



Test Report



NVLAP Lab Code: 200952-0



Verification Services

Project No. demo-1

Report No. demo-1a


Report Issued Date: 2016-01-12

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

Relevant Standards:	IES LM-79-2008
Product Description:	Luminaire Description: Indoor Troffer Light Source: LGIT 5630HE Package Ballast/Driver: VPL50-100-MVHDA-PD-1C
Brand Name:	Superior Life®
Tested Model Number:	55192 3000K
Product Family:	55193 4000K / 3500K / 5000K
Allowable Variations:	Different CCT
Electrical Specification:	120~277 V AC, 50~60 Hz, 42 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:	2016-01-07
-------------------------------	------------	-------------------	------------

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. demo-1
Report No. demo-1a
Report Issued Date: 2016-01-12

Statement of Results

Test Flow	Test Item	Sample ID (Lab)	Pass/Fail/NA
1	Integrating Sphere Test	2269992-S1	Evaluate by customer
2	Goniophotometer Test	2269992-S1	Evaluate by customer
3	THD and PF Test	2269992-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. demo-1

Report No. demo-1a

Report Issued Date: 2016-01-12

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	2016-08-21

Test Sample

2269992-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° C ± 1° 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	120.03	60	0.329	0.999	39.4

Test Type	CCT (K)	CRI	Lumen Output (lm)	Luminous Efficacy (lm/W)
Output	3161	83	4553	115.5



Verification Services

Project No. demo-1
Report No. demo-1a
Report Issued Date: 2016-01-12

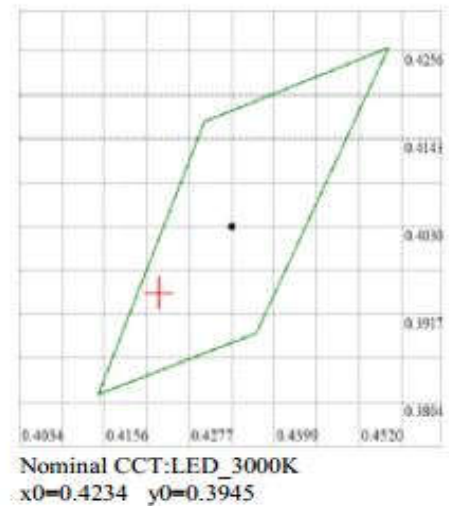
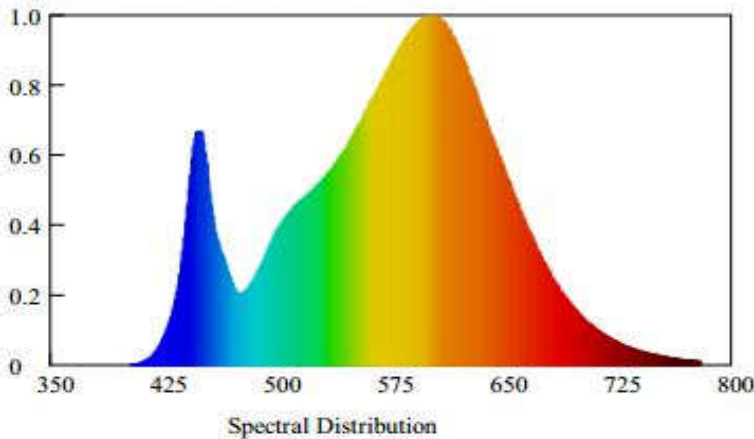
Test Report

Test Condition

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

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

Spectroradiometric Parameters



Chromaticity Coordinates: $x=0.4234$ $y=0.3945$ $u'=0.2459$ $v'=0.5155$

Correlated Color Temperature: 3161 K

Dominant Wavelength: 581.0 nm(E)

Luminous Flux: 4553.131 lm

Purity: 0.4576

Chromaticity Difference: -0.00189Duv

Peak Wavelength: 604.8 nm

Color Ratio: Kr=43.7% Kg=48.5% Kb=7.9%

Bandwidth: 129.8nm

Radiant Flux: 13.902 W

Rendering Index: Ra=82.8

R1=81 R2=91 R3=96 R4=81 R5=82 R6=89 R7=83 R8=60

R9=8 R10=80 R11=80 R12=72 R13=84 R14=98 R15=75



Test Report



Verification Services

Project No. demo-1
Report No. demo-1a
Report Issued Date: 2016-01-12

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-GS003	Goniophotometer	Before Use	Before Use
GVS-LE-FS009	Measurement Standard Lamp	2015-08-22	2016-08-21

Test Sample

120~277 V AC, 50~60 Hz, 42 W

2269992-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	120.03	60	0.329	0.999	39.4

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	4541	1484	168.8	158.8	124.6	114.6	115.2



Test Report



NVLAP Lab Code: 200952-0



Verification Services

Project No. demo-1

Report No. demo-1a

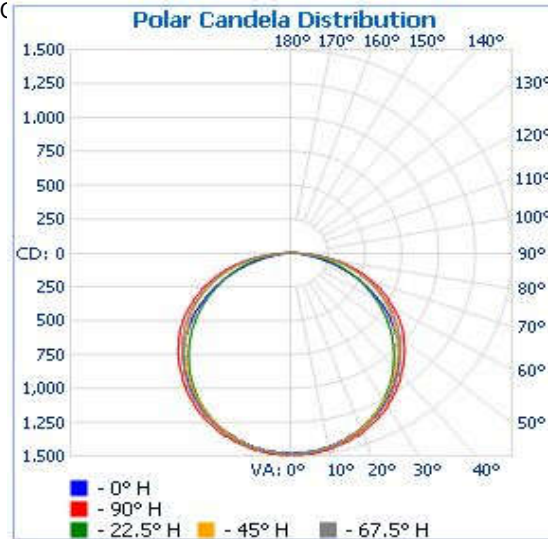
Report Issued Date: 2016-01-12

Illuminance at a Distance

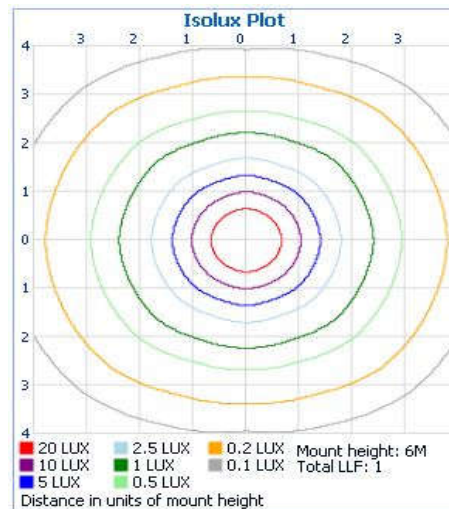


Polar Candela Distribution

120~277 V AC



Isolux Plot





Test Report



NVLAP Lab Code: 200952-0



Verification Services

Project No. demo-1

Report No. demo-1a

Report Issued Date: 2016-01-12

Zonal Lumen Tabulation

Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	1,159.4	25.5%
0-40	1,909.3	42%
0-60	3,446.2	75.9%
60-90	1,094.8	24.1%
70-100	494.1	10.9%
90-120	0.0	0%
0-90	4,541.0	100%
90-180	0.1	0%
0-180	4,541.1	100%

Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-5	35.4	0.8%	90-95	0	0%
5-10	105.2	2.3%	95-100	0	0%
10-15	171.4	3.8%	100-105	0.0	0%
15-20	232.1	5.1%	105-110	0	0%
20-25	285.3	6.3%	110-115	0	0%
25-30	329.9	7.3%	115-120	0	0%
30-35	363.7	8.0%	120-125	0.0	0%
35-40	386.2	8.5%	125-130	0	0%
40-45	397.0	8.7%	130-135	0	0%
45-50	396.6	8.7%	135-140	0	0%
50-55	383.8	8.5%	140-145	0	0%
55-60	359.5	7.9%	145-150	0	0%
60-65	323.1	7.1%	150-155	0	0%
65-70	277.5	6.1%	155-160	0	0%
70-75	223.4	4.9%	160-165	0	0%
75-80	161.2	3.5%	165-170	0	0%
80-85	89.4	2.0%	170-175	0	0%
85-90	20.2	0.4%	175-180	0	0%



Test Report



NVLAP Lab Code: 200952-0



Verification Services

Project No. demo-1

Report No. demo-1a

Report Issued Date: 2016-01-12

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	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484	1484
1	1475	1489	1482	1482	1492	1482	1482	1489	1475	1489	1482	1482	1492	1482	1482	1489	1475	1475
2	1475	1484	1480	1484	1492	1484	1480	1484	1475	1484	1480	1484	1492	1484	1480	1484	1475	1475
3	1475	1484	1480	1482	1492	1482	1480	1484	1475	1484	1480	1482	1492	1482	1480	1484	1475	1475
4	1475	1482	1480	1478	1488	1478	1480	1482	1475	1482	1480	1478	1488	1478	1480	1482	1475	1475
5	1475	1482	1482	1476	1488	1476	1482	1482	1475	1482	1482	1476	1488	1476	1482	1482	1475	1475
6	1470	1480	1473	1476	1488	1476	1473	1480	1470	1480	1473	1476	1488	1476	1473	1480	1470	1470
7	1470	1473	1468	1472	1484	1472	1468	1473	1470	1473	1468	1472	1484	1472	1468	1473	1470	1470
8	1466	1469	1471	1468	1480	1468	1471	1469	1466	1469	1471	1468	1480	1468	1471	1469	1466	1466
9	1461	1467	1457	1453	1476	1463	1461	1467	1461	1467	1466	1476	1476	1463	1461	1467	1461	1461
10	1456	1458	1457	1464	1476	1464	1457	1458	1456	1458	1457	1464	1476	1464	1457	1458	1456	1456
11	1452	1454	1450	1458	1468	1458	1450	1454	1452	1454	1450	1458	1468	1458	1450	1454	1452	1452
12	1442	1452	1442	1454	1460	1454	1442	1452	1442	1452	1442	1454	1460	1454	1442	1452	1442	1442
13	1433	1443	1439	1450	1451	1450	1439	1443	1433	1443	1439	1450	1451	1450	1439	1443	1433	1433
14	1428	1430	1430	1440	1451	1440	1430	1428	1430	1430	1440	1451	1440	1430	1430	1428	1428	1428
15	1419	1428	1419	1436	1447	1436	1419	1428	1419	1428	1419	1436	1447	1436	1419	1428	1419	1419
16	1410	1417	1412	1430	1443	1430	1412	1417	1410	1417	1412	1430	1443	1430	1412	1417	1410	1410
17	1405	1408	1408	1418	1431	1418	1408	1408	1405	1408	1408	1418	1431	1418	1408	1408	1405	1405
18	1401	1402	1399	1414	1423	1414	1399	1402	1401	1402	1399	1414	1423	1414	1399	1402	1401	1401
19	1387	1393	1390	1402	1419	1402	1390	1393	1387	1393	1390	1402	1419	1402	1390	1393	1387	1387
20	1382	1380	1376	1392	1414	1392	1376	1380	1382	1380	1376	1392	1414	1392	1376	1380	1382	1382
25	1331	1322	1325	1341	1365	1341	1325	1322	1331	1322	1325	1341	1365	1341	1325	1322	1331	1331
30	1266	1252	1258	1283	1308	1283	1258	1252	1266	1252	1258	1283	1308	1283	1258	1252	1266	1266
35	1201	1173	1186	1212	1242	1212	1186	1173	1201	1173	1186	1212	1242	1212	1186	1173	1201	1201
40	1127	1084	1105	1134	1160	1134	1105	1084	1127	1084	1105	1134	1160	1134	1105	1084	1127	1127
50	923	880	932	960	1000	960	932	880	923	880	932	960	1000	960	932	880	923	923
55	816	766	843	862	906	862	843	766	816	766	843	862	906	862	843	766	816	816
60	677	649	740	761	799	761	740	649	677	649	740	761	799	761	740	649	677	677
65	538	536	632	650	685	650	632	536	538	536	632	650	685	650	632	536	538	538
70	408	420	518	531	570	531	518	420	408	420	518	531	570	531	518	420	408	408
75	269	303	392	416	443	416	392	303	269	303	392	416	443	416	392	303	269	269
80	125	182	260	279	295	279	260	182	125	182	260	279	295	279	260	182	125	125
85	37	69	108	121	127	121	108	69	37	69	108	121	127	121	108	69	37	37
90	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
95	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
100	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
105	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0



Test Report



NVLAP Lab Code: 200952-0



Verification Services

Project No. demo-1

Report No. demo-1a

Report Issued Date: 2016-01-12

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

2269992-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	0.146	0.969	4.4%	39.1



Test Report



Verification Services

Project No. demo-1
Report No. demo-1a
Report Issued Date: 2016-01-12

Photos of sample



120~277 V AC, 50~60 Hz, 42 W



End of Test Report