



## Verification Services

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



# Test Report

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

<b>Relevant Standards:</b>	IES LM-79-2008
<b>Product Description:</b>	Luminaire Description: Indoor Troffer Light Source: LGIT 5630HE Package Ballast/Driver: VEL30100MVHDA-10V-1
<b>Brand Name:</b>	Superior Life®
<b>Tested Model Number:</b>	55190 3000K
<b>Product Family:</b>	55191 4000K / 3500K / 5000K
<b>Allowable Variations:</b>	Different CCT
<b>Electrical Specification:</b>	120~277 V AC, 50~60 Hz, 34 W

<b>Test Laboratory &amp; Address:</b>			
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			
<b>Telephone:</b>	+86 20 28667188	<b>Fax:</b>	+86 20 83486605

<b>Sample Reception Date:</b>	2015-12-14	<b>Test Date:</b>	2016-01-07
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Tested By	Approved By
 /Jonathan Xu	 /Duff Yang
<b>Signatory &amp; Test Personnel Name</b>	<b>Signatory &amp; Approval Name</b>

**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	2269988-S1	Evaluate by customer
2	Goniophotometer Test	2269988-S1	Evaluate by customer
3	THD and PF Test	2269988-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



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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	2016-08-21

#### Test Sample

2269988-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	120.01	60	0.270	0.998	32.3

Test Type	CCT (K)	CRI	Lumen Output (lm)	Luminous Efficacy (lm/W)
Output	3152	83	3679	113.7



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# Test Report

### Test Condition

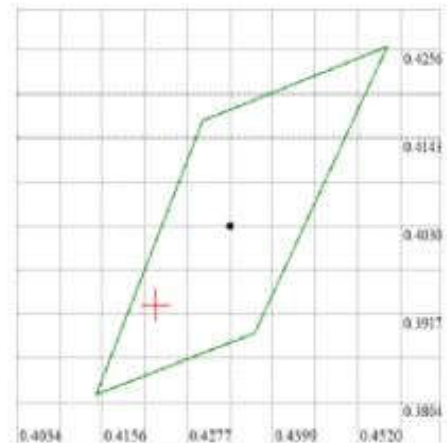
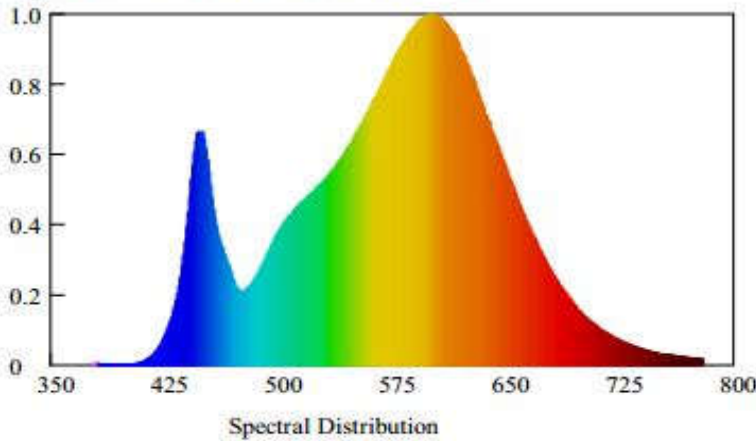
Temperature: 25.1°C

RH: ----%

Spectrum Range: 380-780 nm

Scan Step: 1 nm

### Spectroradiometric Parameters



Nominal CCT: LED\_3000K  
x0=0.4232 y0=0.3929

Chromaticity Coordinates: x=0.4232 y=0.3929 u'=0.2465 v'=0.5148

Correlated Color Temperature: 3152 K

Dominant Wavelength: 582.0 nm(E)

Luminous Flux: 3678.660 lm

Purity: 0.4502

Chromaticity Difference: -0.0025Duv

Peak Wavelength: 603.3 nm

Color Ratio: Kr=43.9% Kg=48.2% Kb=7.9%

Bandwidth: 129.2nm

Radiant Flux: 11.31 W

Rendering Index: Ra=83.0

R1=82 R2=92 R3=96 R4=81 R5=82 R6=89 R7=83 R8=60

R9=9 R10=81 R11=80 R12=73 R13=85 R14=98 R15=75



# Test Report



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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-GS001	Goniophotometer	Before Use	Before Use
GVS-LE-FS009	Measurement Standard Lamp	2015-08-22	2016-08-21

### Test Sample

2269988-S1
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### 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	120.01	60	0.270	0.998	32.3

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	3682	1237	169.0	159.2	123.8	107.7	113.8



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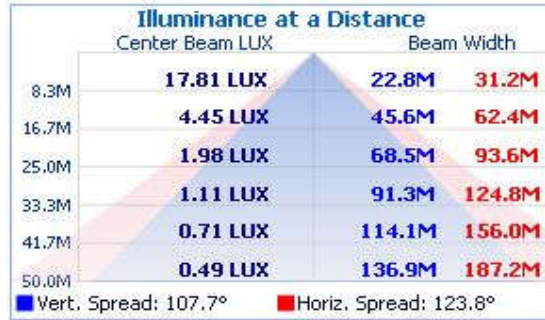
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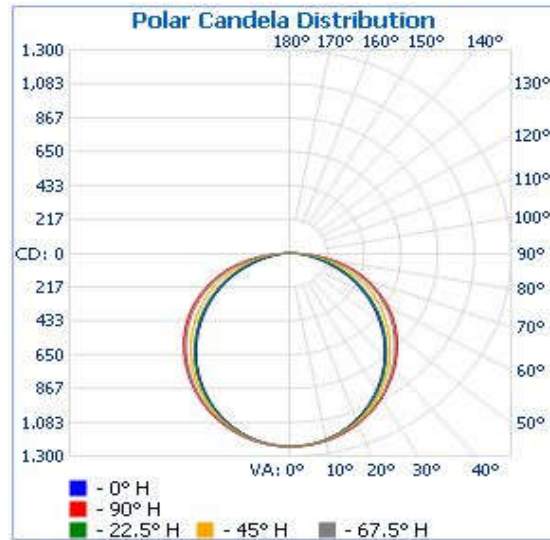
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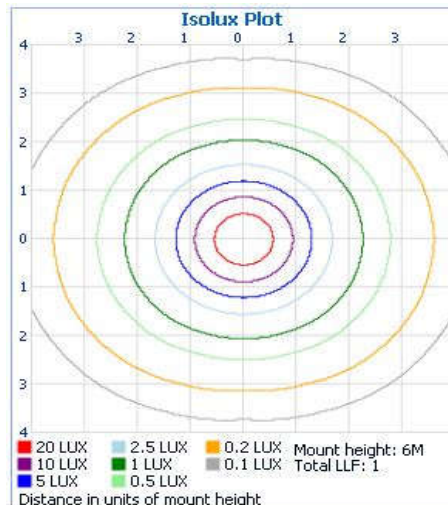
### Illuminance at a Distance



### Polar Candela Distribution



### Isolux Plot





# Test Report



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### Zonal Lumen Tabulation

#### Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	958.7	26%
0-40	1,570.9	42.7%
0-60	2,808.0	76.2%
60-90	873.4	23.7%
70-100	395.3	10.7%
90-120	0.6	0%
0-90	3,681.4	100%
90-180	1.3	0%
0-180	3,682.7	100%

#### Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-5	29.5	0.8%	90-95	0.2	0%
5-10	87.5	2.4%	95-100	0.1	0%
10-15	142.4	3.9%	100-105	0.1	0%
15-20	192.4	5.2%	105-110	0.1	0%
20-25	235.7	6.4%	110-115	0.1	0%
25-30	271.1	7.4%	115-120	0.1	0%
30-35	297.6	8.1%	120-125	0.1	0%
35-40	314.6	8.5%	125-130	0.1	0%
40-45	321.8	8.7%	130-135	0.1	0%
45-50	319.6	8.7%	135-140	0.1	0%
50-55	308.2	8.4%	140-145	0.1	0%
55-60	287.5	7.8%	145-150	0.1	0%
60-65	258.0	7.0%	150-155	0.1	0%
65-70	220.4	6.0%	155-160	0.1	0%
70-75	176.4	4.8%	160-165	0.0	0%
75-80	126.9	3.4%	165-170	0.0	0%
80-85	73.0	2.0%	170-175	0.0	0%
85-90	18.7	0.5%	175-180	0.0	0%







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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

2269988-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	277.02	60	0.114	0.972	7.9%	30.7



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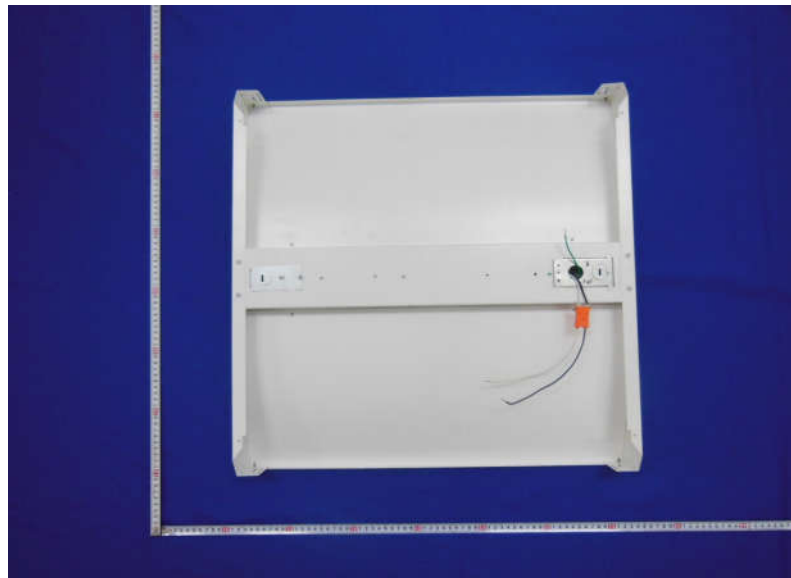
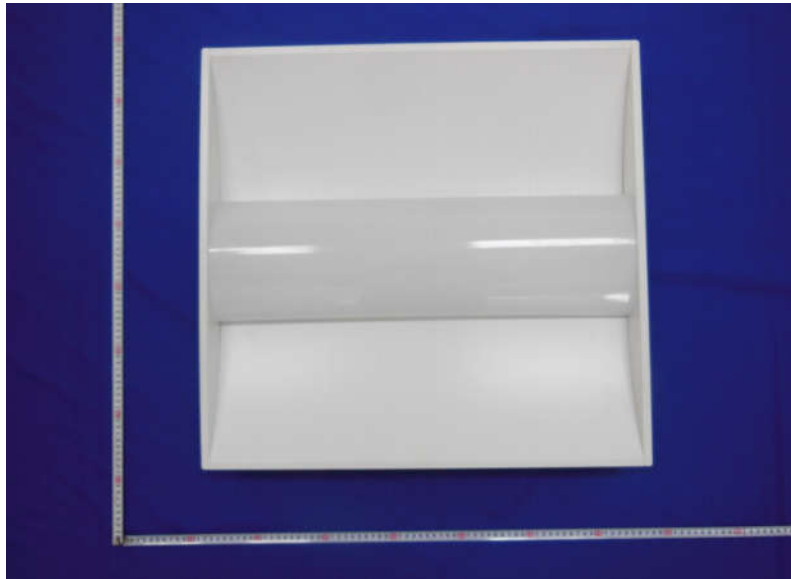
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### Photos of sample



**End of Test Report**