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## Photometric Test Report

Relevant Standards  
IES LM-79-2008, ANSI C82.77-2002, IES LM-35-2002 (Withdrawn)  
UL 1598-2008, CIE 13.3-1995, CIE 15-2004  
ANSI C78.377-2017, IES TM-30-2018

**Prepared For**  
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**Catalog Number**  
**ALS65-15D-9530-U-WW**

Order Number  
12750207  
Test Number  
12750207.02

**Test Date**

2019-03-01 - 2019-03-07

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:** Circular white metal housing  
**Lamp:** One (1) white LED with optic attached  
**Mounting:** Surface – Ceiling  
**Ballast/Driver:** Macron Associate Co. MDR-602-550-16-O8

**Luminaire**



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

### Summary of Results

#### Integrating Sphere

Luminous Flux: 838.6 Lumens  
Efficacy: 48.67 lm/w  
CCT: 3035 K  
CRI (Ra): 95.0

#### Distribution

Total Luminaire Output: 848.4 Lumens  
Luminaire Efficacy: 49.3 lm/w  
Maximum Candela: 6994 Candela

#### Electrical Data at 120 VAC

Test Temperature: 24.4 °C  
Voltage: 120.1 VAC  
Current: 0.1505 A  
Power: 17.23 W  
Power Factor: 0.953  
Frequency: 60 Hz  
Current THD: 16.2 %

#### In-Situ

LED Temperature: 68.1 °C  
Driver Temperature: 96.2 °C  
Measured LED Current: 0.5320 A

Temperature is offset to an ambient temperature of 25°C as described in UL1598-2008.



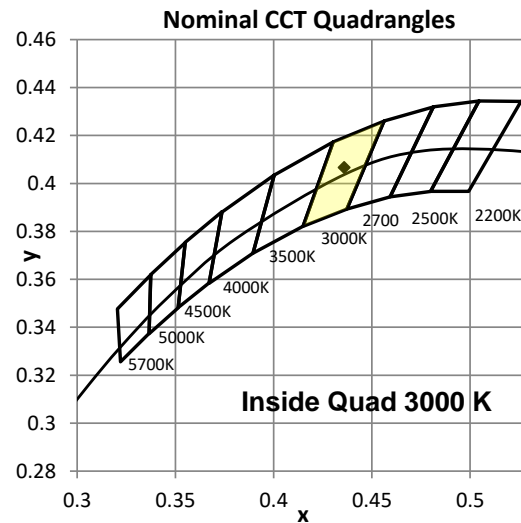
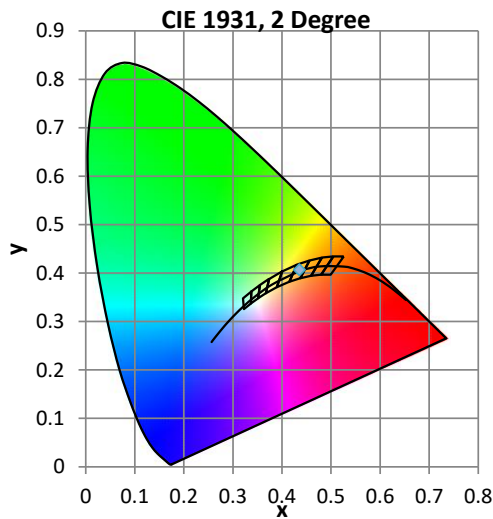
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.4 °C	120.1 VAC	0.1505 A	17.23 W	0.953	60 Hz	16.2 %

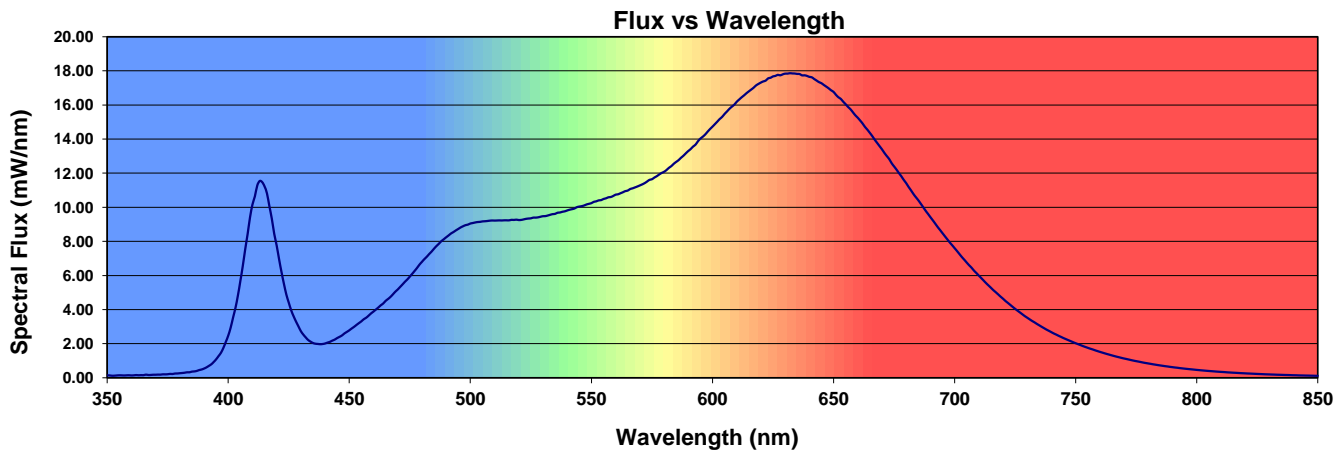
### Summary of Results

<b>Total Output:</b>	839 Lumens	<b>Chromaticity (x):</b>	0.4359
<b>Efficacy:</b>	48.7 lm/w	<b>Chromaticity (y):</b>	0.4066
<b>CCT:</b>	3035 K	<b>Chromaticity (u'):</b>	0.2488
<b>CRI (Ra):</b>	95.0	<b>Chromaticity (v'):</b>	0.5222
<b>CRI (R9):</b>	98.0	<b>TM-30 Rf:</b>	91.8
<b>Peak Wavelength:</b>	632 nm	<b>TM-30 Rg:</b>	98.5
<b>Dominant Wavelength:</b>	582 nm	<b>Duv:</b>	0.0011
<b>S/P Ratio:</b>	1.56		



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15
95.0	95.1	95.8	96.2	93.5	93.5	90.5	97.2	98.3	98.0	89.8	89.2	77.7	94.8	98.3	98.1





## Distribution - Goniophotometer

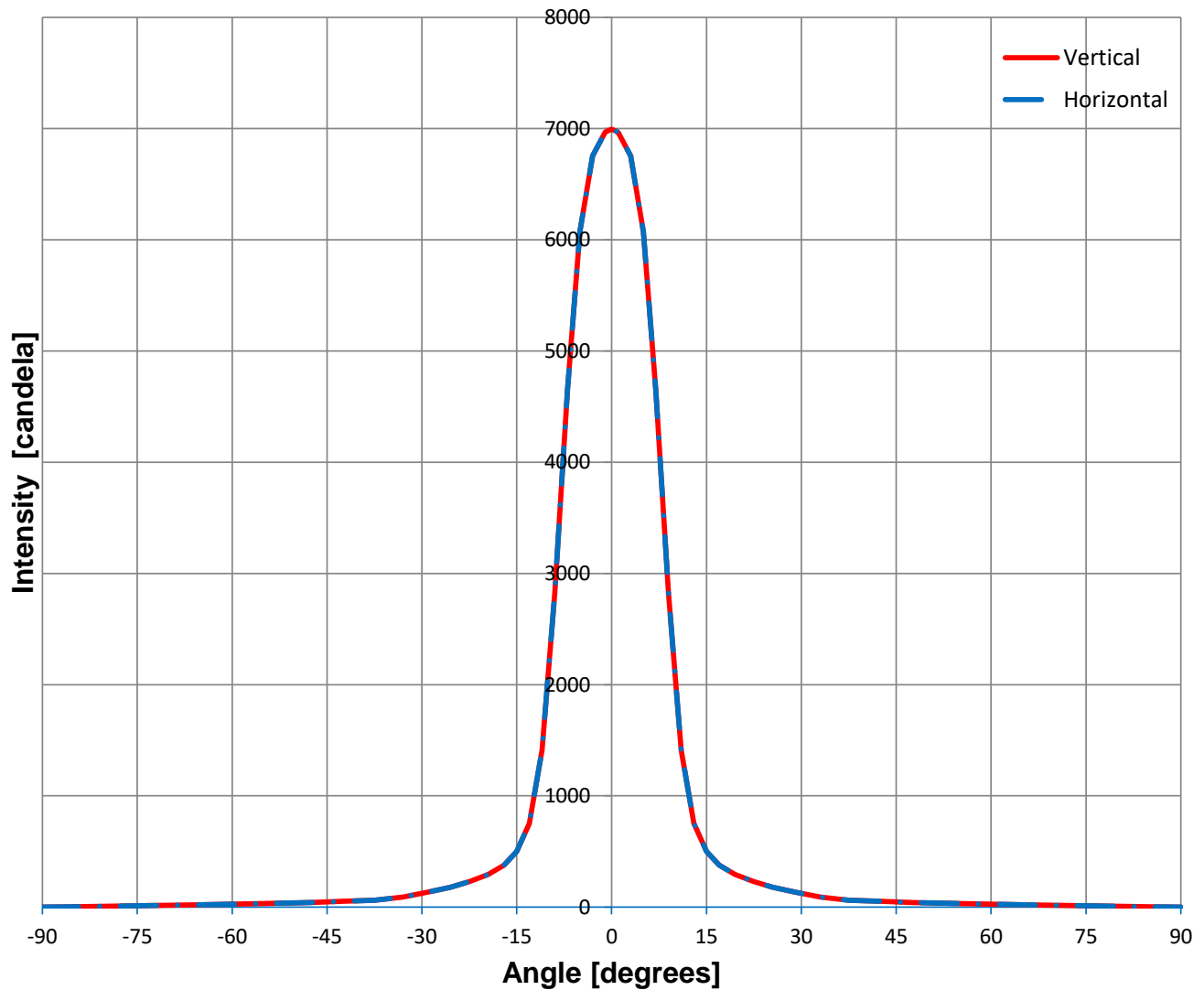
### Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
25.1 °C	120.1 VAC	0.1504 A	17.22 W	0.953	60 Hz	16.3 %

### Summary of Results

Total Lumen Output:	848.4 Lumens	Maximum Candela:	6994.4 Candela
Luminaire Efficacy:	49.3 Lumens/Watt	Maximum Angle:	0 H 0 V
Field Lumens:	531.9 Lumens	Field Angle :	26.8 H X 26.8 V
Beam Lumens:	349.8 Lumens	Beam Angle :	16.5 H X 16.5 V
Spill Light Lumens:	316.6 Lumens	IESNA Type:	2 H X 2 V

### Maximum Candlepower Plot





### Candela Tabulation

Lateral Angle (Degrees)

	0	1	3	5	7	9	11	13	15	17	19.5
85.0	2	2	2	2	2	2	2	2	2	2	2
75.0	11	11	11	11	11	11	11	10	10	10	10
65.0	21	21	21	21	21	21	21	21	20	20	20
55.0	32	32	32	32	32	32	32	31	31	31	30
47.5	42	42	41	41	40	40	39	38	37	37	36
42.5	52	52	52	52	51	51	50	50	49	48	46
37.5	62	62	62	61	60	59	58	57	56	55	53
33.0	90	90	89	87	84	81	77	72	68	65	61
29.0	135	135	134	131	127	121	114	106	97	88	78
25.5	177	177	174	170	165	157	150	141	132	120	105
22.5	229	229	225	219	210	199	186	172	159	147	130
19.5	295	294	289	279	266	250	233	214	194	175	153
17.0	377	376	368	350	328	303	278	253	228	204	175
15.0	500	498	479	443	402	360	322	288	257	228	194
13.0	753	747	702	615	527	445	379	329	288	253	214
11.0	1413	1395	1249	981	750	584	464	379	322	278	233
9.0	2824	2780	2439	1852	1254	826	584	445	360	303	250
7.0	4646	4582	4092	3196	2118	1254	750	527	402	328	266
5.0	6074	6013	5561	4586	3196	1852	981	615	443	350	279
3.0	6755	6712	6390	5561	4092	2439	1249	702	479	368	289
1.0	6970	6942	6712	6013	4582	2780	1395	747	498	376	294
0.0	6994	6970	6755	6074	4646	2824	1413	753	500	377	295
-1.0	6970	6942	6712	6013	4582	2780	1395	747	498	376	294
-3.0	6755	6712	6390	5561	4092	2439	1249	702	479	368	289
-5.0	6074	6013	5561	4586	3196	1852	981	615	443	350	279
-7.0	4646	4582	4092	3196	2118	1254	750	527	402	328	266
-9.0	2824	2780	2439	1852	1254	826	584	445	360	303	250
-11.0	1413	1395	1249	981	750	584	464	379	322	278	233
-13.0	753	747	702	615	527	445	379	329	288	253	214
-15.0	500	498	479	443	402	360	322	288	257	228	194
-17.0	377	376	368	350	328	303	278	253	228	204	175
-19.5	295	294	289	279	266	250	233	214	194	175	153
-22.5	229	229	225	219	210	199	186	172	159	147	130
-25.5	177	177	174	170	165	157	150	141	132	120	105
-29.0	135	135	134	131	127	121	114	106	97	88	78
-33.0	90	90	89	87	84	81	77	72	68	65	61
-37.5	62	62	62	61	60	59	58	57	56	55	53
-42.5	52	52	52	52	51	51	50	50	49	48	46
-47.5	42	42	41	41	40	40	39	38	37	37	36
-55.0	32	32	32	32	32	32	32	31	31	31	30
-65.0	21	21	21	21	21	21	21	21	20	20	20
-75.0	11	11	11	11	11	11	11	10	10	10	10
-85.0	2	2	2	2	2	2	2	2	2	2	2

Vertical Angle (Degrees)



### Candela Tabulation

Lateral Angle (Degrees)

	22.5	25.5	29	33	37.5	42.5	47.5	55	65	75	85
85.0	2	2	2	2	2	2	1	1	1	1	0
75.0	10	9	9	8	8	7	6	5	3	2	1
65.0	19	19	18	17	16	15	13	10	6	3	1
55.0	29	28	26	25	23	21	19	16	10	5	1
47.5	35	34	33	32	30	26	23	19	13	6	1
42.5	43	39	36	35	33	30	26	21	15	7	2
37.5	52	49	46	39	35	33	30	23	16	8	2
33.0	58	54	52	47	39	35	32	25	17	8	2
29.0	67	61	56	52	46	36	33	26	18	9	2
25.5	86	71	61	54	49	39	34	28	19	9	2
22.5	108	86	67	58	52	43	35	29	19	10	2
19.5	130	105	78	61	53	46	36	30	20	10	2
17.0	147	120	88	65	55	48	37	31	20	10	2
15.0	159	132	97	68	56	49	37	31	20	10	2
13.0	172	141	106	72	57	50	38	31	21	10	2
11.0	186	150	114	77	58	50	39	32	21	11	2
9.0	199	157	121	81	59	51	40	32	21	11	2
7.0	210	165	127	84	60	51	40	32	21	11	2
5.0	219	170	131	87	61	52	41	32	21	11	2
3.0	225	174	134	89	62	52	41	32	21	11	2
1.0	229	177	135	90	62	52	42	32	21	11	2
0.0	229	177	135	90	62	52	42	32	21	11	2
-1.0	229	177	135	90	62	52	42	32	21	11	2
-3.0	225	174	134	89	62	52	41	32	21	11	2
-5.0	219	170	131	87	61	52	41	32	21	11	2
-7.0	210	165	127	84	60	51	40	32	21	11	2
-9.0	199	157	121	81	59	51	40	32	21	11	2
-11.0	186	150	114	77	58	50	39	32	21	11	2
-13.0	172	141	106	72	57	50	38	31	21	10	2
-15.0	159	132	97	68	56	49	37	31	20	10	2
-17.0	147	120	88	65	55	48	37	31	20	10	2
-19.5	130	105	78	61	53	46	36	30	20	10	2
-22.5	108	86	67	58	52	43	35	29	19	10	2
-25.5	86	71	61	54	49	39	34	28	19	9	2
-29.0	67	61	56	52	46	36	33	26	18	9	2
-33.0	58	54	52	47	39	35	32	25	17	8	2
-37.5	52	49	46	39	35	33	30	23	16	8	2
-42.5	43	39	36	35	33	30	26	21	15	7	2
-47.5	35	34	33	32	30	26	23	19	13	6	1
-55.0	29	28	26	25	23	21	19	16	10	5	1
-65.0	19	19	18	17	16	15	13	10	6	3	1
-75.0	10	9	9	8	8	7	6	5	3	2	1
-85.0	2	2	2	2	2	2	1	1	1	1	0

Vertical Angle (Degrees)



### Isocandela Diagram (Percent of Maximum Intensity)

