



Verification Services

Project No.: 4786480430-2

Report No.: 4786480430-2a

Report Issued Date: 2014-12-15



Test Report

Customer Company & Address:			
SORAA Inc ADD: 6500 Kaiser Dr, Fremont, CA 94555			
Contact Person:	Steve Yang		
Telephone:	510-4567183	Fax/Email Address:	SYang@soraa.com

Manufacturer:	SORAA Inc.		
Country of Origin:	USA		
Country of Export:	USA		
Product Description:	Lamp Type: PAR30L LED Lamp Total Amount Of Light Source: 1 pc		
Model Number:	SP30L-18-25D-927-03		
Electrical Specification:	120 V AC, 60 Hz, 18.5W		

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 :	2014-12-01	Test Period:	2014-12-02 ~ 2014-12-09
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Tested By	Approved By
 / Jackson Zeng	 / Xavier Xiong
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.



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Statement of Results

Test Flow	Test Method	Sample ID (Lab)	Sample Serial No.	Pass/Fail/NA
1.	Integrating Sphere Test	2009976-S001	N/A	Evaluate by customer
2.	Goniophotometer Test	2009976-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:	25.1° 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-FS023	Measurement Standard Lamp	12/23/2013	12/22/2014

Test Sample

2009976-S001

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 (W)	Power Factor	Orientation	Operate time (Min.)	Stabilization time (Min.)
Input	119.93	60	0.156	18.48	0.990	Base up	58	50

Test Type	CCT (K)	Luminous Flux (lm)	Color Rendering Index Ra	Luminous Efficacy (lm/W)
Output	2708	1032.6	96.6	55.9



Test Report

Test Condition

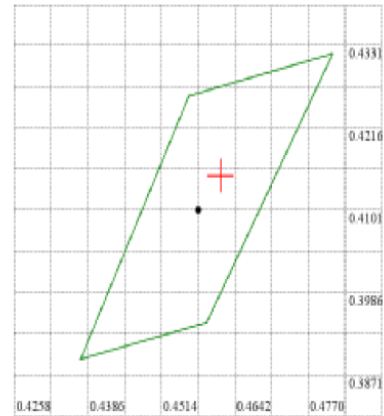
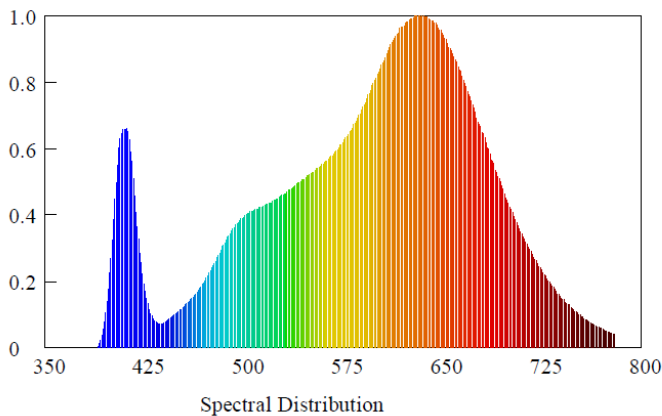
Temperature: 25.1°C

RH: ----%

Spectrum Range: 380-780 nm

Scan Step: 1 nm

Spectroradiometric Parameters



Nominal CCT:Manual
x0=0.4617 y0=0.4149

Chromaticity Coordinates: $x=0.4617$ $y=0.4149$ $u'=0.2618$ $v'=0.5293$

Correlated Color Temperature: 2708 K

Dominant Wavelength: 582.0 nm(E)

Luminous Flux: 1032.563 lm

Purity: 0.6350

Chromaticity Difference: 0.0014Duv

Peak Wavelength: 632.8 nm

Color Ratio: $K_r=46.1\%$ $K_g=45.4\%$ $K_b=8.6\%$

Color Tolerance(SDCM): 0

Bandwidth: 148.1nm

Radiant Flux: 3.863 W

Rendering Index: $R_a=96.6$

R1=97 R2=98 R3=98 R4=94 R5=95 R6=94 R7=99 R8=97

R9=93 R10=96 R11=90 R12=78 R13=97 R14=99 R15=98



Test Report

Test No.2: Goniophotometer Test

Environmental Conditions

Temperature: 25.1 °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	08/19/2014	08/18/2015
GVS-LE-CA008	Digital Calliper	09/18/2014	09/17/2015

Test Sample

2009976-S001

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

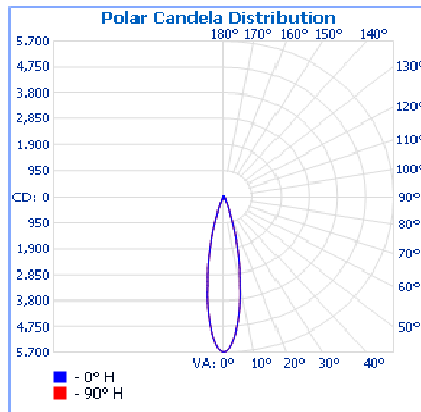
Test Type	Voltage (V AC)	Frequency (Hz)	Current (A)	Power (W)	Power Factor	Orientation	Operate time (Min.)	Stabilization time (Min.)
Input	120.05	60	0.156	18.46	0.990	Base up	70	30

Test Type	Flux (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	1043.1	5683	40.0	40.0	21.9	21.9	56.5

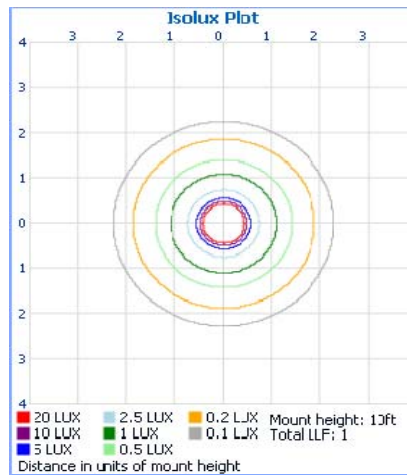


Test Report

Light Distribution Curve



Isolux Plot





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Zonal Lumen Tabulation

Zonal Lumen Summary

Zone	Lumens	% Luminaire
0-30	941.0	90.2%
0-40	972.0	93.2%
0-60	1,018.7	97.7%
60-90	23.9	2.3%
70-100	8.8	0.8%
90-120	0.0	0%
0-90	1,042.6	100%
90-180	0.5	0%
0-180	1,043.1	100%

Lumens Per Zone

Zone	Lumens	% Total	Zone	Lumens	% Total
0-5	125.7	12.0%	90-95	0.0	0%
5-10	283.0	27.1%	95-100	0.0	0%
10-15	274.5	26.3%	100-105	0.0	0%
15-20	166.6	16.0%	105-110	0.0	0%
20-25	66.7	6.4%	110-115	0.0	0%
25-30	24.5	2.3%	115-120	0.0	0%
30-35	16.6	1.6%	120-125	0.0	0%
35-40	14.4	1.4%	125-130	0.0	0%
40-45	13.2	1.3%	130-135	0.0	0%
45-50	12.2	1.2%	135-140	0.0	0%
50-55	11.3	1.1%	140-145	0.0	0%
55-60	10.0	1.0%	145-150	0.0	0%
60-65	8.4	0.8%	150-155	0.1	0%
65-70	6.7	0.6%	155-160	0.1	0%
70-75	4.8	0.5%	160-165	0.1	0%
75-80	2.7	0.3%	165-170	0.1	0%
80-85	1.2	0.1%	170-175	0.1	0%
85-90	0.2	0.0%	175-180	0.0	0%



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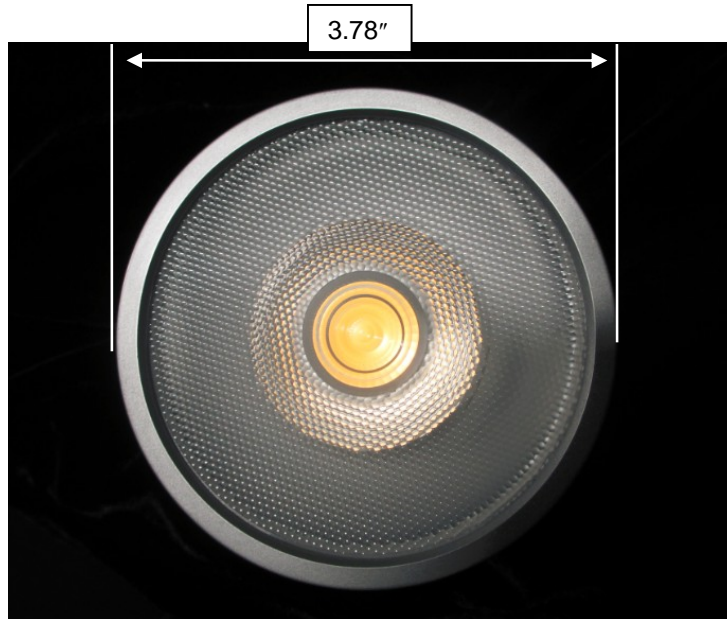
Intensity Data(cd)

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	5683	5683	5683	5683	5683	5683	5683	5683	5683	5683	5683	5683	5683	5683	5683	5683	5683
1	5649	5649	5649	5649	5649	5649	5649	5649	5649	5649	5649	5649	5649	5649	5649	5649	5649
2	5538	5538	5538	5538	5538	5538	5538	5538	5538	5538	5538	5538	5538	5538	5538	5538	5538
3	5363	5363	5363	5363	5363	5363	5363	5363	5363	5363	5363	5363	5363	5363	5363	5363	5363
4	5142	5142	5142	5142	5142	5142	5142	5142	5142	5142	5142	5142	5142	5142	5142	5142	5142
5	4872	4872	4872	4872	4872	4872	4872	4872	4872	4872	4872	4872	4872	4872	4872	4872	4872
6	4583	4583	4583	4583	4583	4583	4583	4583	4583	4583	4583	4583	4583	4583	4583	4583	4583
7	4260	4260	4260	4260	4260	4260	4260	4260	4260	4260	4260	4260	4260	4260	4260	4260	4260
8	3905	3905	3905	3905	3905	3905	3905	3905	3905	3905	3905	3905	3905	3905	3905	3905	3905
9	3522	3522	3522	3522	3522	3522	3522	3522	3522	3522	3522	3522	3522	3522	3522	3522	3522
10	3135	3135	3135	3135	3135	3135	3135	3135	3135	3135	3135	3135	3135	3135	3135	3135	3135
11	2830	2830	2830	2830	2830	2830	2830	2830	2830	2830	2830	2830	2830	2830	2830	2830	2830
12	2527	2527	2527	2527	2527	2527	2527	2527	2527	2527	2527	2527	2527	2527	2527	2527	2527
13	2205	2205	2205	2205	2205	2205	2205	2205	2205	2205	2205	2205	2205	2205	2205	2205	2205
14	1888	1888	1888	1888	1888	1888	1888	1888	1888	1888	1888	1888	1888	1888	1888	1888	1888
15	1609	1609	1609	1609	1609	1609	1609	1609	1609	1609	1609	1609	1609	1609	1609	1609	1609
16	1355	1355	1355	1355	1355	1355	1355	1355	1355	1355	1355	1355	1355	1355	1355	1355	1355
17	1109	1109	1109	1109	1109	1109	1109	1109	1109	1109	1109	1109	1109	1109	1109	1109	1109
18	907	907	907	907	907	907	907	907	907	907	907	907	907	907	907	907	907
19	723	723	723	723	723	723	723	723	723	723	723	723	723	723	723	723	723
20	569	569	569	569	569	569	569	569	569	569	569	569	569	569	569	569	569
25	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156	156
30	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67	67
35	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48	48
40	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
50	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
55	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24	24
60	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
65	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
70	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
75	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
80	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
85	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
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

Photos of sample



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