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Indoor Distribution Test Report

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

Prepared For
B-K LIGHTING INC

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United States

Catalog Number
SM-APII-LED-x51-BW-12-C

Order Number
12092711
Test Number
12092711.02

Test Date

2017-12-19

Prepared By

William Escobar, Technician

Approved By

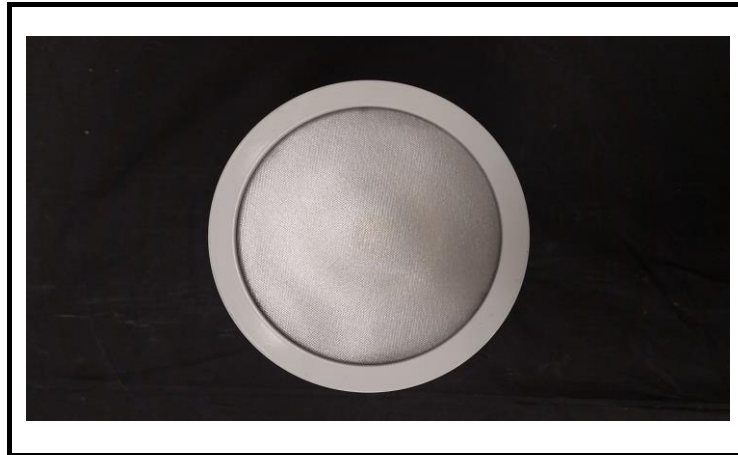
Eric Gaudreau, Senior Engineering Associate

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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) Thomas Research PLED75W-054-C1400-D

Luminaire



Luminaire Characteristics

Luminous Diameter: 4.50 in.

Summary of Results

Total Luminaire Output:	3742 Lumens
Luminaire Efficacy:	66.5 lm/w
Maximum Candela:	1181 Candela

Test Conditions

Test Temperature:	25.1 °C
Voltage:	120.0 VAC
Current:	0.4714 A
Power:	56.24 W
Power Factor:	0.994
Frequency:	60 Hz
Current THD:	6.50 %

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
25.1 °C	120.0 VAC	0.4714 A	56.24 W	0.994	60 Hz	6.50 %

Summary of Results

Spacing Criteria

0-180: 1.43

90-270: 1.43

Total Lumen Output:

3742 Lumens

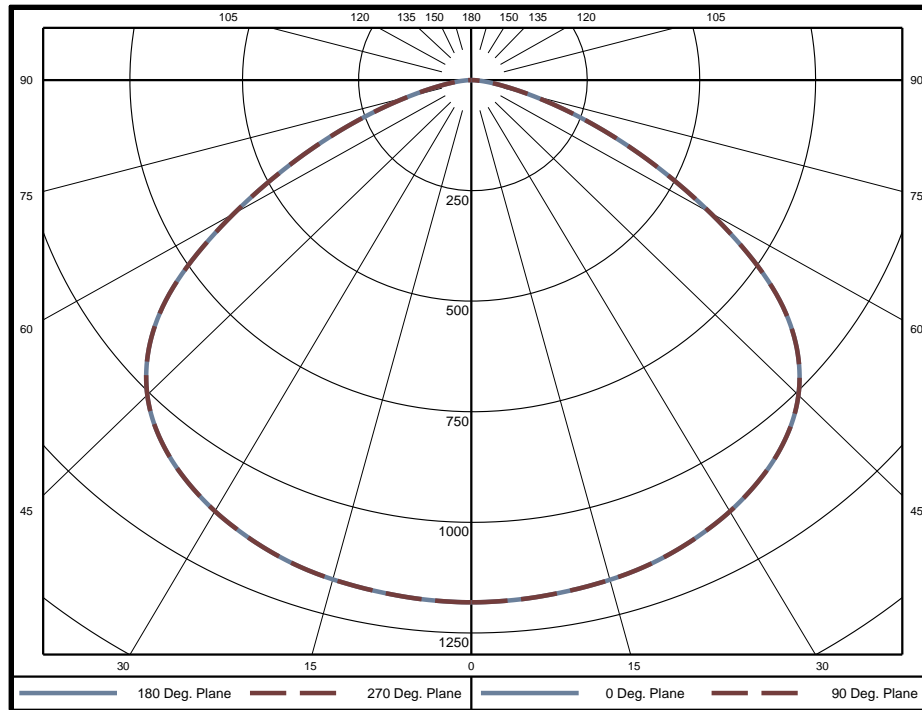
Luminaire Efficacy:

66.5 lm/w

Maximum Candela:

1181 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	28.2	0.8%	60-65	248.5	6.6%	120-125	0	0.0%
5-10	84.2	2.3%	65-70	172.7	4.6%	125-130	0	0.0%
10-15	139.0	3.7%	70-75	104.3	2.8%	130-135	0	0.0%
15-20	192.1	5.1%	75-80	52.8	1.4%	135-140	0	0.0%
20-25	242.0	6.5%	80-85	22.3	0.6%	140-145	0	0.0%
25-30	287.7	7.7%	85-90	5.5	0.1%	145-150	0	0.0%
30-35	328.0	8.8%	90-95	0	0.0%	150-155	0	0.0%
35-40	361.3	9.7%	95-100	0	0.0%	155-160	0	0.0%
40-45	384.4	10.3%	100-105	0	0.0%	160-165	0	0.0%
45-50	391.7	10.5%	105-110	0	0.0%	165-170	0	0.0%
50-55	374.7	10.0%	110-115	0	0.0%	170-175	0	0.0%
55-60	323.0	8.6%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1663	44.4%
0-60	3136	83.8%
0-90	3742	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	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180	1180
	5	1179	1179	1179	1179	1179	1179	1179	1179	1179	1179	1179	1179	1179	1179	1179
	10	1174	1174	1174	1174	1174	1174	1174	1174	1174	1174	1174	1174	1174	1174	1174
	15	1169	1169	1169	1169	1169	1169	1169	1169	1169	1169	1169	1169	1169	1169	1169
	20	1161	1161	1161	1161	1161	1161	1161	1161	1161	1161	1161	1161	1161	1161	1161
	25	1146	1146	1146	1146	1146	1146	1146	1146	1146	1146	1146	1146	1146	1146	1146
	30	1127	1127	1127	1127	1127	1127	1127	1127	1127	1127	1127	1127	1127	1127	1127
	35	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
	40	1064	1064	1064	1064	1064	1064	1064	1064	1064	1064	1064	1064	1064	1064	1064
	45	1009	1009	1009	1009	1009	1009	1009	1009	1009	1009	1009	1009	1009	1009	1009
	50	924	924	924	924	924	924	924	924	924	924	924	924	924	924	924
	55	790	790	790	790	790	790	790	790	790	790	790	790	790	790	790
	60	605	605	605	605	605	605	605	605	605	605	605	605	605	605	605
	65	423	423	423	423	423	423	423	423	423	423	423	423	423	423	423
	70	265	265	265	265	265	265	265	265	265	265	265	265	265	265	265
	75	142	142	142	142	142	142	142	142	142	142	142	142	142	142	142
	80	64	64	64	64	64	64	64	64	64	64	64	64	64	64	64
	85	22	22	22	22	22	22	22	22	22	22	22	22	22	22	22
	90	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	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/m²)
Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	115000	115000
	45	139100	139100
	55	134300	134300
	65	97470	97470
	75	53310	53310
	85	24680	24680



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	4455	4455	4455	4455	4352	4352	4352	4352	4158	4158	4158	3981	3981	3981	3819	3819	3819	3742
1	4100	3934	3785	3651	4000	3850	3714	3591	3692	3580	3478	3546	3456	3372	3413	3340	3272	3196
2	3738	3443	3199	2993	3641	3373	3148	2957	3241	3052	2889	3119	2962	2823	3007	2877	2761	2682
3	3408	3024	2727	2490	3316	2965	2690	2468	2854	2618	2424	2752	2551	2382	2657	2487	2341	2261
4	3116	2674	2350	2103	3030	2624	2322	2088	2531	2268	2060	2444	2216	2031	2363	2167	2004	1924
5	2859	2381	2048	1801	2780	2340	2026	1791	2260	1984	1772	2186	1943	1752	2117	1904	1733	1654
6	2634	2136	1802	1563	2562	2100	1785	1555	2033	1751	1541	1970	1719	1528	1911	1688	1514	1437
7	2436	1929	1601	1371	2370	1899	1587	1366	1841	1560	1355	1786	1534	1345	1736	1508	1335	1261
8	2262	1753	1434	1215	2203	1727	1423	1211	1678	1400	1203	1631	1379	1195	1587	1358	1188	1116
9	2108	1603	1294	1086	2055	1581	1285	1083	1538	1267	1077	1497	1249	1071	1459	1232	1065	996
10	1972	1474	1177	978	1924	1455	1169	976	1417	1153	971	1382	1139	967	1348	1124	962	896

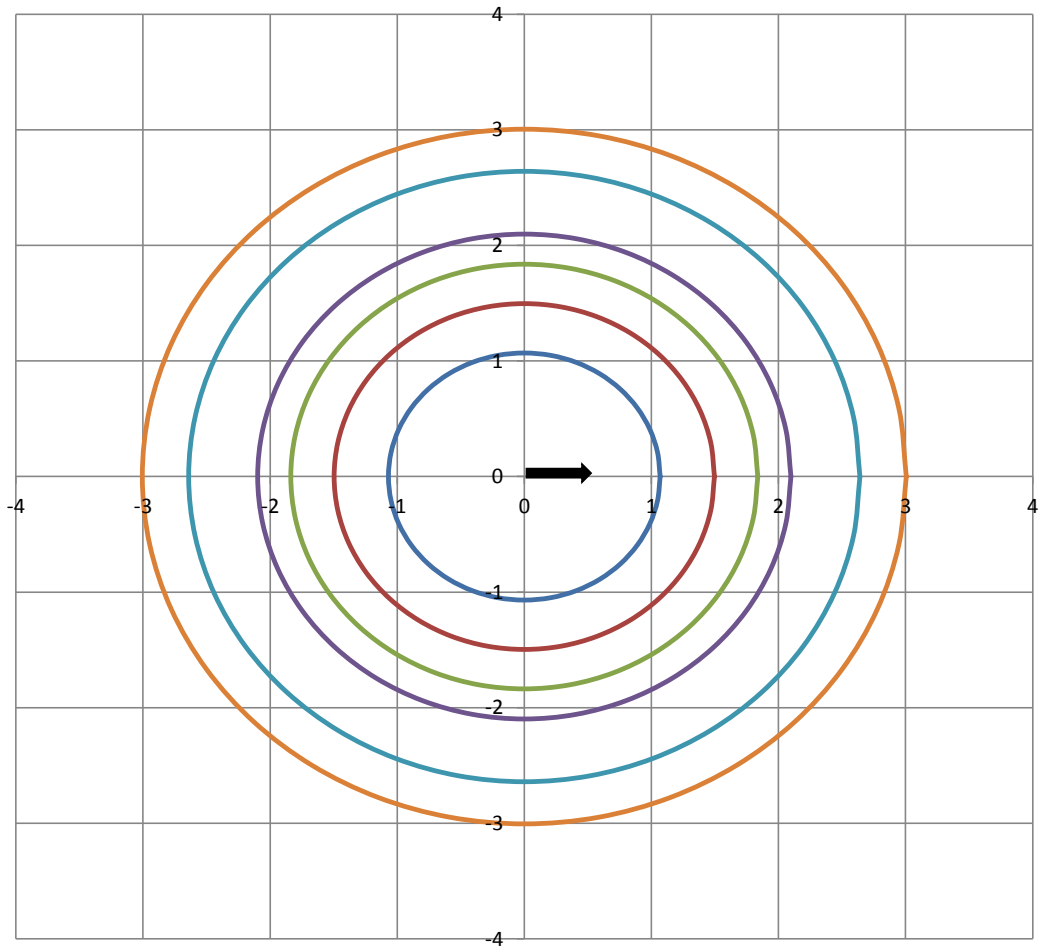
Beam and Field Information	
CIE Type:	Direct
Center Beam Intensity:	1180 Candela
Central Cone Intensity:	1180 Candela
Beam Flux:	3156.1 Lumens
Beam Angle (0-180):	120.8 Degrees
Beam Angle (90-270):	120.8 Degrees
Field Angle (0-180):	152.5 Degrees
Field Angle (90-270):	152.5 Degrees

Cone of Light Tabulation			
Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		73.8	5.72
6.00		32.8	8.58
8.00		18.4	11.4
10.0		11.8	14.3
12.0		8.20	17.2
14.0		6.02	20.0
16.0		4.61	22.9



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