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:	+86 21-62320308	**Email address:**	guillaume@gc-lighting.com

Manufacturer:	GREEN CREATIVE
Country of Origin:	China
Country of Export:	US & CANADA
Product Description:	Lamp type: LED Lamp Total amount of light source: 24 pcs The manufacturer of light source: Samsung The model number of light source: SPMWHT541MD5WAT0S2
Brand Name	GREEN CREATIVE
Model Number:	9.5A19G3DIM/840WB
Electrical Specification:	Rated Voltage: 120 V AC Rated Frequency: 60 Hz Rated Wattage: 9.5 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 :	2013-08-16	**Test Period:**	2013-08-16 ~ 2013-08-20

Tested By	**Approved By**
Sean Xiao / Sean Xiao	/ 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	17541-S1	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:	25.1º C

Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
GVS-LE-PE003	Integrating Sphere	Before Use	Before Use
GVS-LE-FS007	Measurement Standard Lamp	08/15/2013	08/14/2014

Test Sample

17541-S1

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	119.95	60	0.084	9.37	0.935	Base up	70	50

Test Type	CCT (K)	Luminous Flux (lm)	Color Rendering Index (Ra)	Luminous Efficacy (lm/W)
Output	4150	931.7	86.0	99.4

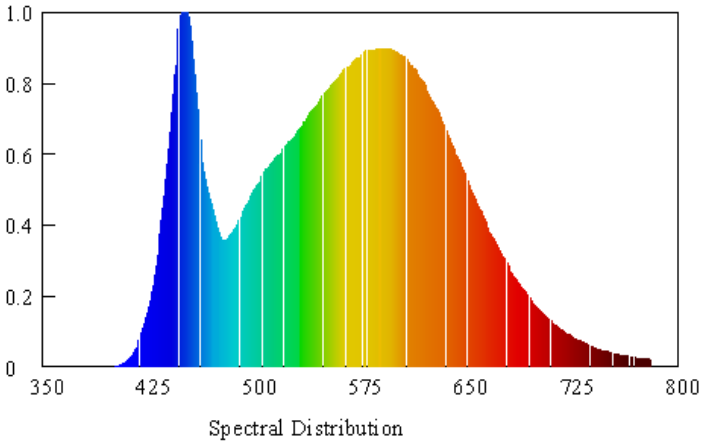
Test Report

Test Condition

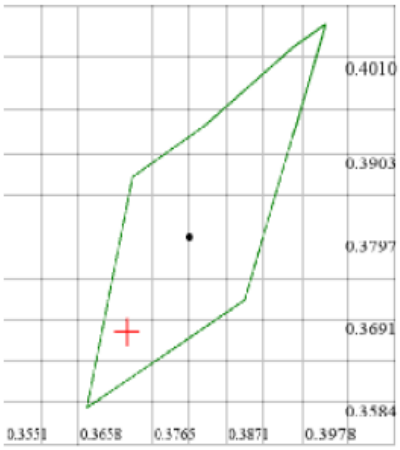
Temperature: 25.1°C | RH: ----%

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

Spectroradiometric Parameters



Spectral Distribution



Nominal CCT:LED_4000K
x0=0.3728 y0=0.3675

Chromaticity Coordinates: x=0.3728 y=0.3675 u'=0.2238 v'=0.4963

Correlated Color Temperature: 4150 K | Dominant Wavelength: 578.0 nm(E)

Luminous Flux: 931.666 lm | Purity: 0.2221

Chromaticity Difference: -0.0021Duv | Peak Wavelength: 452.5 nm

Color Ratio: Kr=37.5% Kg=52.3% Kb=10.1%

Bandwidth: 27.4nm | Radiant Flux: 2.97 W

Rendering Index: Ra=86.0

R1=85	R2=92	R3=95	R4=84	R5=85	R6=87	R7=88	R8=71
R9=28	R10=80	R11=83	R12=68	R13=87	R14=97	R15=81	

Test Report

Test No.2: Goniophotometer Test

Environmental Conditions

Temperature:	24.8 ° C

Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
GVS-LE-GS002	Goniophotometer	Before Use	Before Use
GVS-LE-FS019	Measurement Standard Lamp	08/15/2013	08/14/2014
GVS-LE-CA008	Digital Calliper	08/04/2013	08/03/2014

Test Sample

17541-S1

Test Method

The sample was tested according to the IES LM-79-2008.
The ambient temperature was 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.

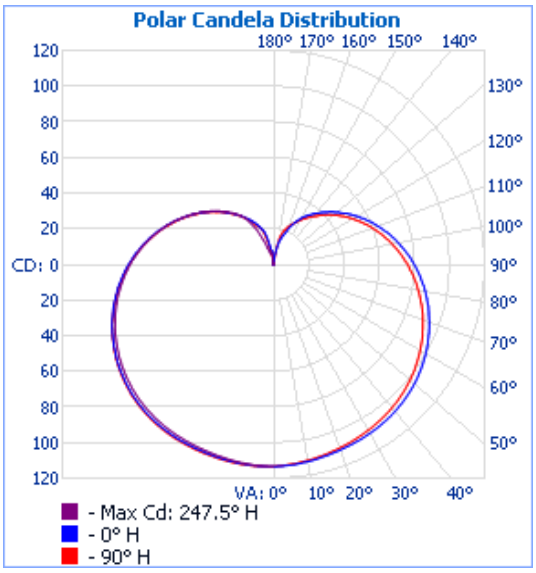
Test Results

Test Type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation	Opreate time (Min.)	Stabilization time (Min.)
Input	120.03	60	0.084	9.39	0.933	Base up	120	60

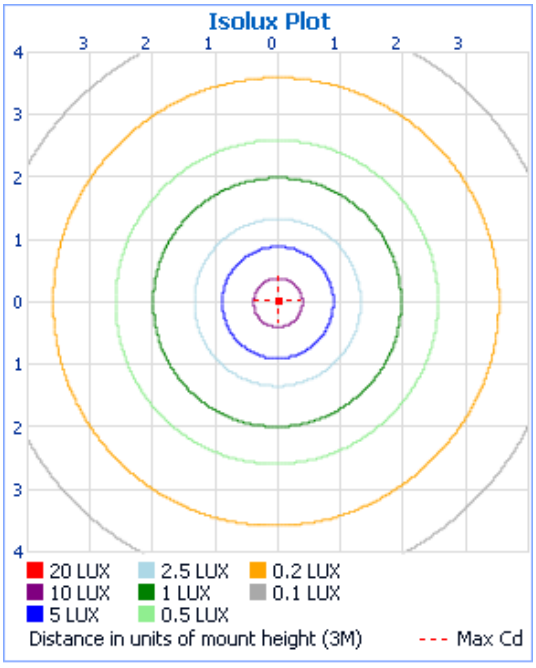
Test Type	Luminous Flux (lm)	Luminous Efficacy (lm/W)	Field angle (10%)		Beam angle (50%)	
			Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread
Output	949.4	101.1	N/A	N/A	235.5	231.5

Test Report

Light Distribution Curve



Illuminance at a Distance



Test Report

Zonal Lumen Tabulation

Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	93.8	9.9%
0-40	162.5	17.1%
0-60	337.9	35.6%
60-90	285.5	30.1%
70-100	271.4	28.6%
90-120	212.6	22.4%
0-90	623.4	65.7%
90-180	325.9	34.3%
0-180	949.4	100%

Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-10	10.8	1.1%	90-100	83.0	8.7%
10-20	31.7	3.3%	100-110	71.4	7.5%
20-30	51.3	5.4%	110-120	58.2	6.1%
30-40	68.7	7.2%	120-130	44.7	4.7%
40-50	82.9	8.7%	130-140	32.1	3.4%
50-60	92.5	9.7%	140-150	20.9	2.2%
60-70	97.1	10.2%	150-160	11.2	1.2%
70-80	96.7	10.2%	160-170	4.1	0.4%
80-90	91.7	9.7%	170-180	0.3	0%

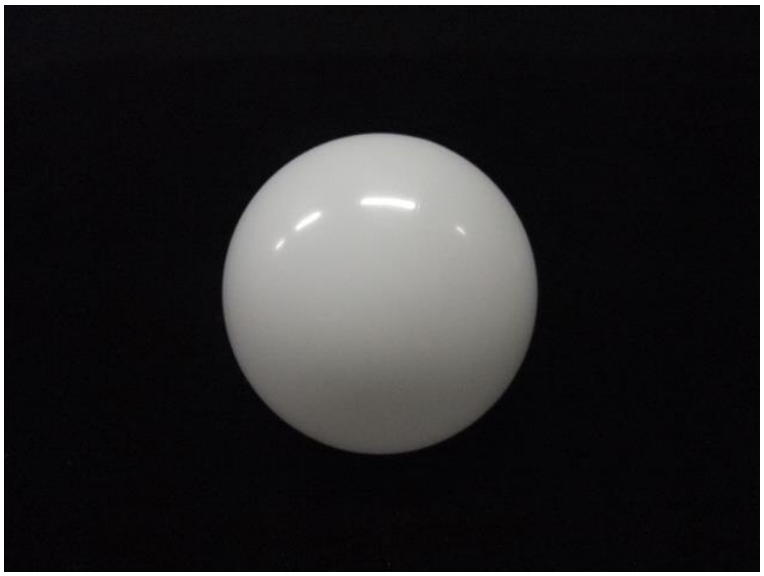
Test Report

Intensity Data(cd)

Candela Table - Type C																	
γ/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	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113	113
5	113	113	112	112	112	113	113	113	113	113	114	114	114	113	113	113	113
10	112	112	112	111	112	112	112	113	113	113	114	114	113	113	113	113	112
15	111	111	111	110	111	111	112	112	113	113	113	114	113	113	113	112	111
20	111	110	110	109	110	110	111	112	112	113	113	113	113	113	112	111	111
25	110	109	108	108	109	109	110	111	112	113	113	113	113	112	112	111	110
30	109	108	107	107	107	109	110	111	112	112	113	113	113	112	111	110	109
35	108	107	106	105	106	108	109	110	111	112	112	112	112	111	111	110	108
40	108	106	105	104	105	106	108	109	110	111	111	112	111	111	110	109	108
45	106	104	103	102	103	105	106	108	109	110	110	111	110	109	109	108	106
50	104	102	101	101	101	103	105	106	108	108	108	109	108	108	107	106	104
55	102	100	98	99	99	100	103	104	106	106	106	107	106	106	105	104	102
60	100	98	96	96	96	98	100	102	103	104	104	104	104	103	103	102	100
65	97	95	93	93	93	95	97	99	101	101	101	102	101	101	100	99	97
70	94	92	90	90	90	92	94	96	98	98	98	99	98	97	97	96	94
75	91	88	86	87	87	89	91	93	94	94	94	95	94	94	94	93	91
80	88	85	83	83	83	85	87	89	90	91	91	91	90	90	90	89	88
85	84	81	79	80	80	81	84	85	87	87	87	87	86	86	86	85	84
90	80	77	75	76	76	77	79	81	83	82	82	83	82	82	82	82	80
95	76	73	71	72	72	73	75	77	78	78	84	79	78	78	78	77	76
100	72	69	66	68	68	69	71	73	74	74	79	74	73	74	74	73	72
105	68	65	61	64	64	65	67	68	69	69	75	70	69	69	69	69	68
110	63	61	57	60	60	60	62	64	64	64	70	65	64	65	65	64	63
115	59	57	53	55	56	56	58	59	60	60	65	60	59	60	60	60	59
120	54	52	49	51	52	52	54	55	55	55	61	56	55	55	56	55	54
125	50	48	45	47	47	48	49	50	51	50	56	51	50	51	51	51	50
130	46	44	41	43	43	44	45	46	46	46	51	47	46	47	47	47	46
135	41	40	37	39	39	39	41	41	42	42	46	42	42	42	42	42	41
140	37	36	33	35	35	36	37	37	38	37	42	38	37	38	38	38	37
145	34	33	30	32	32	32	33	33	34	33	37	33	33	34	34	34	34
150	29	29	26	28	28	28	29	29	30	30	33	27	29	30	28	28	29
155	24	25	22	25	25	25	25	26	26	26	27	17	25	26	19	19	24
160	18	19	17	21	22	21	22	21	22	22	19	11	22	20	14	10	18
165	14	15	11	17	18	17	18	17	18	16	15	10	15	13	8	6	14
170	8	10	1	9	7	9	12	12	9	7	11	5	4	1	1	6	8
175	1	1	0	1	0	0	1	2	3	3	5	0	1	2	1	0	1
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**********