



UL LLC  
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## Indoor Distribution Test Report

Relevant Standards  
IES LM-79-2008, ANSI C82.77-2002

**Prepared For**  
**B-K LIGHTING INC**

Chris McCarthy  
40429 Brickyard Dr  
Madera, CA 93636-9515  
United States

**Catalog Number**  
**SM-APII-LED-x45-BW-12-C**

Order Number  
12092711  
Test Number  
12092711.01

Test Date

2017-12-19

Prepared By

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Approved By

Eric Gaudreau, Senior Engineering Associate

The results contained in this report pertain only to the tested sample.  
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**Luminaire Description:** Circular white metal housing and outer patterned glass lens  
**Lamp:** One (1) White LED with optic attached  
**Mounting:** VBU  
**Ballast/Driver:** One (1) ECOdrive 561/S

**Luminaire**



**Luminaire Characteristics**

Luminous Diameter: 4.50 in.

**Summary of Results**

Total Luminaire Output:	2937 Lumens
Luminaire Efficacy:	87.6 lm/w
Maximum Candela:	1515 Candela

**Test Conditions**

Test Temperature:	24.9 °C
Voltage:	120.1 VAC
Current:	0.2816 A
Power:	33.54 W
Power Factor:	0.992
Frequency:	60 Hz
Current THD:	6.86 %

Laboratory results may not be representative of field performance  
Ballast factors have not been applied



## Distribution - Goniophotometer

### Distribution Test Conditions

Temperature	Voltage	Current	Power	Power Factor	Frequency	Current THD
24.9 °C	120.1 VAC	0.2816 A	33.54 W	0.992	60 Hz	6.86 %

### Summary of Results

#### Spacing Criteria

0-180: 2.48

90-270: 2.48

Total Lumen Output:

2937 Lumens

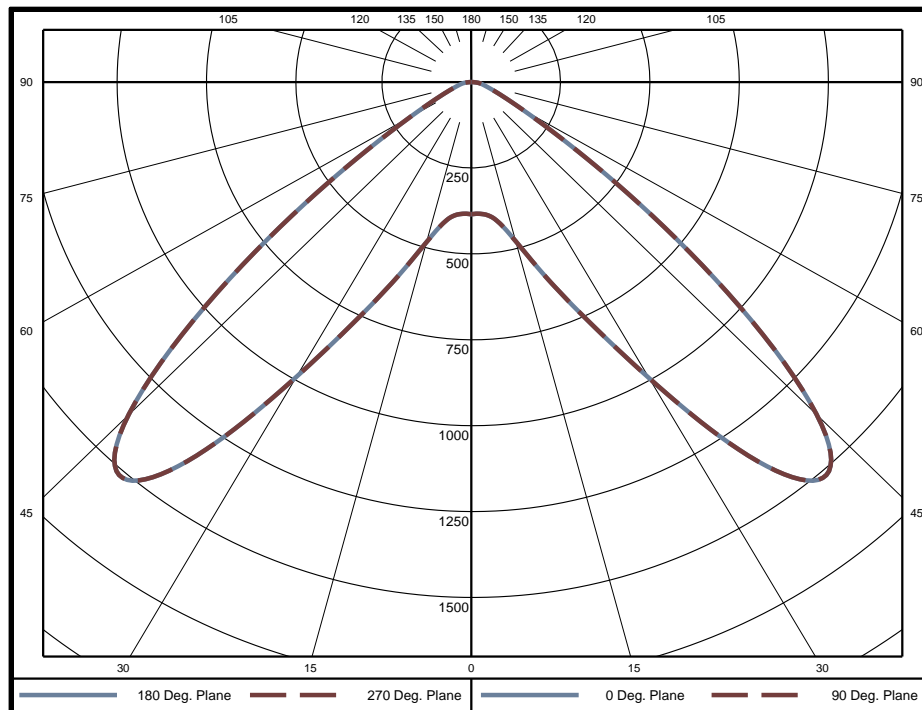
Luminaire Efficacy:

87.6 lm/w

Maximum Candela:

1515 Candela

### Polar Plot



### Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	9.2	0.3%	60-65	65.1	2.2%	120-125	0	0.0%
5-10	28.3	1.0%	65-70	38.0	1.3%	125-130	0	0.0%
10-15	52.5	1.8%	70-75	24.9	0.8%	130-135	0	0.0%
15-20	88.6	3.0%	75-80	17.6	0.6%	135-140	0	0.0%
20-25	142.2	4.8%	80-85	11.9	0.4%	140-145	0	0.0%
25-30	220.8	7.5%	85-90	4.4	0.1%	145-150	0	0.0%
30-35	339.0	11.5%	90-95	0	0.0%	150-155	0	0.0%
35-40	477.5	16.3%	95-100	0	0.0%	155-160	0	0.0%
40-45	545.6	18.6%	100-105	0	0.0%	160-165	0	0.0%
45-50	460.6	15.7%	105-110	0	0.0%	165-170	0	0.0%
50-55	279.1	9.5%	110-115	0	0.0%	170-175	0	0.0%
55-60	131.9	4.5%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1358	46.2%
0-60	2775	94.5%
0-90	2937	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	384	384	384	384	384	384	384	384	384	384	384	384	384	384	384
	5	386	386	386	386	386	386	386	386	386	386	386	386	386	386	386
	10	409	409	409	409	409	409	409	409	409	409	409	409	409	409	409
	15	479	479	479	479	479	479	479	479	479	479	479	479	479	479	479
	20	599	599	599	599	599	599	599	599	599	599	599	599	599	599	599
	25	760	760	760	760	760	760	760	760	760	760	760	760	760	760	760
	30	994	994	994	994	994	994	994	994	994	994	994	994	994	994	994
	35	1305	1305	1305	1305	1305	1305	1305	1305	1305	1305	1305	1305	1305	1305	1305
	40	1511	1511	1511	1511	1511	1511	1511	1511	1511	1511	1511	1511	1511	1511	1511
	45	1366	1366	1366	1366	1366	1366	1366	1366	1366	1366	1366	1366	1366	1366	1366
	50	890	890	890	890	890	890	890	890	890	890	890	890	890	890	890
	55	426	426	426	426	426	426	426	426	426	426	426	426	426	426	426
	60	186	186	186	186	186	186	186	186	186	186	186	186	186	186	186
	65	97	97	97	97	97	97	97	97	97	97	97	97	97	97	97
	70	58	58	58	58	58	58	58	58	58	58	58	58	58	58	58
	75	39	39	39	39	39	39	39	39	39	39	39	39	39	39	39
	80	28	28	28	28	28	28	28	28	28	28	28	28	28	28	28
	85	15	15	15	15	15	15	15	15	15	15	15	15	15	15	15
	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	37430	37430
	45	188300	188300
	55	72430	72430
	65	22290	22290
	75	14690	14690
	85	17290	17290



### 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	3497	3497	3497	3497	3415	3415	3415	3415	3263	3263	3263	3125	3125	3125	2997	2997	2997	2937
1	3247	3129	3023	2928	3170	3063	2967	2880	2941	2862	2790	2828	2764	2706	2724	2673	2626	2568
2	2984	2772	2596	2448	2911	2718	2556	2419	2616	2480	2364	2522	2410	2311	2436	2343	2260	2201
3	2733	2452	2234	2060	2663	2406	2204	2042	2321	2148	2006	2242	2095	1972	2169	2045	1939	1879
4	2501	2171	1930	1745	2436	2133	1908	1733	2061	1865	1710	1994	1825	1687	1932	1786	1665	1605
5	2290	1928	1675	1489	2230	1896	1658	1481	1835	1625	1465	1777	1594	1449	1724	1563	1434	1374
6	2100	1718	1462	1278	2045	1691	1448	1272	1638	1422	1261	1589	1397	1250	1543	1373	1239	1180
7	1930	1537	1282	1104	1880	1513	1271	1100	1468	1250	1092	1426	1230	1084	1386	1210	1076	1018
8	1779	1381	1131	959	1733	1361	1122	956	1322	1105	950	1285	1088	944	1250	1072	938	882
9	1645	1247	1003	838	1602	1229	996	836	1195	981	831	1163	967	827	1133	954	822	768
10	1525	1130	894	737	1487	1115	888	735	1085	876	732	1057	864	728	1031	853	724	672

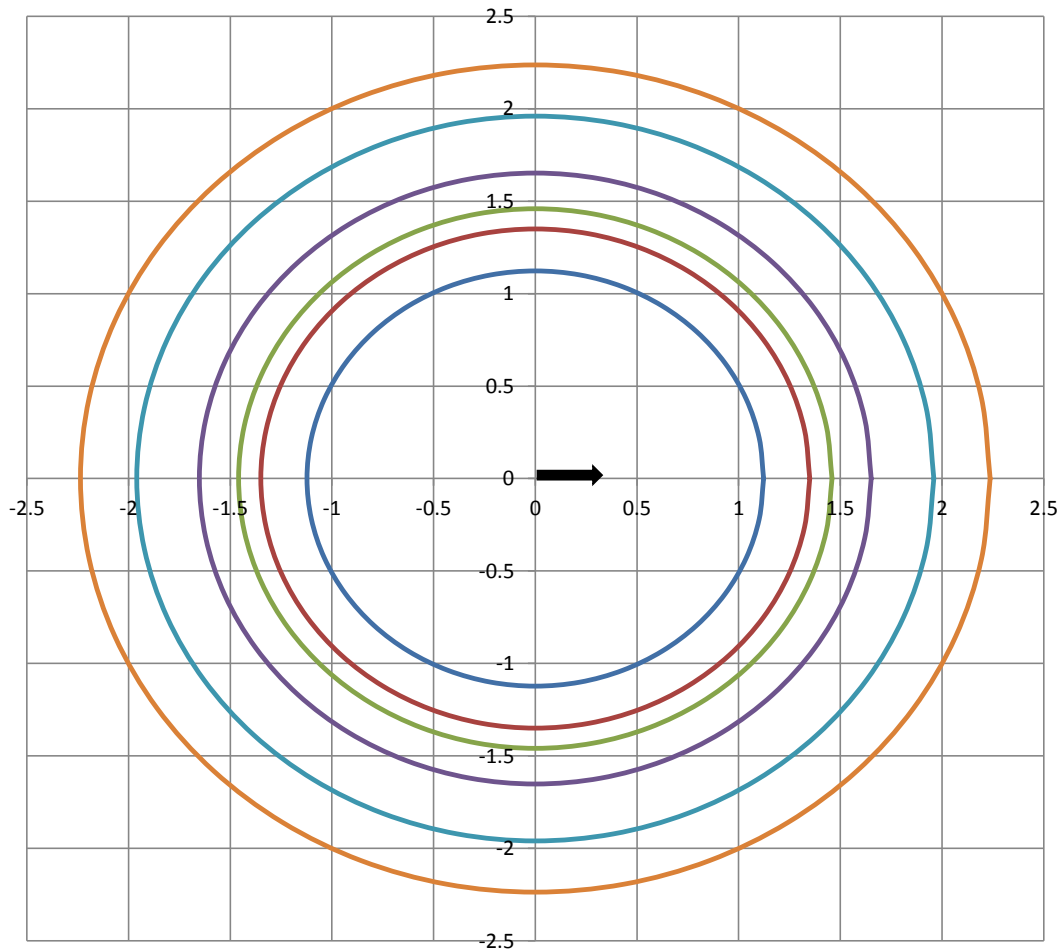
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	384 Candela
Central Cone Intensity:	384 Candela
Beam Flux:	2770.6 Lumens
Beam Angle (0-180):	119.6 Degrees
Beam Angle (90-270):	119.6 Degrees
Field Angle (0-180):	150.4 Degrees
Field Angle (90-270):	150.4 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		24.0	9.92
6.00		10.7	14.9
8.00		6.00	19.8
10.0		3.84	24.8
12.0		2.67	29.7
14.0		1.96	34.7
16.0		1.50	39.7



## 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