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## Photometric Test Report

Relevant Standards  
IES LM-79-2008, ANSI C82.77-10-2014, CIE 13.3-1995  
CIE 15-2004, ANSI C78.377-2017, IES TM-30-2018

**Prepared For**  
**SORAA INC**

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**Catalog Number**

**ALS65-36D**

Order Number

12857642

Test Number

12857642.02

**Test Date**

2019-05-15 - 2019-05-16

Prepared By

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Approved By

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The results contained in this report pertain only to the tested sample.  
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Laboratory results may not be representative of field performance  
Ballast factors have not been applied

Testing was performed in a 2-meter integrating sphere using the  $4\pi$  geometry method.  
Absorption correction was employed for Sphere measurement



**Luminaire Description:** White cylindrical metal housing  
**Lamp:** White LED with optic below  
**Mounting:** Surface – Ceiling

**Luminaire**



**Luminaire Characteristics**  
Luminous Diameter: 2.50 in.

### Summary of Results

#### Integrating Sphere

Luminous Flux: 973.6 Lumens  
Efficacy: 56.37 lm/w  
CCT: 3045 K  
CRI (Ra): 94.3

#### Distribution

Total Luminaire Output: 948.3 Lumens  
Luminaire Efficacy: 54.8 lm/w  
Maximum Candela: 2728 Candela

#### Electrical Data at 120 VAC

Test Temperature: 25.1 °C  
Voltage: 120.2 VAC  
Current: 0.1485 A  
Power: 17.27 W  
Power Factor: 0.968  
Frequency: 60 Hz  
Current THD: 11.5 %



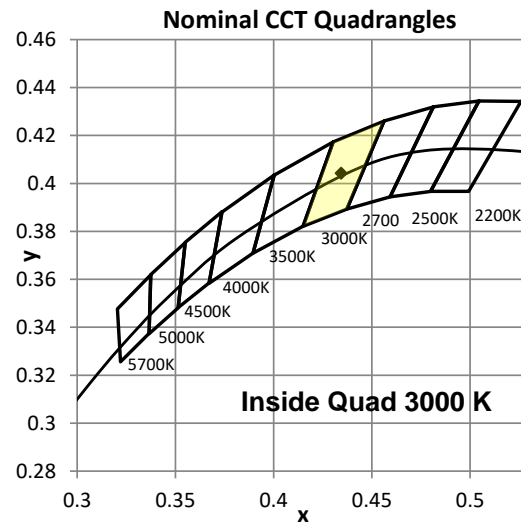
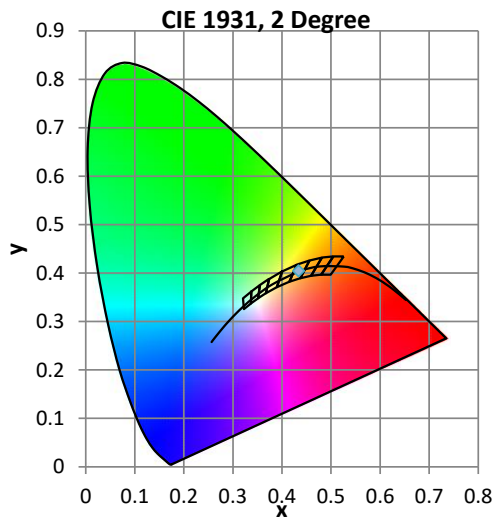
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.1 °C	120.2 VAC	0.1485 A	17.27 W	0.968	60 Hz	11.5 %

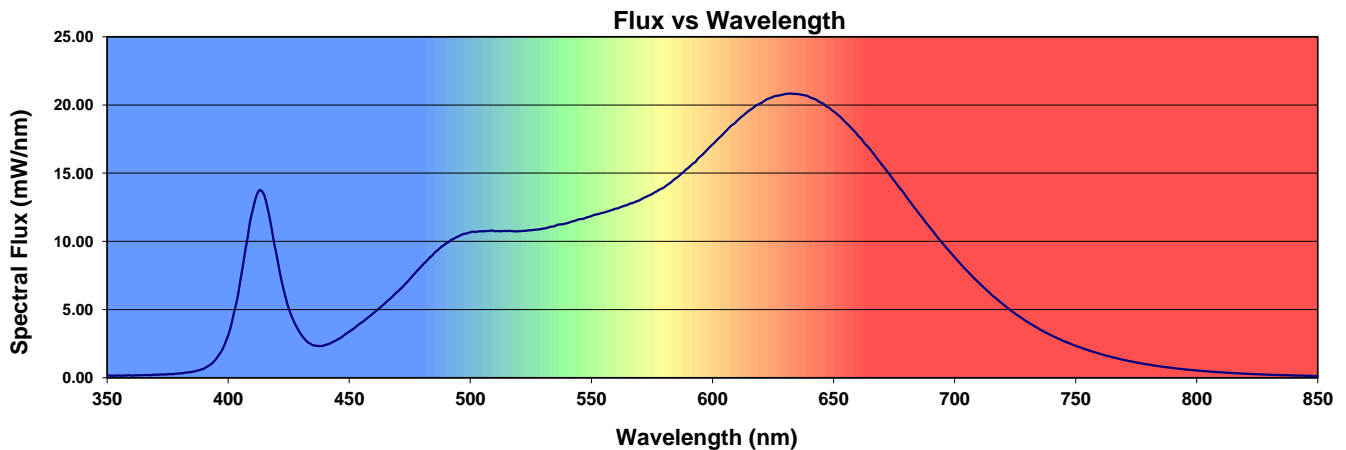
### Summary of Results

Total Output:	974 Lumens	Chromaticity (x):	0.4343
Efficacy:	56.4 lm/w	Chromaticity (y):	0.4043
CCT:	3045 K	Chromaticity (u'):	0.2488
CRI (Ra):	94.3	Chromaticity (v'):	0.5211
CRI (R9):	98.4	TM-30 Rf:	91.7
Peak Wavelength:	632 nm	TM-30 Rg:	98.7
Dominant Wavelength:	583 nm	Duv:	0.0004
S/P Ratio:	1.58		



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
94.3	94.2	95.0	95.6	92.9	92.5	89.3	97.0	98.4	98.4	87.9	88.5	76.0	93.8	98.0	97.3





## Distribution - Goniophotometer

### Distribution Test Conditions

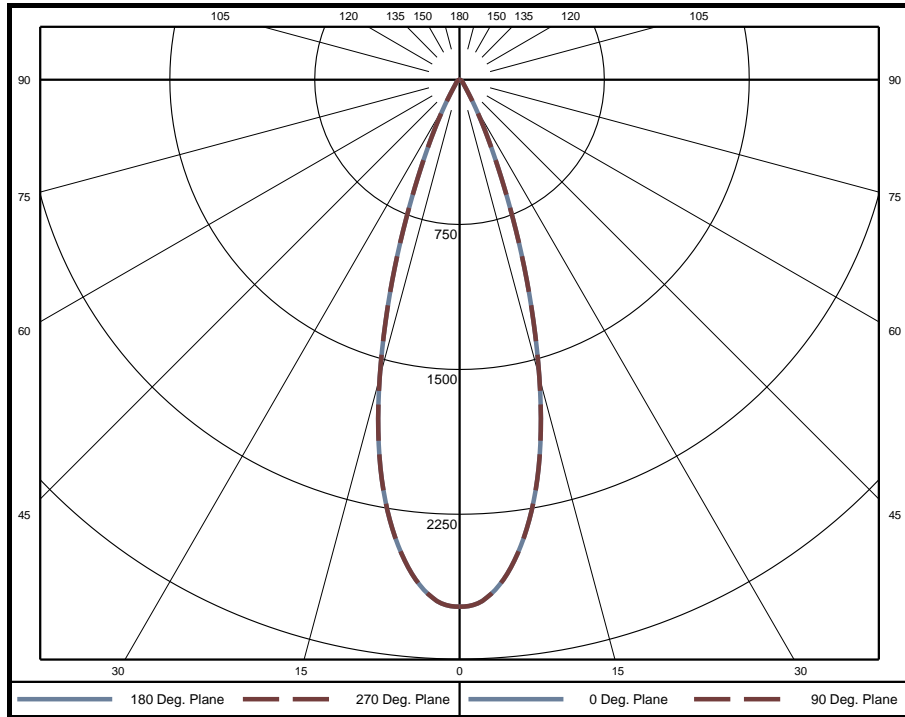
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.6 °C	120.1 VAC	0.1484 A	17.29 W	0.970	60 Hz	11.0 %

### Summary of Results

**Spacing Criteria**  
 0-180: 0.55  
 90-270: 0.55

**Total Lumen Output:** 948.3 Lumens  
**Luminaire Efficacy:** 54.8 lm/w  
**Maximum Candela:** 2728 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	63.8	6.7%	60-65	4.5	0.5%	120-125	0	0.0%
5-10	171.9	18.1%	65-70	3.4	0.4%	125-130	0	0.0%
10-15	225.7	23.8%	70-75	2.7	0.3%	130-135	0	0.0%
15-20	201.8	21.3%	75-80	1.9	0.2%	135-140	0	0.0%
20-25	127.7	13.5%	80-85	1.1	0.1%	140-145	0	0.0%
25-30	63.5	6.7%	85-90	0.3	0.0%	145-150	0	0.0%
30-35	28.8	3.0%	90-95	0	0.0%	150-155	0	0.0%
35-40	16.2	1.7%	95-100	0	0.0%	155-160	0	0.0%
40-45	11.6	1.2%	100-105	0	0.0%	160-165	0	0.0%
45-50	9.5	1.0%	105-110	0	0.0%	165-170	0	0.0%
50-55	8.0	0.8%	110-115	0	0.0%	170-175	0	0.0%
55-60	6.0	0.6%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	899	94.8%
0-60	935	98.5%
0-90	948	100.0%
90-180	0	0.0%



**Candela Tabulation**  
Horizontal Angle (Degrees)

Vertical Angle (Degrees)

	0	22.5	45	67.5	90	112.5	135	157.5	180	202.5	225	247.5	270	292.5	315	337.5
0	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728	2728
5	2598	2598	2598	2598	2598	2598	2598	2598	2598	2598	2598	2598	2598	2598	2598	2598
10	2211	2211	2211	2211	2211	2211	2211	2211	2211	2211	2211	2211	2211	2211	2211	2211
15	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595	1595
20	897	897	897	897	897	897	897	897	897	897	897	897	897	897	897	897
25	391	391	391	391	391	391	391	391	391	391	391	391	391	391	391	391
30	152	152	152	152	152	152	152	152	152	152	152	152	152	152	152	152
35	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
40	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37	37
45	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
50	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
60	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
65	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8	8
70	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
75	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
80	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
90	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
100	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
110	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
120	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
130	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
140	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
150	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
160	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
170	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
180	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

**Average Luminance (cd/m<sup>2</sup>)**  
Horizontal Angle (Degrees)

Vertical Angle (Degrees)

	0	45	90
0	861300	861300	861300
45	11840	11840	11840
55	8605	8605	8605
65	5852	5852	5852
75	5247	5247	5247
85	4447	4447	4447



### Coefficients of Utilization - Zonal Cavity Method

Effective Floor Cavity Reflectance 20%																		
Ceiling Cavity Reflectance	80				70				50			30			10			0
Wall Reflectance	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	10	0
Room Cavity Ratio (RCR)	** Values are expressed as percent of total lumen output delivered to the task surface **																	
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	112	110	108	112	110	108	106	106	104	103	102	101	100	99	98	97	95
2	110	106	102	100	108	104	101	98	101	98	96	98	96	94	95	94	92	91
3	106	100	96	93	104	99	95	92	97	93	91	94	92	89	92	90	88	87
4	102	96	91	88	100	95	90	87	93	89	86	91	88	85	89	86	84	83
5	98	91	87	83	97	91	86	83	89	85	82	87	84	81	86	83	81	80
6	95	88	83	79	93	87	82	79	85	82	79	84	81	78	83	80	78	76
7	92	84	79	76	90	84	79	76	82	78	75	81	78	75	80	77	75	74
8	88	81	76	73	87	80	76	73	79	75	73	79	75	72	78	74	72	71
9	86	78	73	70	85	78	73	70	77	73	70	76	72	70	75	72	70	68
10	83	75	71	68	82	75	71	68	74	70	68	74	70	67	73	70	67	66

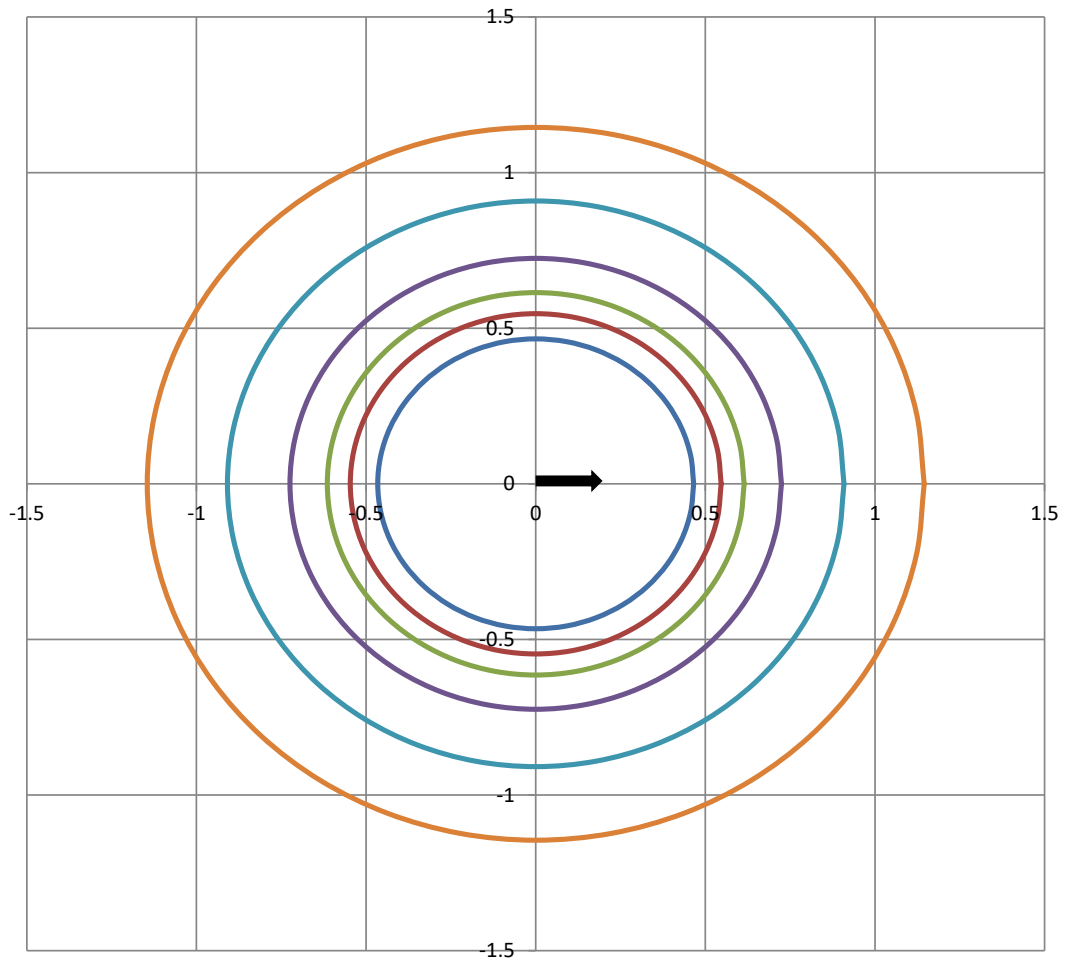
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	2728 Candela
Central Cone Intensity:	2685 Candela
Beam Flux:	533.8 Lumens
Beam Angle (0-180):	33.2 Degrees
Beam Angle (90-270):	33.2 Degrees
Field Angle (0-180):	53.9 Degrees
Field Angle (90-270):	53.9 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		170	2.22
6.00		75.8	3.33
8.00		42.6	4.44
10.0		27.3	5.54
12.0		18.9	6.65
14.0		13.9	7.76
16.0		10.7	8.87



## ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

