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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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Catalog Number
HP2-LED-x60-SP-9 CO2-LED-x60-SP-9

Order Number

11353040

Test Number

11353040.08

Test Date

2016-09-02

Prepared By

Khang Nguyen, Technician

Approved By

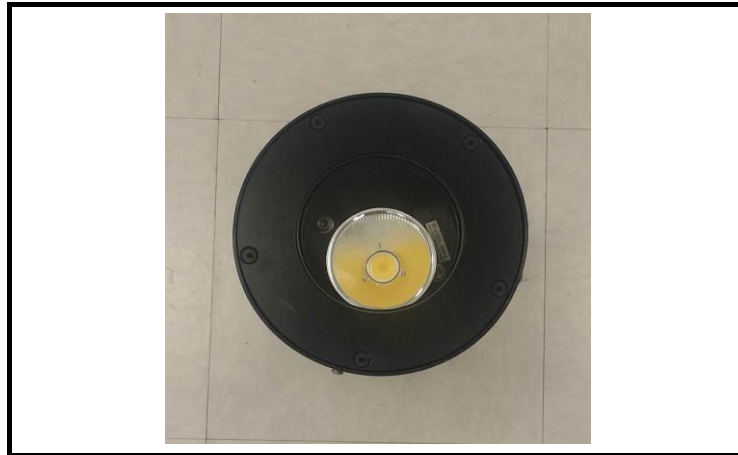
Eric Gaudreau, Senior Engineering Associate

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Luminaire Description: Circular formed black aluminum cylinder housing with an internal linear specular plastic reflector and a clear glass lens
Lamp: One (1) White LED
Mounting: Surface
Ballast/Driver: One (1) POWERSELECT PS60U700C14T

Luminaire



Luminaire Characteristics

Luminous Diameter: 3.75 in.

Summary of Results

Total Luminaire Output:	1027 Lumens
Luminaire Efficacy:	81 lm/w
Maximum Candela:	4503 Candela

Test Conditions

Test Temperature:	24.8 °C
Voltage:	120.0 VAC
Current:	0.1088 A
Power:	12.68 W
Power Factor:	0.971
Frequency:	60 Hz
Current THD:	15.2 %

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
24.8 °C	120.0 VAC	0.1088 A	12.68 W	0.971	60 Hz	15.2 %

Summary of Results

Spacing Criteria

0-180: 0.39

90-270: 0.27

Total Lumen Output:

1027 Lumens

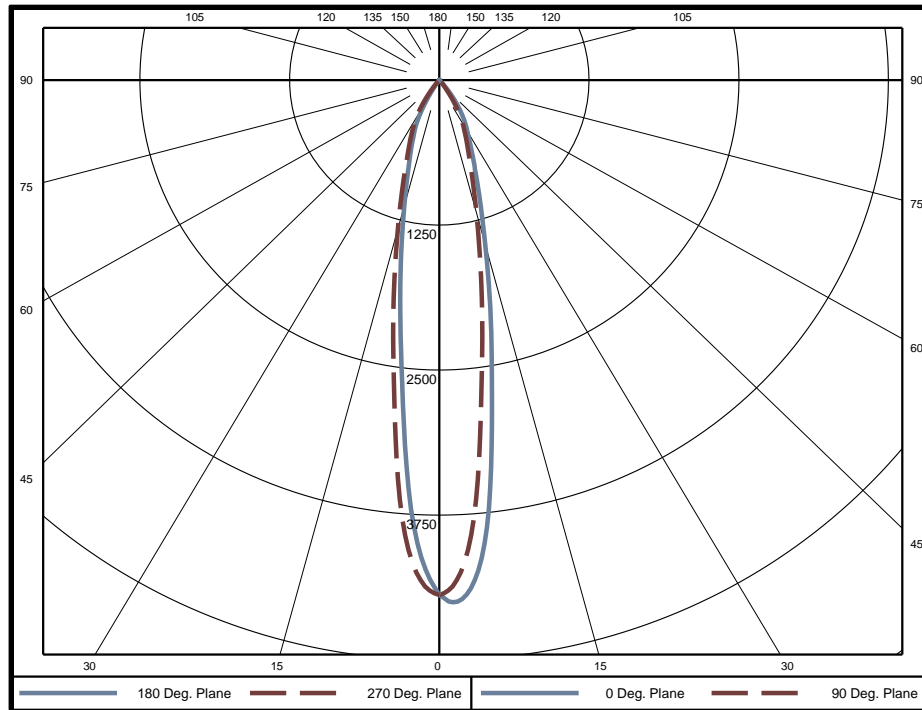
Luminaire Efficacy:

81.0 lm/w

Maximum Candela:

4503 Candela

Polar Plot



Zonal Lumen Summary

Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire	Zone	Lumens	% of Luminaire
0-5	97.0	9.4%	60-65	0.6	0.1%	120-125	0	0.0%
5-10	197.6	19.2%	65-70	0.3	0.0%	125-130	0	0.0%
10-15	195.5	19.0%	70-75	0.2	0.0%	130-135	0	0.0%
15-20	164.9	16.1%	75-80	0.1	0.0%	135-140	0	0.0%
20-25	136.3	13.3%	80-85	0.1	0.0%	140-145	0	0.0%
25-30	111.3	10.8%	85-90	0.0	0.0%	145-150	0	0.0%
30-35	75.2	7.3%	90-95	0	0.0%	150-155	0	0.0%
35-40	34.1	3.3%	95-100	0	0.0%	155-160	0	0.0%
40-45	8.8	0.9%	100-105	0	0.0%	160-165	0	0.0%
45-50	2.7	0.3%	105-110	0	0.0%	165-170	0	0.0%
50-55	1.3	0.1%	110-115	0	0.0%	170-175	0	0.0%
55-60	0.8	0.1%	115-120	0	0.0%	175-180	0	0.0%

Zone	Lumens	% of Luminaire
0-40	1012	98.5%
0-60	1026	99.9%
0-90	1027	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	4439	4439	4439	4439	4439	4439	4439	4439	4439	4439	4439	4439	4439	4439	4439
	5	4135	3993	3895	3780	3632	3499	3378	3337	3159	3337	3378	3499	3632	3780	3895
	10	2572	2433	2356	2246	2130	2034	1950	1902	1801	1902	1950	2034	2130	2246	2356
	15	1531	1449	1391	1326	1262	1205	1156	1124	1065	1124	1156	1205	1262	1326	1391
	20	947	892	861	822	786	760	728	707	679	707	728	760	786	822	861
	25	632	598	581	564	539	515	487	475	459	475	487	515	539	564	581
	30	452	429	416	405	364	317	286	254	217	254	286	317	364	405	416
	35	286	264	249	225	166	126	104	58	28	58	104	126	166	225	249
	40	118	100	90	58	42	35	14	9	7	9	14	35	42	58	90
	45	18	16	14	11	9	8	4	4	3	4	4	8	9	11	14
	50	9	7	6	6	4	2	2	2	2	2	2	4	6	6	7
	55	4	3	3	3	2	2	2	1	1	1	2	2	2	3	3
	60	2	2	2	2	1	1	1	1	1	1	1	1	1	2	2
	65	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
	70	1	1	1	1	1	0	0	0	0	0	0	0	1	1	1
	75	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	80	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	85	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
	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/m²)

Horizontal Angle (Degrees)

Vertical Angle (Degrees)	0	45	90
	0	622900	622900
	45	3529	2848
	55	916	744
	65	350	319
	75	266	232
	85	195	184



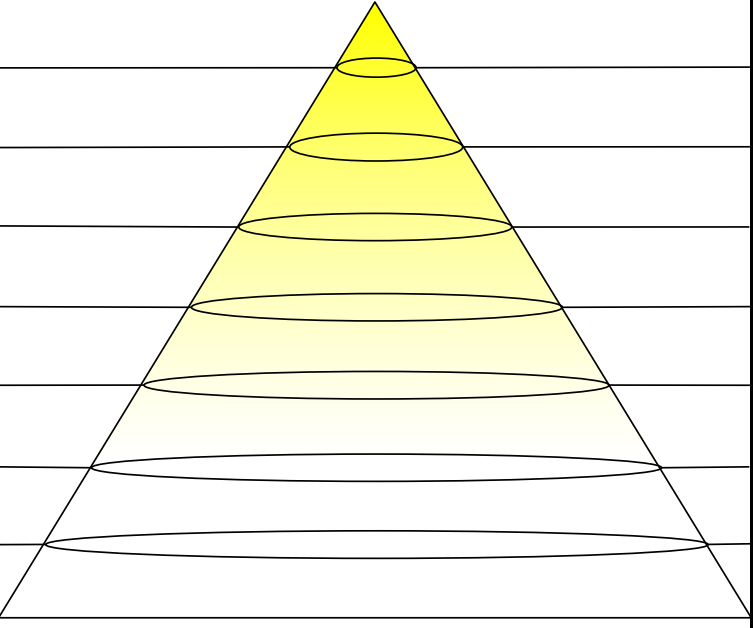
Utilization of Lumens - Zonal Cavity Method

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	1222	1222	1222	1222	1194	1194	1194	1194	1141	1141	1141	1092	1092	1092	1048	1048	1048	1027
1	1177	1153	1132	1112	1152	1131	1112	1095	1090	1075	1061	1052	1041	1030	1017	1009	1000	983
2	1132	1091	1058	1029	1111	1074	1044	1018	1042	1017	996	1012	992	975	985	969	955	939
3	1090	1037	996	963	1071	1023	986	956	998	966	941	974	948	926	952	931	913	898
4	1050	988	943	909	1033	977	936	903	957	921	893	937	907	883	919	894	873	860
5	1012	945	897	862	998	936	891	858	918	880	851	903	870	844	888	860	837	824
6	977	905	856	822	964	897	852	819	883	843	814	870	835	809	858	827	803	791
7	943	868	820	786	931	862	816	784	850	810	780	839	803	776	829	797	772	761
8	912	835	787	754	901	830	784	752	820	779	749	810	773	747	802	768	744	733
9	882	804	757	725	872	800	755	724	791	750	721	783	746	719	776	742	717	706
10	854	776	729	698	845	772	728	698	765	724	696	758	721	694	751	717	693	682

Beam and Field Information

CIE Type:	Direct
Center Beam Intensity:	4439 Candela
Central Cone Intensity:	4167 Candela
Beam Flux:	285.6 Lumens
Beam Angle (0-180):	19.5 Degrees
Beam Angle (90-270):	19.2 Degrees
Field Angle (0-180):	55.6 Degrees
Field Angle (90-270):	55.4 Degrees

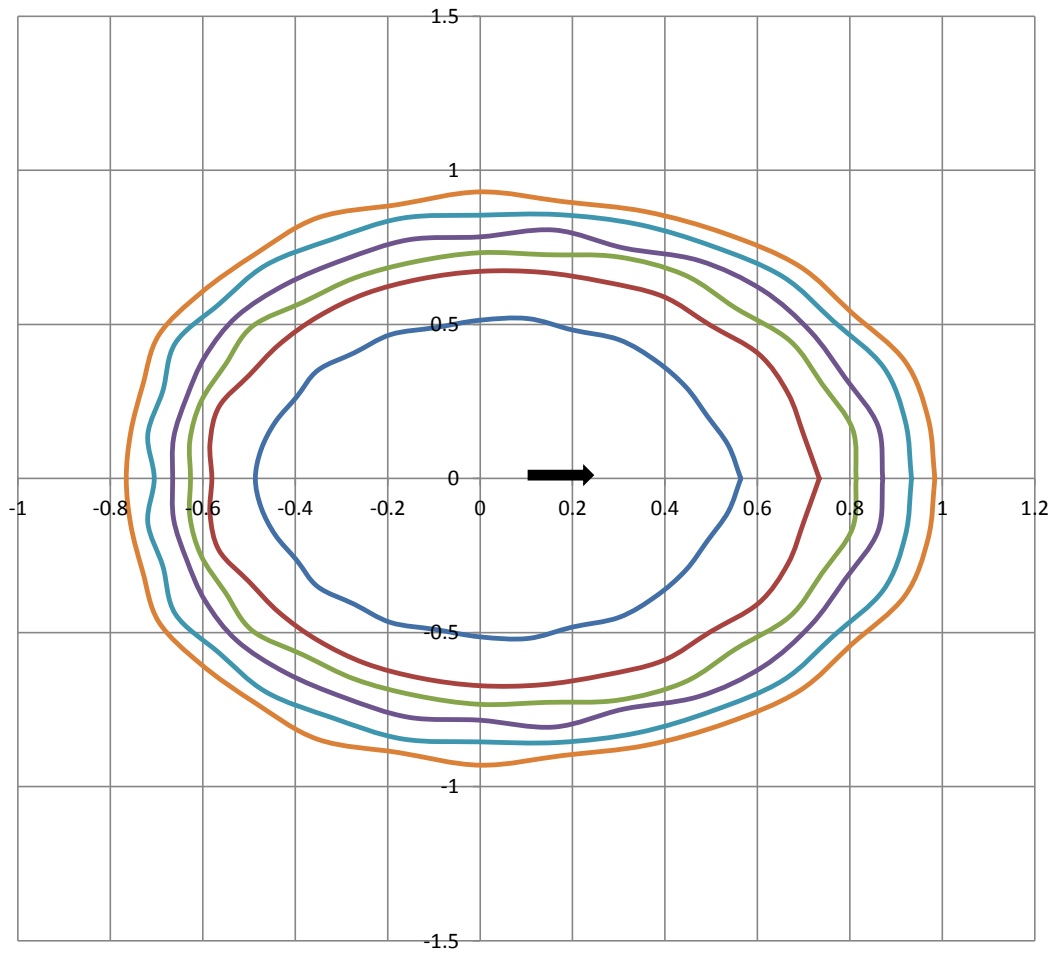
Cone of Light Tabulation

Mounting Height (Feet)		Footcandles at Nadir	Diameter (Feet)
4.00		277	1.31
6.00		123	1.97
8.00		69.4	2.63
10.0		44.4	3.29
12.0		30.8	3.94
14.0		22.6	4.60
16.0		17.3	5.26



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