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## Photometric Test Report

Relevant Standards  
IES LM-79-2008, ANSI C82.77-2002, UL 1598-2008 CIE  
13.3-1995, CIE 15-2004, ANSI C78.377-2015 IES  
TM-30-2015

Prepared For  
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Catalog Number  
**LT224SS1B30AC000,RT224SS1B30AC000**  
Order Number  
11748594  
Test Number  
11748594.21

Test Date

2017-05-06 - 2017-05-10

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 steel housing, prismatic lens enclosure. Tested in an A.L.P EL 2x2 housing.  
**Lamp:** 112 white LEDs  
**Mounting:** Recessed  
**Ballast/Driver:** Everline D700CC30UNVTZ-C

### Luminaire



### Luminaire Characteristics

Luminous Length: 21.00 in.  
Luminous Width: 21.00 in.

### Summary of Results

#### Integrating Sphere

Luminous Flux: 2538 Lumens  
Efficacy: 110.1 lm/w  
CCT: 3082 K  
CRI (Ra): 82.8

#### Distribution

Total Luminaire Output: 2452 Lumens  
Luminaire Efficacy: 106.4 lm/w  
Maximum Candela: 1083 Candela

#### Electrical Data at 277 VAC

Test Temperature: 26.0 °C  
Voltage: 277.0 VAC  
Current: 0.08899 A  
Power: 23.76 W  
Power Factor: 0.964  
Frequency: 60 Hz  
Current THD: 11.1 %

#### In-Situ

LED Temperature: 36.6 °C  
Driver Temperature: 39.9 °C  
Measured LED Current: 0.06050 A

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



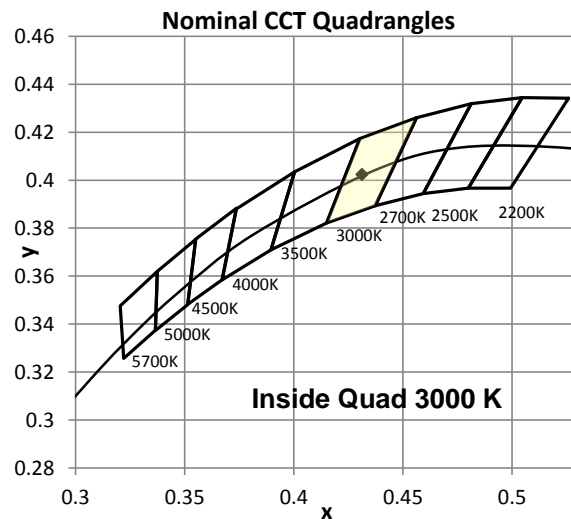
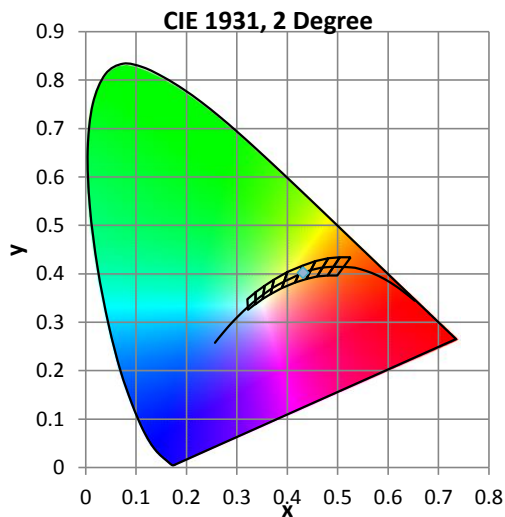
## Color Quality - Integrating Sphere

### Integrating Sphere Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
26.0 °C	120.0 VAC	0.1931 A	23.06 W	0.995	60 Hz	8.97 %

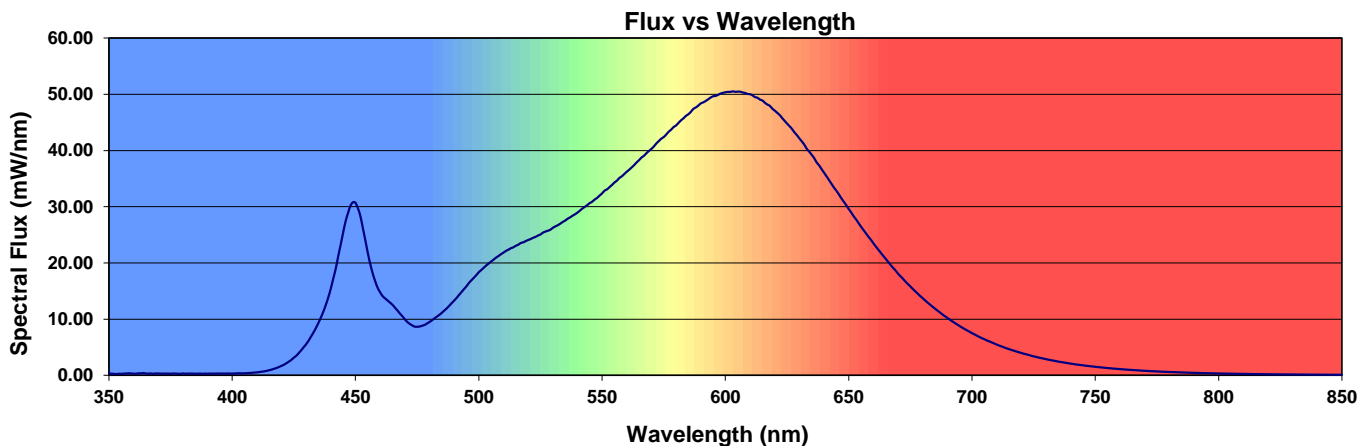
### Summary of Results

<b>Total Output:</b>	2538 Lumens	<b>Chromaticity (x):</b>	0.4312
<b>Efficacy:</b>	110.1 lm/w	<b>Chromaticity (y):</b>	0.4024
<b>CCT:</b>	3082 K	<b>Chromaticity (u'):</b>	0.2476
<b>CRI (Ra):</b>	82.8	<b>Chromaticity (v'):</b>	0.5199
<b>CRI (R9):</b>	8.1	<b>TM-30 Rf:</b>	83.2
<b>Peak Wavelength:</b>	603.6 nm	<b>TM-30 Rg:</b>	97
<b>Dominant Wavelength:</b>	582.4 nm	<b>Duv:</b>	0.0004
<b>S/P Ratio:</b>	1.37		



### Color Rendering Index Detail

Ra (CRI)	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14
82.8	80.9	90.2	96.8	81.3	81.2	88.0	83.6	60.2	8.1	78.0	80.7	72.2	82.9	98.6





## Distribution - Goniophotometer

### Distribution Test Conditions

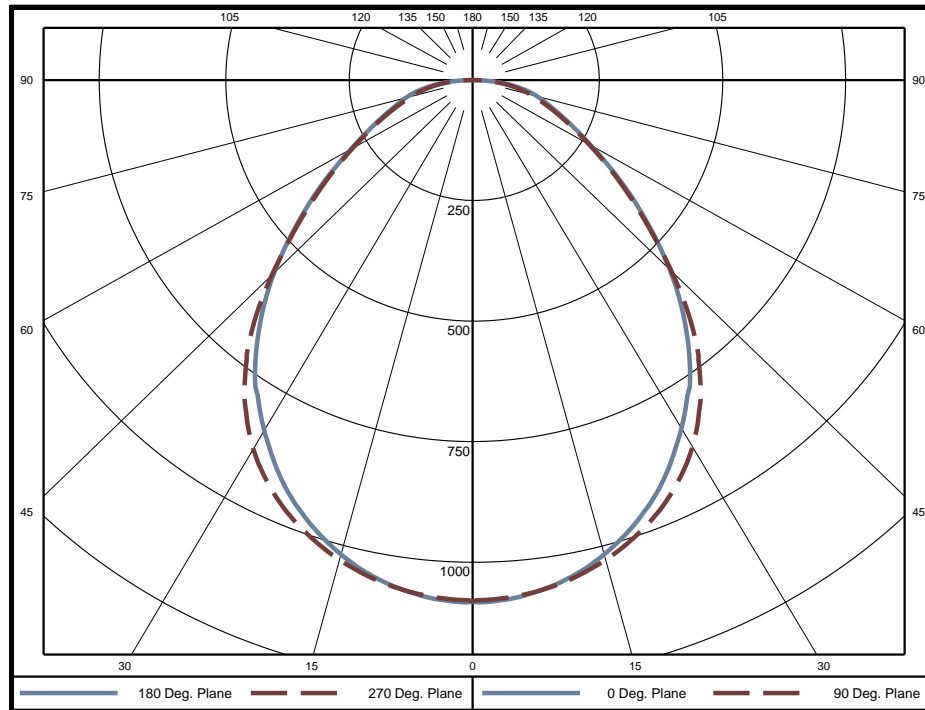
Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.0 VAC	0.1932 A	23.05 W	0.995	60 Hz	8.93 %

### Summary of Results

**Spacing Criteria**  
 0-180: 1.16  
 90-270: 1.16

**Total Lumen Output:** 2452 Lumens  
**Luminaire Efficacy:** 106.4 lm/w  
**Maximum Candela:** 1083 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	25.8	1.1%	60-65	116.0	4.7%	120-125	0	0.0%
5-10	76.2	3.1%	65-70	92.8	3.8%	125-130	0	0.0%
10-15	123.5	5.0%	70-75	74.5	3.0%	130-135	0	0.0%
15-20	165.3	6.7%	75-80	57.7	2.4%	135-140	0	0.0%
20-25	200.2	8.2%	80-85	38.0	1.5%	140-145	0	0.0%
25-30	225.7	9.2%	85-90	14.4	0.6%	145-150	0	0.0%
30-35	240.3	9.8%	90-95	0	0.0%	150-155	0	0.0%
35-40	242.6	9.9%	95-100	0	0.0%	155-160	0	0.0%
40-45	230.7	9.4%	100-105	0	0.0%	160-165	0	0.0%
45-50	206.8	8.4%	105-110	0	0.0%	165-170	0	0.0%
50-55	176.5	7.2%	110-115	0	0.0%	170-175	0	0.0%
55-60	144.7	5.9%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1300	53.0%
0-60	2058	83.9%
0-90	2452	100.0%
90-180	0	0.0%



**Candela Tabulation**  
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	Horizontal 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	1081	1081	1081	1081	1081	1081	1081	1081	1081	1081	1081	1081	1081	1081	1081	1081
5	1076	1075	1076	1074	1073	1074	1076	1075	1076	1075	1076	1074	1073	1074	1076	1075
10	1054	1054	1057	1057	1058	1057	1057	1054	1054	1054	1057	1057	1058	1057	1057	1054
15	1019	1020	1026	1029	1030	1029	1026	1020	1019	1020	1026	1029	1030	1029	1026	1020
20	972	973	981	990	993	990	981	973	972	973	981	990	993	990	981	973
25	912	914	925	939	945	939	925	914	912	914	925	939	945	939	925	914
30	838	841	854	871	881	871	854	841	838	841	854	871	881	871	854	841
35	763	761	771	789	798	789	771	761	763	761	771	789	798	789	771	761
40	666	667	677	689	694	689	677	667	666	667	677	689	694	689	677	667
45	564	565	573	570	568	570	573	565	564	565	573	570	568	570	573	565
50	457	462	463	452	450	452	463	462	457	462	463	452	450	452	463	462
55	362	364	357	351	354	351	357	364	362	364	357	351	354	351	357	364
60	278	279	269	268	274	268	269	279	278	279	269	268	274	268	269	279
65	218	215	201	203	211	203	201	215	218	215	201	203	211	203	201	215
70	171	168	155	156	163	156	155	168	171	168	155	156	163	156	155	168
75	138	131	118	120	124	120	118	131	138	131	118	120	124	120	118	131
80	99	96	87	84	88	84	87	96	99	96	87	84	88	84	87	96
85	53	51	47	45	46	45	47	51	53	51	47	45	46	45	47	51
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)

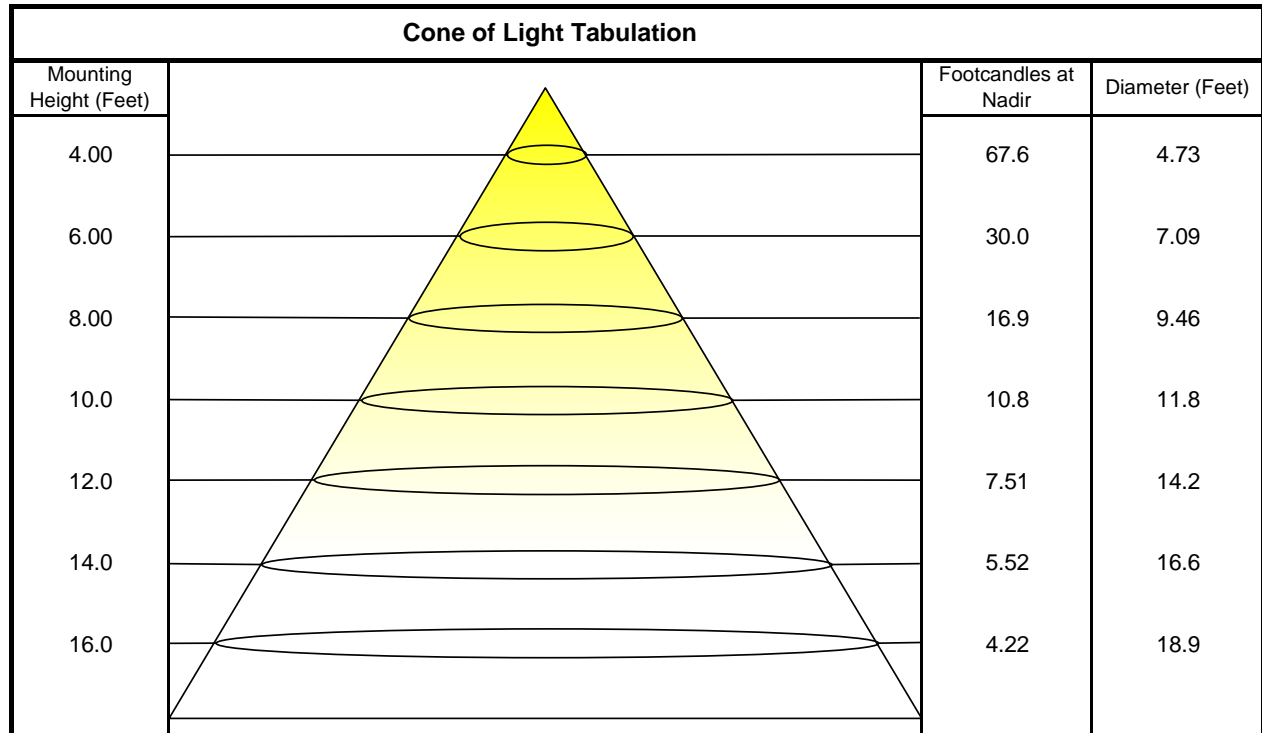
Vertical Angle (Degrees)	Horizontal Angle (Degrees)		
	0	45	90
0	3800	3800	3800
45	2803	2847	2825
55	2217	2187	2168
65	1810	1669	1758
75	1868	1595	1680
85	2122	1902	1871



### Utilization of Lumens - 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 Lumens delivered to the task surface **																	
0	2919	2919	2919	2919	2851	2851	2851	2851	2724	2724	2724	2608	2608	2608	2502	2502	2502	2452
1	2684	2574	2476	2387	2618	2519	2429	2348	2415	2342	2274	2320	2260	2205	2232	2184	2140	2089
2	2462	2273	2117	1986	2399	2228	2084	1963	2142	2021	1917	2063	1962	1874	1989	1906	1833	1782
3	2262	2020	1834	1685	2203	1982	1809	1670	1911	1762	1640	1844	1718	1612	1783	1676	1585	1534
4	2085	1809	1607	1452	2031	1777	1588	1442	1717	1553	1423	1661	1519	1404	1609	1487	1386	1335
5	1928	1631	1423	1269	1878	1604	1409	1263	1553	1381	1249	1506	1355	1236	1462	1329	1223	1174
6	1789	1479	1271	1122	1744	1456	1260	1117	1413	1238	1108	1373	1217	1098	1335	1197	1089	1041
7	1665	1350	1145	1002	1624	1330	1136	998	1293	1118	991	1259	1101	984	1226	1085	977	931
8	1555	1238	1038	902	1518	1221	1031	899	1189	1017	894	1160	1003	888	1132	990	883	838
9	1456	1141	948	817	1423	1127	942	815	1099	930	811	1073	918	807	1049	907	803	760
10	1368	1057	870	746	1338	1044	865	744	1020	855	741	998	846	738	977	836	735	694

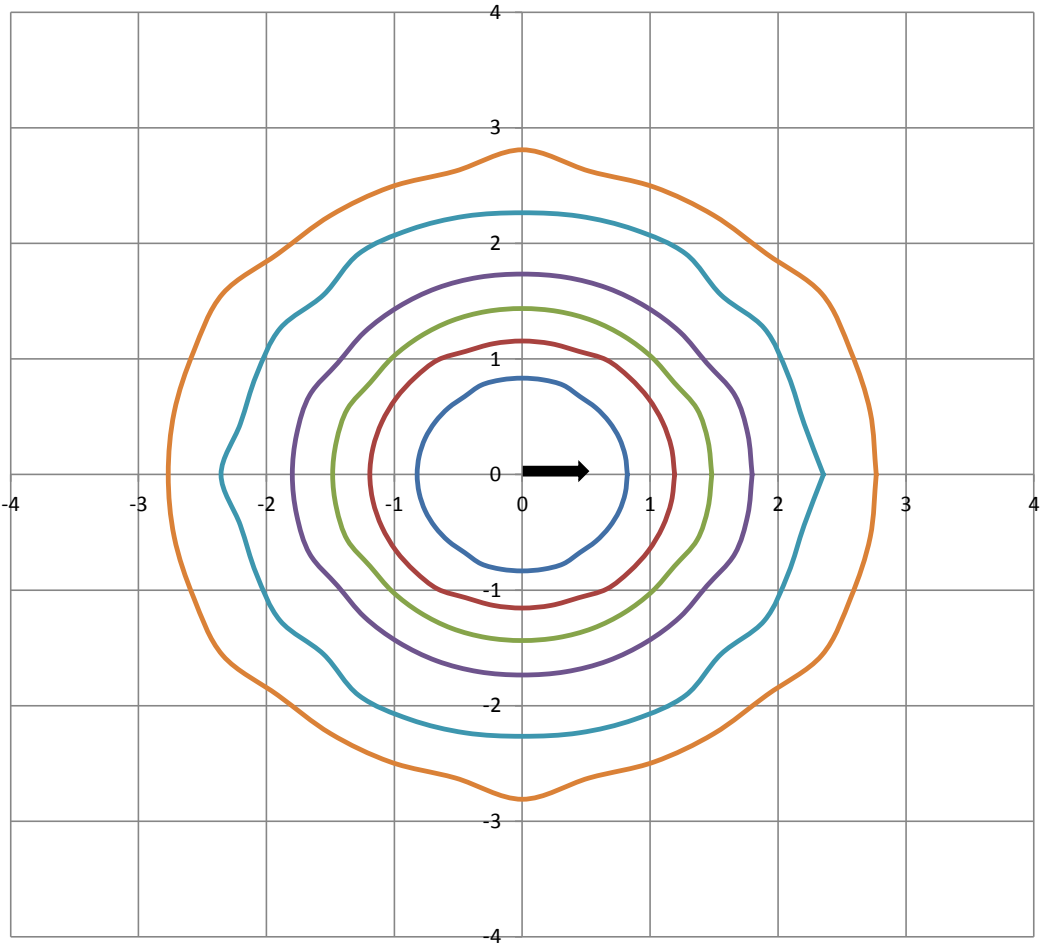
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	1081 Candela
Central Cone Intensity:	1079 Candela
Beam Flux:	1583.4 Lumens
Beam Angle (0-180):	92.2 Degrees
Beam Angle (90-270):	92.2 Degrees
Field Angle (0-180):	157.9 Degrees
Field Angle (90-270):	154.5 Degrees





### ISOFootcandle Plot

Mounting Height - 8 Feet



Grid Lines in Units of Mounting Height







## In-Situ Test

### In-Situ Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.2 °C	120.0 VAC	N/A	N/A	N/A	60 Hz	N/A

### Summary of Results

LED Temperature: 36.6 °C  
Driver Temperature: 39.9 °C  
Measured LED Current: 0.06050 A

Temperatures are offset to an ambient temperature of 25°C as described in UL1598-2008

### LED Temperature Location



### Driver Temperature Location

