



NVLAP Lab Code: 200952-0

### Verification Services

Project No.: 10242598-2  
Report No.: 10243598-2a  
Report Issued Date: 2014-03-24



# Test Report

Customer Company & Address:			
GREEN CREATIVE.			
Add: Room 1206-7 ,New Victory House , 93-103 Wing Lok Street, Central ,HONG KONG			
<b>Contact Person:</b>	Guillaume Vidal		
<b>Telephone:</b>	15900659099	<b>Fax/Email Address:</b>	guillaume@gc-lighting.com

<b>Manufacturer:</b>	GREEN CREATIVE
<b>Country of Origin:</b>	China
<b>Country of Export:</b>	USA, Canada
<b>Product Description:</b>	Lamp type: PAR38 Total amount of light source: 1pcs The manufacturer of light source: CITIZEN The model number of light source: CL030
<b>Brand Name:</b>	GREEN CREATIVE
<b>Model Number:</b>	19PAR38G3/830FL40/277V
<b>Electrical Specification:</b>	Rated voltage: 120~277 Vac Frequency: 60 Hz Wattage: 19 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			
<b>Telephone:</b>	+86 20 28667188	<b>Fax:</b>	+86 20 83486605

<b>Receipt of Test Samples :</b>	2014-02-19	<b>Test Period:</b>	2014-02-19 ~ 2014-03-24
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Tested By	Approved By
 / Jackson Zeng	 / Johnson Zhao
<b>Test Personnel Name &amp; Signatory</b>	<b>Approval Name &amp; Signatory</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.



# Test Report

## Statement of Results

Test Flow	Test Method	Sample ID (Lab)	Sample Serial No.	Pass/Fail/NA
1.	Integrating Sphere Test	1828143-S004	N/A	Evaluate by customer
2.	Goniophotometer Test		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:	25.1 °C
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### Test Equipment

Equipment ID	Equipment Name	Last Calibration Date	Calibration Due Date
GVS-LE-PE003	Integrating Sphere	Before Use	Before Use
GVS-LE-FS022	Measurement Standard Lamp	12/23/2013	12/22/2014

### Test Sample

1828143-S004
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### 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 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 (W)	Power Factor	Operate time (Min.)	Stabilization time (Min.)
Input	120.09	60	0.170	19.94	0.975	60	50

Test Type	CCT (K)	Luminous Flux (lm)	Color Rendering Index Ra	R9	Luminous Efficacy (lm/W)
Output	2975	1375.0	84.0	8	68.9



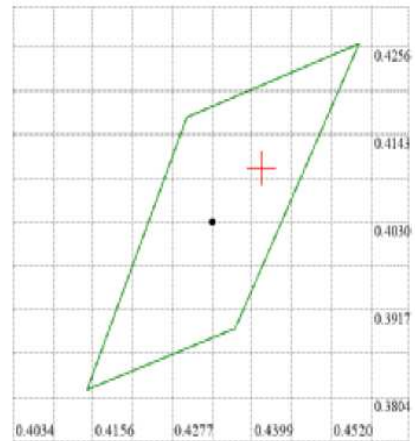
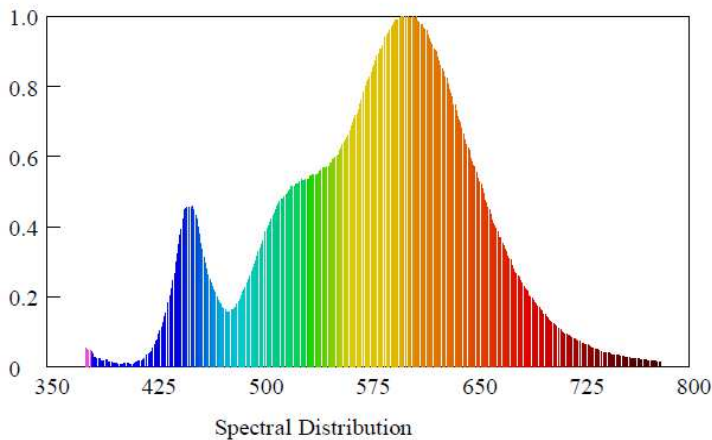
# Test Report

## Test Condition

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

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

## Spectroradiometric Parameters



Nominal CCT: LED\_3000K  
 $x_0=0.4413$   $y_0=0.4100$

Chromaticity Coordinates:  $x=0.4413$   $y=0.4100$   $u'=0.2508$   $v'=0.5243$

Correlated Color Temperature: 2975 K

Dominant Wavelength: 581.0 nm(E)

Luminous Flux: 1374.997 lm

Purity: 0.5566

Chromaticity Difference: 0.0018Duv

Peak Wavelength: 601.5 nm

Color Ratio:  $K_r=45.3\%$   $K_g=47.3\%$   $K_b=7.4\%$

Bandwidth: 134.2nm

Radiant Flux: 3.937 W

Rendering Index:  $R_a=84.0$

$R_1=83$   $R_2=91$   $R_3=97$   $R_4=84$   $R_5=83$   $R_6=90$   $R_7=84$   $R_8=60$

$R_9=8$   $R_{10}=80$   $R_{11}=86$   $R_{12}=73$   $R_{13}=86$   $R_{14}=99$   $R_{15}=74$



# Test Report

## Test No.2: Goniophotometer Test

### Environmental Conditions

Temperature: 25.3° 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	08/23/2013	08/22/2014
GVS-LE-CA008	Digital Calliper	08/09/2013	08/08/2014

### Test Sample

1828143-S004

### 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

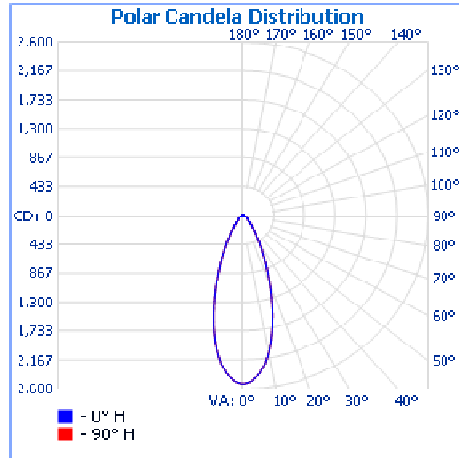
Test Type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Operate time (Min.)	Stabilization time (Min.)
Input	120.12	60	0.171	19.93	0.970	120	60

Test Type	Flux (lm)	Field angle (10%)		Beam angle (50%)		Luminous Efficacy (lm/W)
		Horizontal Spread	Vertical Spread	Horizontal Spread	Vertical Spread	
Output	1347.7	69.7	69.7	36.5	36.5	67.63

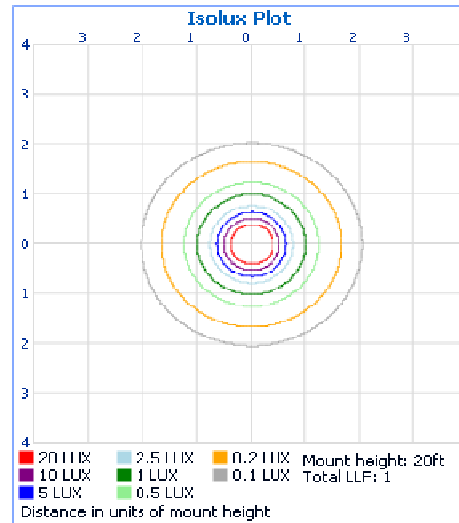


# Test Report

## Light Distribution Curve



## Isolux Plot





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# Test Report

## Zonal Lumen Tabulation

### Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	973.5	72.2%
0-40	1,134.3	84.2%
0-60	1,276.1	94.7%
60-90	70.8	5.3%
70-100	30.2	2.2%
90-120	0.2	0%
0-90	1,346.9	99.9%
90-180	0.7	0.1%
0-180	1,347.7	100%

### Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-5	58.8	4.4%	90-95	0.1	0%
5-10	160.0	11.9%	95-100	0.0	0%
10-15	216.9	16.1%	100-105	0.0	0%
15-20	218.6	16.2%	105-110	0.0	0%
20-25	182.0	13.5%	110-115	0.0	0%
25-30	137.2	10.2%	115-120	0.0	0%
30-35	96.5	7.2%	120-125	0.0	0%
35-40	64.3	4.8%	125-130	0.0	0%
40-45	47.1	3.5%	130-135	0.0	0%
45-50	37.2	2.8%	135-140	0.0	0%
50-55	31.1	2.3%	140-145	0.0	0%
55-60	26.5	2.0%	145-150	0.1	0%
60-65	22.4	1.7%	150-155	0.1	0%
65-70	18.3	1.4%	155-160	0.1	0%
70-75	14.3	1.1%	160-165	0.1	0%
75-80	9.6	0.7%	165-170	0.1	0%
80-85	4.9	0.4%	170-175	0.0	0%
85-90	1.3	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	2523	2523	2523	2523	2523	2523	2523	2523	2523	2523	2523	2523	2523	2523	2523	2523	2523
1	2516	2516	2516	2516	2516	2516	2516	2516	2516	2516	2516	2516	2516	2516	2516	2516	2516
2	2501	2501	2501	2501	2501	2501	2501	2501	2501	2501	2501	2501	2501	2501	2501	2501	2501
3	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476	2476
4	2440	2440	2440	2440	2440	2440	2440	2440	2440	2440	2440	2440	2440	2440	2440	2440	2440
5	2401	2401	2401	2401	2401	2401	2401	2401	2401	2401	2401	2401	2401	2401	2401	2401	2401
6	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350	2350
7	2293	2293	2293	2293	2293	2293	2293	2293	2293	2293	2293	2293	2293	2293	2293	2293	2293
8	2232	2232	2232	2232	2232	2232	2232	2232	2232	2232	2232	2232	2232	2232	2232	2232	2232
9	2156	2156	2156	2156	2156	2156	2156	2156	2156	2156	2156	2156	2156	2156	2156	2156	2156
10	2076	2076	2076	2076	2076	2076	2076	2076	2076	2076	2076	2076	2076	2076	2076	2076	2076
11	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985	1985
12	1894	1894	1894	1894	1894	1894	1894	1894	1894	1894	1894	1894	1894	1894	1894	1894	1894
13	1802	1802	1802	1802	1802	1802	1802	1802	1802	1802	1802	1802	1802	1802	1802	1802	1802
14	1702	1702	1702	1702	1702	1702	1702	1702	1702	1702	1702	1702	1702	1702	1702	1702	1702
15	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595
16	1490	1490	1490	1490	1490	1490	1490	1490	1490	1490	1490	1490	1490	1490	1490	1490	1490
17	1390	1390	1390	1390	1390	1390	1390	1390	1390	1390	1390	1390	1390	1390	1390	1390	1390
18	1289	1289	1289	1289	1289	1289	1289	1289	1289	1289	1289	1289	1289	1289	1289	1289	1289
19	1184	1184	1184	1184	1184	1184	1184	1184	1184	1184	1184	1184	1184	1184	1184	1184	1184
20	1085	1085	1085	1085	1085	1085	1085	1085	1085	1085	1085	1085	1085	1085	1085	1085	1085
25	699	699	699	699	699	699	699	699	699	699	699	699	699	699	699	699	699
30	423	423	423	423	423	423	423	423	423	423	423	423	423	423	423	423	423
35	247	247	247	247	247	247	247	247	247	247	247	247	247	247	247	247	247
40	153	153	153	153	153	153	153	153	153	153	153	153	153	153	153	153	153
45	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107	107
50	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80	80
55	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
60	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51	51
65	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
70	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32	32
75	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23	23
80	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
85	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
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
155	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	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
170	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
175	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
180	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

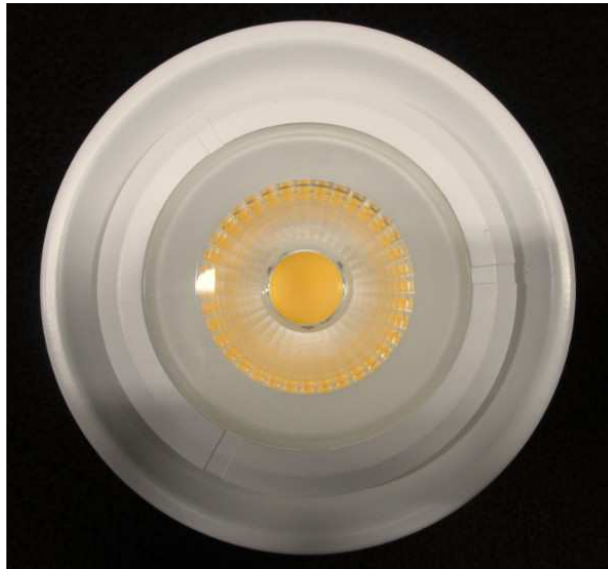




# Test Report

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## Photos of sample



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