	0.3759
Chrom y	0.3723	Chrom u	0.2239
Chrom v	0.3326	Duv	-0.0008
Chrom u'	0.2239	Chrom v'	0.4989
λ (peak)	450.5 (nm)	λ (center)	450.6 (nm)
λ (centroid)	562.0 (nm)	λ (dom)	579.2 (nm)
FWHM	27.2 (nm)	Purity	24.5 (%)
CCT	4092.0 (K)	Luminous Efficacy η	115.18 (lm/W)
SDCM	N/A	Ra	84.06
R1	82.5	R2	89.8
R3	94.8	R4	83.3
R5	82.9	R6	85.7
R7	86.6	R8	66.8
R9	14.0	R10	75.6
R11	82.4	R12	67.5
R13	84.2	R14	97.3
R15	77.0	DUT Current	0.8931 (A)
DUT Voltage	120.0200 (V)	DUT PF	0.9949
DUT Power	106.6300 (W)	DUT Freq	60.0 (Hz)
DUT THD	8.4 (%)	DUT Comments ₁	N/A
Date/Time	2015/12/16 11:00:29		



Test Report



Verification Services

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

Test Flow 2: Goniophotometer Test

Environmental Conditions

Temperature:	25.1 ° C
--------------	----------

Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
GVS-LE-GS001	Goniophotometer	Before Use	Before Use
GVS-LE-FS009	Measurement Standard Lamp	2015-08-22	2016-08-21

Test Sample

2270257-S1

Test Method

The sample was tested according to the IES LM-79-2008.
 Photometric paramters 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	120.02	60	0.893	0.995	106.6

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	12455	4980	156.1	155.7	99.8	101	116.8



Test Report



NVLAP Lab Code: 200952-0



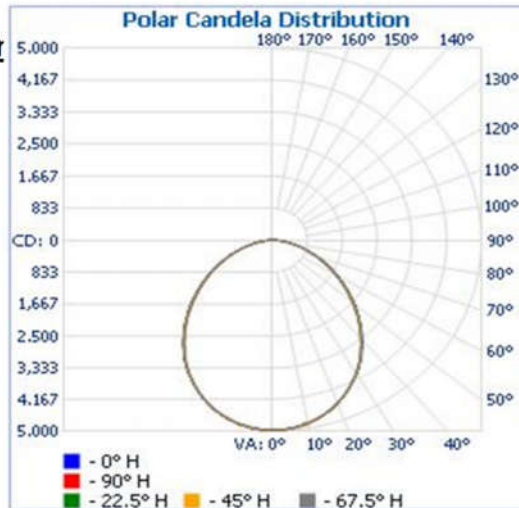
Verification Services

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

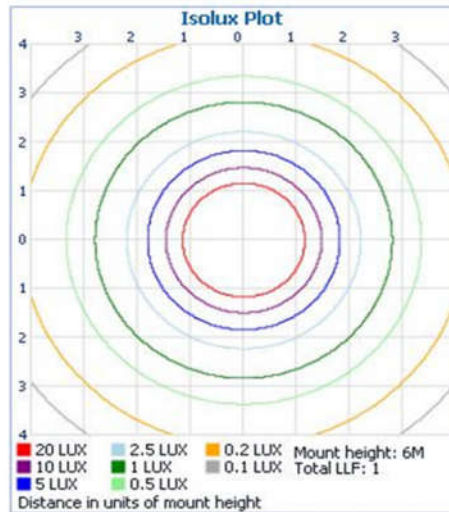
Illuminance at a Distance



Polar Candela Distribution



Isolux Plot





Test Report



NVLAP Lab Code: 200952-0



Verification Services

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

Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	3,782.1	30.4%
0-40	6,076.9	48.8%
0-60	10,199.7	81.9%
60-90	2,229.6	17.9%
70-100	906.4	7.3%
90-120	10.2	0.1%
0-90	12,429.3	99.8%
90-180	24.8	0.2%
0-180	12,454.1	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-5	118.6	1.0%	90-95	3.0	0%
5-10	351.1	2.8%	95-100	1.0	0%
10-15	569.4	4.6%	100-105	1.2	0%
15-20	764.5	6.1%	105-110	1.1	0%
20-25	927.4	7.4%	110-115	1.6	0%
25-30	1,051.1	8.4%	115-120	2.3	0%
30-35	1,131.1	9.1%	120-125	1.6	0%
35-40	1,163.7	9.3%	125-130	1.9	0%
40-45	1,149.4	9.2%	130-135	1.7	0%
45-50	1,092.9	8.8%	135-140	1.6	0%
50-55	1,000.5	8.0%	140-145	1.9	0%
55-60	880.0	7.1%	145-150	1.5	0%
60-65	739.9	5.9%	150-155	1.7	0%
65-70	587.2	4.7%	155-160	1.2	0%
70-75	431.2	3.5%	160-165	0.9	0%
75-80	280.3	2.3%	165-170	0.5	0%
80-85	147.2	1.2%	170-175	0.3	0%
85-90	43.7	0.4%	175-180	0.1	0%



Test Report



NVLAP Lab Code: 200952-0



Verification Services

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

Intensity Data(cd)

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	
0	4980	4980	4980	4980	4980	4980	4980	4980	4980	4980	4980	4980	4980	4980	4980	4980	4980
1	4974	4970	4974	4974	4987	4974	4974	4970	4974	4970	4974	4974	4987	4974	4974	4970	4974
2	4961	4967	4970	4974	4987	4974	4970	4967	4961	4967	4970	4974	4987	4974	4970	4967	4961
3	4954	4961	4964	4964	4980	4964	4964	4961	4954	4961	4964	4964	4980	4964	4964	4961	4954
4	4954	4954	4954	4957	4967	4957	4954	4954	4954	4954	4954	4957	4967	4957	4954	4954	4954
5	4941	4948	4951	4944	4967	4944	4951	4948	4941	4948	4951	4944	4967	4944	4951	4948	4941
6	4935	4938	4941	4931	4954	4931	4941	4938	4935	4938	4941	4931	4954	4931	4941	4938	4935
7	4928	4925	4928	4915	4928	4915	4928	4925	4928	4925	4928	4915	4928	4915	4928	4925	4928
8	4902	4902	4908	4902	4921	4902	4908	4902	4902	4902	4908	4902	4921	4902	4908	4902	4902
9	4882	4836	4849	4863	4901	4882	4888	4895	4882	4915	4928	4902	4901	4882	4888	4895	4882
10	4869	4862	4869	4862	4888	4862	4869	4862	4869	4862	4869	4862	4888	4862	4869	4862	4869
11	4843	4849	4842	4839	4855	4839	4842	4849	4843	4849	4842	4839	4855	4839	4842	4849	4843
12	4810	4820	4823	4810	4836	4810	4823	4820	4810	4820	4823	4810	4836	4810	4823	4820	4810
13	4791	4787	4793	4790	4809	4790	4793	4787	4791	4787	4793	4790	4809	4790	4793	4787	4791
14	4758	4761	4764	4757	4770	4757	4764	4761	4758	4761	4764	4757	4770	4757	4764	4761	4758
15	4732	4738	4734	4721	4744	4721	4734	4738	4732	4738	4734	4721	4744	4721	4734	4738	4732
16	4693	4702	4701	4685	4711	4685	4701	4702	4693	4702	4701	4685	4711	4685	4701	4702	4693
17	4667	4666	4662	4659	4678	4659	4662	4666	4667	4666	4662	4659	4678	4659	4662	4666	4667
18	4634	4626	4632	4617	4639	4617	4632	4626	4634	4626	4632	4617	4639	4617	4632	4626	4634
19	4595	4587	4590	4574	4586	4574	4590	4587	4595	4587	4590	4574	4586	4574	4590	4587	4595
20	4549	4544	4547	4535	4547	4535	4547	4544	4549	4544	4547	4535	4547	4535	4547	4544	4549
25	4294	4302	4298	4289	4304	4289	4298	4302	4294	4302	4298	4289	4304	4289	4298	4302	4294
30	4019	4010	4009	3994	4001	3994	4009	4010	4019	4010	4009	3994	4001	3994	4009	4010	4019
35	3706	3696	3674	3653	3653	3653	3674	3696	3706	3696	3674	3653	3653	3653	3674	3696	3706
40	3314	3326	3297	3276	3285	3276	3297	3326	3314	3326	3297	3276	3285	3276	3297	3326	3314
50	2536	2523	2507	2477	2484	2477	2507	2523	2536	2523	2507	2477	2484	2477	2507	2523	2536
55	2124	2126	2100	2077	2076	2077	2100	2126	2124	2126	2100	2077	2076	2077	2100	2126	2124
60	1745	1727	1713	1678	1675	1678	1713	1727	1745	1727	1713	1678	1675	1678	1713	1727	1745
65	1359	1356	1335	1320	1327	1320	1335	1356	1359	1356	1335	1320	1327	1320	1335	1356	1359
70	993	1003	991	973	972	973	991	1003	993	1003	991	973	972	973	991	1003	993
75	667	668	669	665	664	665	669	668	667	668	669	665	664	665	669	668	667
80	379	387	390	390	394	390	390	387	379	387	390	390	394	390	390	387	379
85	150	157	161	167	164	167	161	157	150	157	161	167	164	167	161	157	150
90	20	29	23	16	13	16	23	29	20	29	23	16	13	16	23	29	20
95	7	7	0	7	7	7	0	7	7	7	0	7	7	7	0	7	7
100	0	0	7	13	0	13	7	0	0	0	7	13	0	13	7	0	0
105	0	0	7	7	0	7	7	0	0	0	7	7	0	7	7	0	0
110	7	3	3	3	0	3	3	3	7	3	3	3	0	3	3	3	7
115	0	0	7	10	0	10	7	0	0	0	7	10	0	10	7	0	0
120	0	0	7	10	0	10	7	0	0	0	7	10	0	10	7	0	0
125	13	0	0	3	10	3	0	0	13	0	0	3	10	3	0	0	13
130	0	7	7	0	0	0	7	7	0	7	7	0	0	0	7	7	0
135	0	0	10	10	0	10	10	0	0	0	10	10	0	10	10	0	0
140	13	3	13	7	10	7	13	3	13	3	13	7	10	7	13	3	13
145	0	7	7	0	0	0	7	7	0	7	7	0	0	0	7	7	0
150	13	3	7	7	7	7	7	3	13	3	7	7	7	7	7	3	13
155	13	10	0	10	0	10	0	10	13	10	0	10	0	10	0	10	13
160	0	0	10	3	0	3	10	0	0	0	10	3	0	3	10	0	0
165	0	13	10	0	0	0	10	13	0	13	10	0	0	0	10	13	0
170	0	3	3	0	10	0	3	3	0	3	3	0	10	0	3	3	0
175	7	3	3	7	10	7	3	3	7	3	3	7	10	7	3	3	7
180	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5



Test Report



NVLAP Lab Code: 200952-0



Verification Services

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

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

2270257-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	277.08	60	0.393	0.963	15.2%	104.7



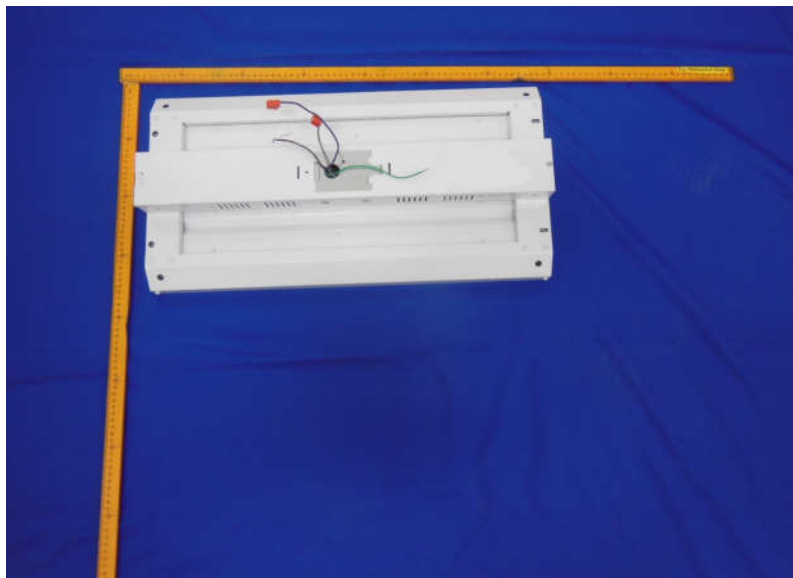
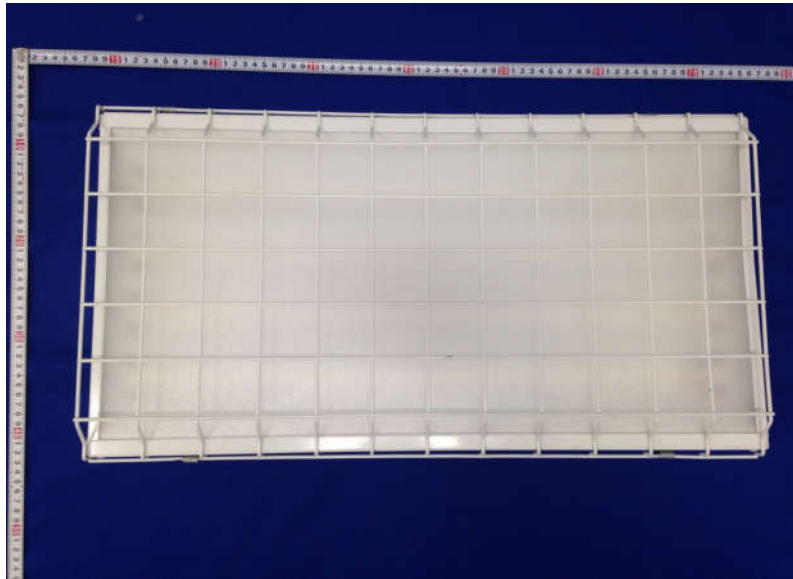
Test Report



Verification Services

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

Photos of sample



End of Test Report