NVLAP Lab Code: 200952-0

Verification Services

Project No. : 10055122-2
Report No. : 10055122-2a
Report Issued Date: 2013-09-13

Test Report

Customer Company & Address:			
GREEN CREATIVE ADD: Room 1206-7 New Victory House, 93-103 Wing Lok Street, Central, HONG KONG			
Contact Person:	Guillaume Vidal		
Telephone:	021-62320308	**Fax/Email address:**	guillaume@gc-lighting.com

Manufacturer:	N/A
Country of Origin:	China
Country of Export:	USA, Canada
Product Description:	Lamp type: LED lamp Total amount of light source: 7 The manufacturer of light source: OSRAM The model number of light source: SQUARE
Brand Name:	GREEN CREATIVE
Model Number:	7MR16G3DIM/927FL36
Electrical Specification:	Rated Voltage: 12 V AC Frequency: 60 Hz Wattage: 7 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 :	2013-08-17	**Test Period:**	2013-08-22 ~ 2013-08-28

Tested By	Approved By
Jason Zhang / Jason Zhang	/ Johnson Zhao
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	017728-S001	N/A	Evaluate by customer
2.	Goniophotometer Test	017728-S001	N/A	Evaluate by customer

Deviation from Test Method (*if any*)

N/A

Remark *(if any)*

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:	25.4º C

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	2013-08-15	2014-08-14

Test Sample

017728-S001

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	12.00	60	0.670	7.38	0.919	Base up	60	50

Test Type	CCT (K)	CRI (Ra)	R9	Luminous Flux (lm)	Luminous Efficacy (lm/W)
Output	2761	95.5	96	429.0	58.1

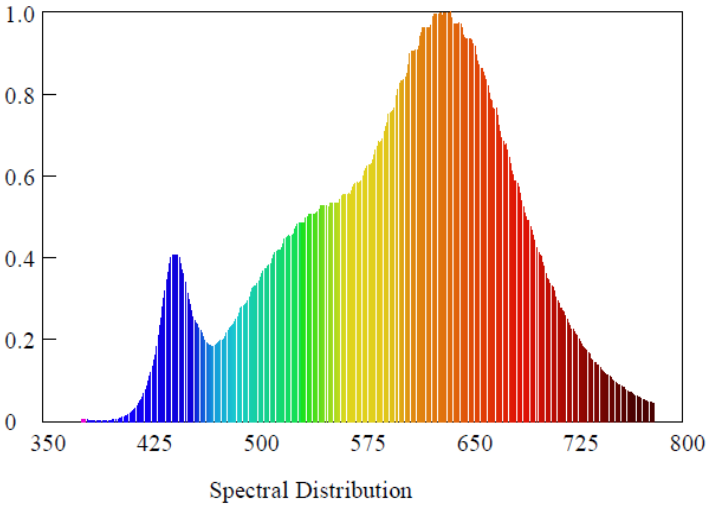
Test Report

Test Condition

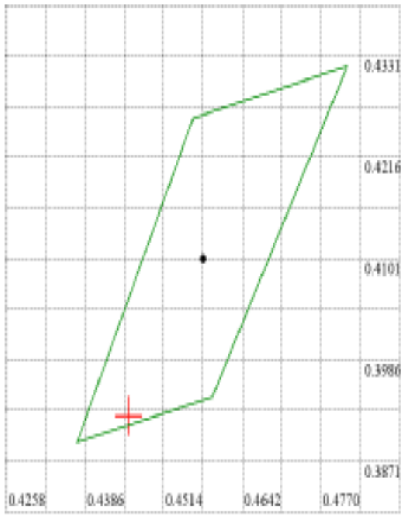
Temperature: 25.4°C RH: ----%

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

Spectroradiometric Parameters



Spectral Distribution



Nominal CCT:LED_2700K
x0=0.4457 y0=0.3923

Chromaticity Coordinates: x=0.4457 y=0.3923 u'=0.2615 v'=0.518

Correlated Color Temperature: 2761 K Dominant Wavelength: 585.0 nm(E)

Luminous Flux: 428.980 lm Purity: 0.5156

Chromaticity Difference: -0.00572Duv Peak Wavelength: 636.7 nm

Color Ratio: Kr=45.9% Kg=46.0% Kb=8.0%

Bandwidth: 146.9nm Radiant Flux: 1.584 W

Rendering Index: Ra=95.5

R1=96 R2=97 R3=96 R4=92 R5=95 R6=94 R7=96 R8=97

R9=97 R10=96 R11=89 R12=94 R13=95 R14=97 R15=97

Test Report

Test No.2: Goniophotometer Test

Environmental Conditions

Temperature:	25.2 º C

Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
GVS-LE-GS003	Goniophotometer	Before Use	Before Use
GVS-LE-FS019	Measurement Standard Lamp	2012-09-28	2013-09-27
GVS-LE-CA006	Digital Calliper	2013-08-16	2014-08-15

Test Sample

017728-S001

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 sample was 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.

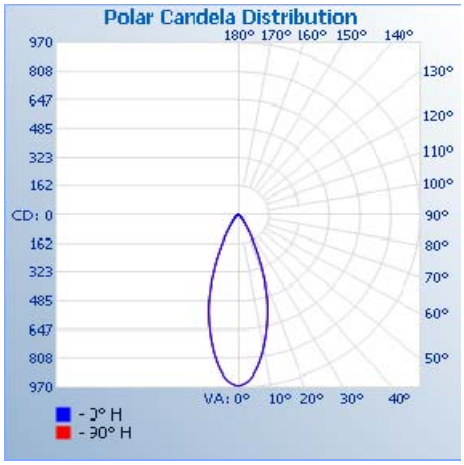
Test Results

Test Type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation	Opreate time (Min.)	Stabilization time (Min.)
Input	11.98	60	0.632	6.91	0.913	Base up	100	50

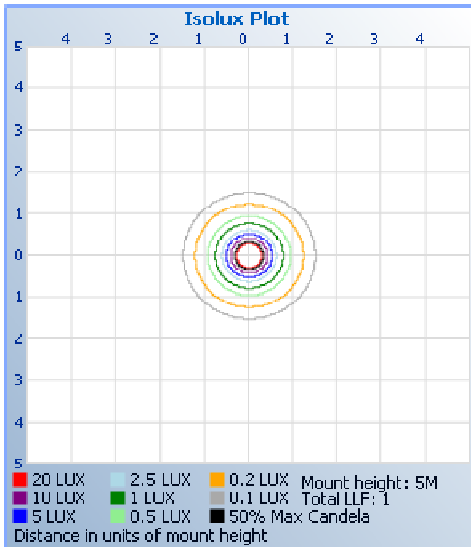
Test Type	Flux (lm)	Field angle (10%)		Beam angle (50%)		Luminous Efficacy (lm/W)
		Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread	
output	455.5	64.5	64.5	36.2	36.2	65.9

Test Report

Light Distribution Curve



Isolux Plot



Test Report

Zonal Lumen Tabulation

Zonal Lumen Summary		
Zone	Lumens	% Luminaire
0-30	355.1	78%
0-40	400.6	87.9%
0-60	438.0	96.2%
60-90	17.4	3.8%
70-100	8.1	1.8%
90-120	0.0	0%
0-90	455.4	100%
90-180	0.0	0%
0-180	455.5	100%

Lumens Per Zone					
Zone	Lumens	% Total	Zone	Lumens	% Total
0-5	22.3	4.9%	90-95	0.0	0%
5-10	59.3	13.0%	95-100	0	0%
10-15	79.6	17.5%	100-105	0	0%
15-20	82.2	18.1%	105-110	0	0%
20-25	66.6	14.6%	110-115	0	0%
25-30	45.0	9.9%	115-120	0	0%
30-35	27.7	6.1%	120-125	0	0%
35-40	17.8	3.9%	125-130	0	0%
40-45	12.9	2.8%	130-135	0	0%
45-50	10.1	2.2%	135-140	0	0%
50-55	8.0	1.8%	140-145	0	0%
55-60	6.4	1.4%	145-150	0	0%
60-65	5.2	1.1%	150-155	0.0	0%
65-70	4.2	0.9%	155-160	0.0	0%
70-75	3.4	0.7%	160-165	0.0	0%
75-80	2.6	0.6%	165-170	0.0	0%
80-85	1.6	0.4%	170-175	0.0	0%
85-90	0.5	0.1%	175-180	0.0	0%

Test Report

Intensity Data(cd)

Candela Table - Type C																	
	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	962	962	962	962	962	962	962	962	962	962	962	962	962	962	962	962	962
1	958	958	958	958	958	958	958	958	958	958	958	958	958	958	958	958	958
2	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950	950
3	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940	940
4	926	926	926	926	926	926	926	926	926	926	926	926	926	926	926	926	926
5	906	906	906	906	906	906	906	906	906	906	906	906	906	906	906	906	906
6	881	881	881	881	881	881	881	881	881	881	881	881	881	881	881	881	881
7	854	854	854	854	854	854	854	854	854	854	854	854	854	854	854	854	854
8	825	825	825	825	825	825	825	825	825	825	825	825	825	825	825	825	825
9	793	793	793	793	793	793	793	793	793	793	793	793	793	793	793	793	793
10	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760
11	726	726	726	726	726	726	726	726	726	726	726	726	726	726	726	726	726
12	693	693	693	693	693	693	693	693	693	693	693	693	693	693	693	693	693
13	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660	660
14	627	627	627	627	627	627	627	627	627	627	627	627	627	627	627	627	627
15	594	594	594	594	594	594	594	594	594	594	594	594	594	594	594	594	594
16	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560	560
17	524	524	524	524	524	524	524	524	524	524	524	524	524	524	524	524	524
18	486	486	486	486	486	486	486	486	486	486	486	486	486	486	486	486	486
19	447	447	447	447	447	447	447	447	447	447	447	447	447	447	447	447	447
20	409	409	409	409	409	409	409	409	409	409	409	409	409	409	409	409	409
25	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240	240
30	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128	128
35	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69	69
40	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42	42
45	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29	29
50	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21	21
55	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16	16
60	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
65	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
70	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
75	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
80	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
85	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
90	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
100	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
110	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
120	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
130	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
140	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
150	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
165	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
175	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

Test Report

Photos of sample

******************************END OF TEST REPORT******************************