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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  
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Catalog Number  
**ALS65-10D**  
Order Number  
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Test Number  
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Test Date

2019-05-15 - 2019-05-17

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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## Table of Contents

<b>Summary of Results</b>	Page 3
<b>Integrating Sphere Results</b>	Page 4
<b>Distribution Results</b>	
Conditions / Summary of Results / Polar Plot / Zonal Lumens	Page 5
Candela Tabulation / Average Luminance	Page 6
Coefficients of Utilization / Cone of Light	Page 7
ISOFootcandle Plot	Page 8

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: 514.3 Lumens  
Efficacy: 49.24 lm/w  
CCT: 3027 K  
CRI (Ra): 92.8

#### Distribution

Total Luminaire Output: 507.9 Lumens  
Luminaire Efficacy: 48.5 lm/w  
Maximum Candela: 7176 Candela

#### Electrical Data at 120 VAC

Test Temperature: 25.1 °C  
Voltage: 120.1 VAC  
Current: 0.08763 A  
Power: 10.45 W  
Power Factor: 0.992  
Frequency: 60 Hz  
Current THD: 9.92 %



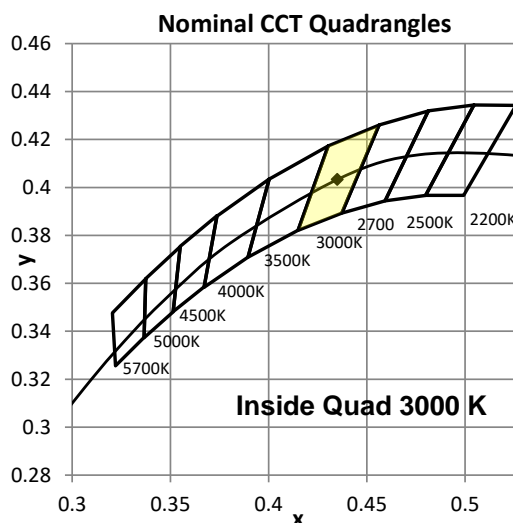
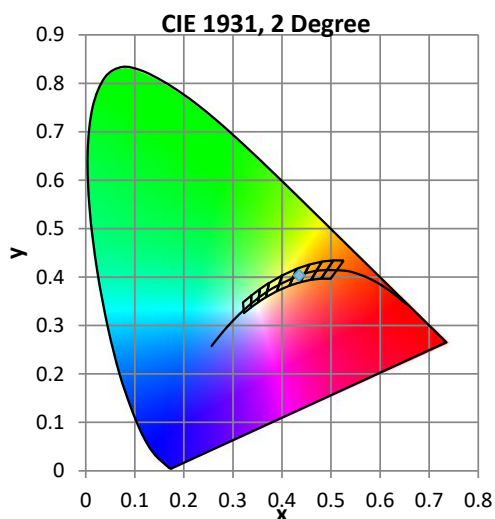
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.1 °C	120.1 VAC	0.08763 A	10.45 W	0.992	60 Hz	9.92 %

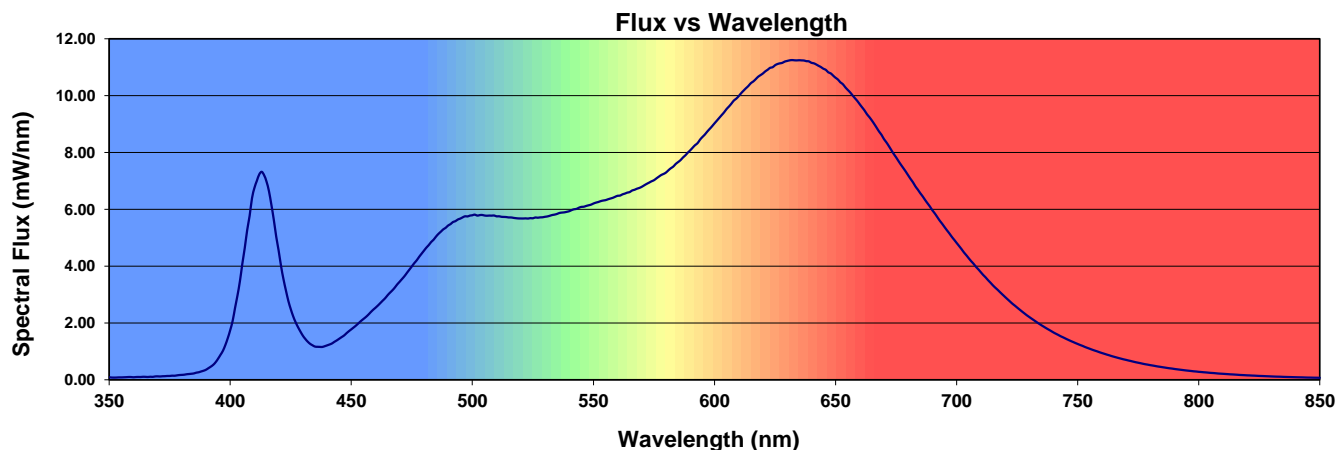
### Summary of Results

<b>Total Output:</b>	514 Lumens	<b>Chromaticity (x):</b>	0.4349
<b>Efficacy:</b>	49.2 lm/w	<b>Chromaticity (y):</b>	0.4034
<b>CCT:</b>	3027 K	<b>Chromaticity (u'):</b>	0.2496
<b>CRI (Ra):</b>	92.8	<b>Chromaticity (v'):</b>	0.5208
<b>CRI (R9):</b>	93.6	<b>TM-30 Rf:</b>	90.9
<b>Peak Wavelength:</b>	633 nm	<b>TM-30 Rg:</b>	98.6
<b>Dominant Wavelength:</b>	583 nm	<b>Duv:</b>	0.0001
<b>S/P Ratio:</b>	1.6		



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
92.8	92.4	93.5	94.5	91.3	90.4	87.1	96.5	97.0	93.6	84.4	86.4	72.6	92.0	97.4	95.3





## Distribution - Goniophotometer

### Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.8 °C	120.1 VAC	0.08780 A	10.46 W	0.992	60 Hz	9.94 %

### Summary of Results

#### Spacing Criteria

0-180: 0.21

90-270: 0.21

Total Lumen Output:

507.9 Lumens

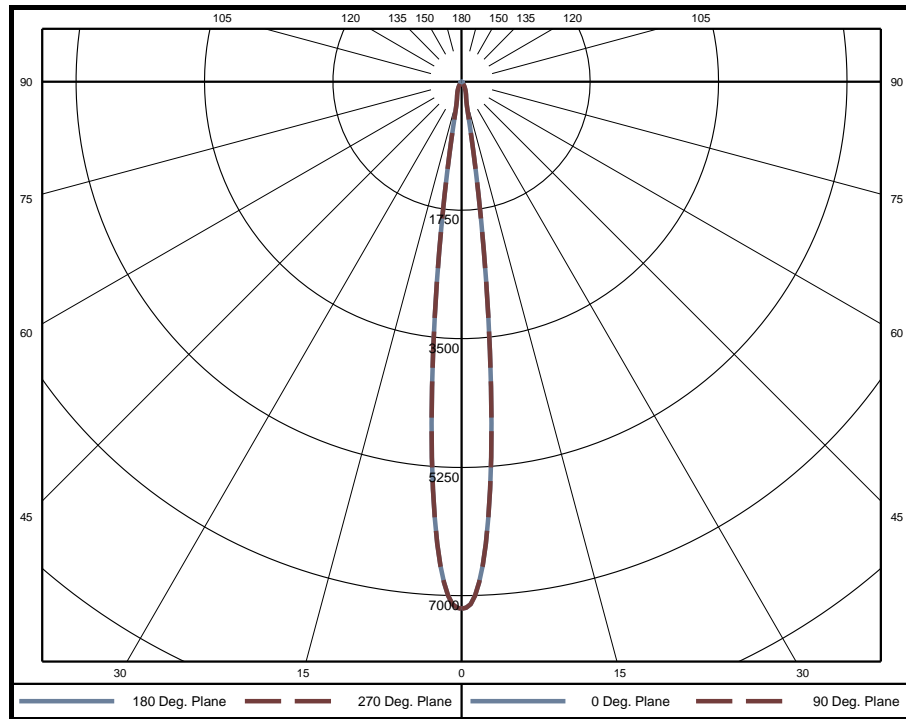
Luminaire Efficacy:

48.5 lm/w

Maximum Candela:

7176 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	142.5	28.1%	60-65	5.2	1.0%	120-125	0	0.0%
5-10	160.0	31.5%	65-70	4.3	0.8%	125-130	0	0.0%
10-15	44.0	8.7%	70-75	3.2	0.6%	130-135	0	0.0%
15-20	33.2	6.5%	75-80	1.9	0.4%	135-140	0	0.0%
20-25	30.0	5.9%	80-85	1.0	0.2%	140-145	0	0.0%
25-30	24.1	4.7%	85-90	0.3	0.1%	145-150	0	0.0%
30-35	16.5	3.2%	90-95	0	0.0%	150-155	0	0.0%
35-40	11.0	2.2%	95-100	0	0.0%	155-160	0	0.0%
40-45	9.0	1.8%	100-105	0	0.0%	160-165	0	0.0%
45-50	8.0	1.6%	105-110	0	0.0%	165-170	0	0.0%
50-55	7.3	1.4%	110-115	0	0.0%	170-175	0	0.0%
55-60	6.5	1.3%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	461	90.8%
0-60	492	96.9%
0-90	508	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	7176	7176	7176	7176	7176	7176	7176	7176	7176	7176	7176	7176	7176	7176	7176
	5	4667	4667	4667	4667	4667	4667	4667	4667	4667	4667	4667	4667	4667	4667	4667
	10	788	788	788	788	788	788	788	788	788	788	788	788	788	788	788
	15	243	243	243	243	243	243	243	243	243	243	243	243	243	243	243
	20	170	170	170	170	170	170	170	170	170	170	170	170	170	170	170
	25	118	118	118	118	118	118	118	118	118	118	118	118	118	118	118
	30	75	75	75	75	75	75	75	75	75	75	75	75	75	75	75
	35	41	41	41	41	41	41	41	41	41	41	41	41	41	41	41
	40	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
	45	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
	50	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
	55	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
	65	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
	70	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
	75	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
	80	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
	90	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
	100	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
	110	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
	120	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
	130	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
	140	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
	150	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
	160	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
	170	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
	180	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	2266000	2266000
	45	9654	9654
	55	8614	8614
	65	7179	7179
	75	5816	5816
	85	3871	3871



### 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	115	113	111	109	112	110	109	107	106	105	104	103	102	101	99	99	98	96
2	111	107	104	101	109	105	103	100	102	100	98	99	98	96	97	95	94	92
3	107	102	99	96	105	101	98	95	99	96	93	96	94	92	94	92	91	89
4	104	99	95	91	102	98	94	91	96	92	90	94	91	89	92	90	88	87
5	101	95	91	88	100	94	91	88	93	90	87	91	89	86	90	88	86	84
6	99	92	88	85	97	92	88	85	90	87	85	89	86	84	88	86	84	83
7	96	90	86	83	95	89	86	83	88	85	83	87	84	82	86	84	82	81
8	94	88	84	81	93	87	84	81	87	83	81	86	83	81	85	82	80	79
9	92	86	82	80	91	86	82	79	85	82	79	84	81	79	83	81	79	78
10	91	84	81	78	90	84	80	78	83	80	78	83	80	78	82	79	78	77

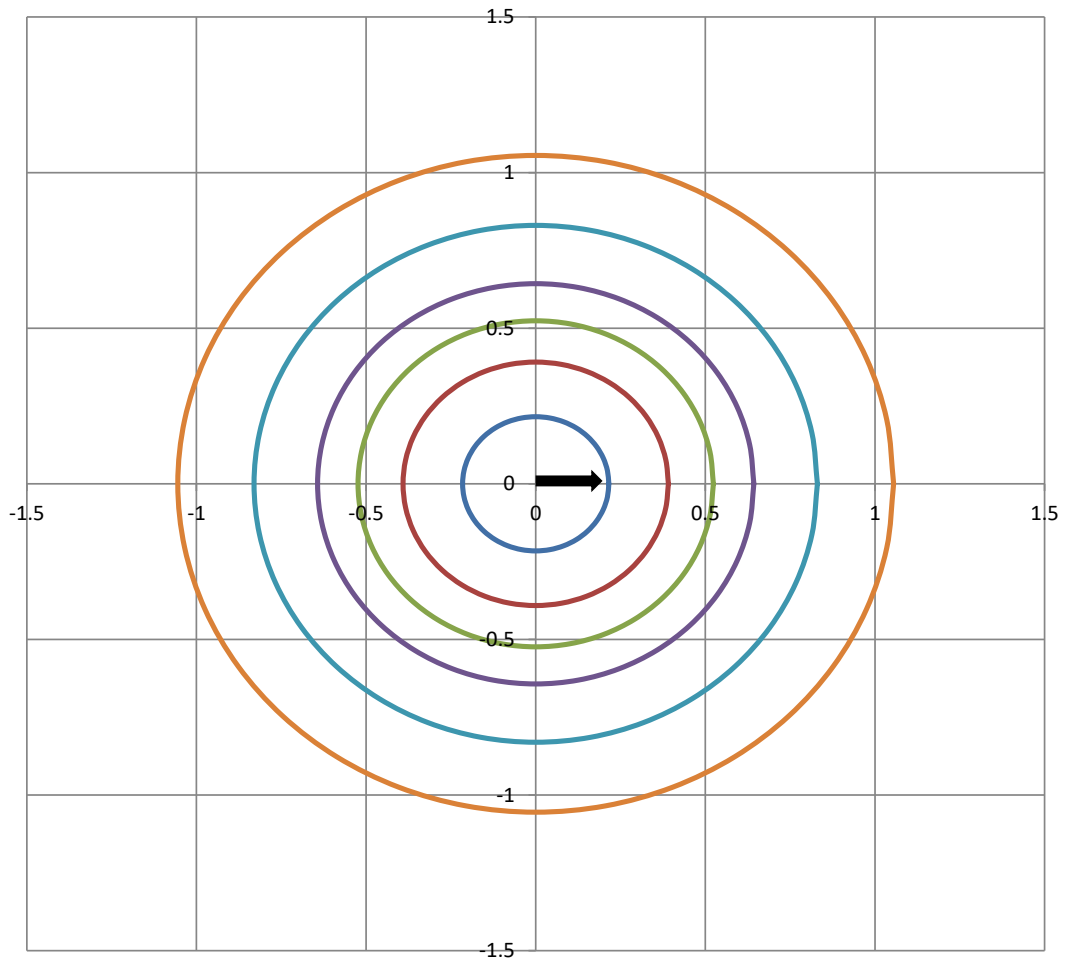
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	7176 Candela
Central Cone Intensity:	6317 Candela
Beam Flux:	191.9 Lumens
Beam Angle (0-180):	12.2 Degrees
Beam Angle (90-270):	12.2 Degrees
Field Angle (0-180):	20.4 Degrees
Field Angle (90-270):	20.4 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		448	0.846
6.00		199	1.27
8.00		112	1.69
10.0		71.8	2.12
12.0		49.8	2.54
14.0		36.6	2.96
16.0		28.0	3.39



## ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height

5 fc    2 fc    1 fc    0.5 fc    0.2 fc    0.1 fc