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Report No: L111406801R01

Date: 11/21/2014



NVLAP LAB CODE 200927-0

Report No: L111406801R01

Report Prepared For: Bartco Lighting
 5761 Research Dr. Huntington Beach, CA 92648

Model Number: BSS110

Test: Electrical and Photometric tests

Standards Used: Appropriate part or all test guidelines were used for test performed:
IESNA LM79: 2008 Approved Methods for Electrical and Photometric Measurements of Solid-State Lighting Products
ANSI NEMA ANSLG C78.377: 2008 Specification of the Chromaticity of Solid State Lighting Products
ANSI C82.77:2002: Harmonic Emission Limits-Related Quality Requirements for Lighting Equipment

Description of Sample: Client submitted the sample. Catalog number is BSS110. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 11/20/14

Date of Tests: 11/21/14 - 11/21/14

Seasoning of Sample: No seasoning was performed in accordance with IESNA LM-79.

Equipment List

Equipment Used	Model No	Stock No	Calibration Due Date
Chroma Programmable AC Source	61604	PS-AC02	--
Yokogawa Digital Power Meter	WT210	MT-EL06-S1	01/04/15
Xitron Power Analysis System	2503AH	MT-EL01	01/09/15
BK Precision DC Power Supply	1747	PSDC-04	01/08/15
Fluke Digital Thermometer	52k/J	MT-TP02-GC	01/04/15
LLI Type C Goniophotometer System	RMG-C-MKII	CD-LL04-GC	--
LLI 2M Sphere	2MR97	CD-SN03-S2	--
LLI Spectroradiometer	SPR-3000	MT-SC01-S2	Before Use

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

Test Summary

Manufacturer:	Bartco Lighting
Model Number:	BSS110
Driver Model Number:	COOL LED CL33-700SA-UNI-B
Total Lumens:	1062.62
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.12
Input Power (W):	13.93
Input Power Factor:	0.95
Current ATHD @ 120V(%):	5%
Current ATHD @ 277V(%):	N/A
Efficacy:	76
Color Rendering Index (CRI):	85
Correlated Color Temperature (K):	3572
Chromaticity Coordinate x:	0.4011
Chromaticity Coordinate y:	0.3879
Ambient Temperature (°F):	77.0
Stabilization Time (Hours):	0:50
Total Operating Time (Hours):	1:55
Off State Power(W):	0.00

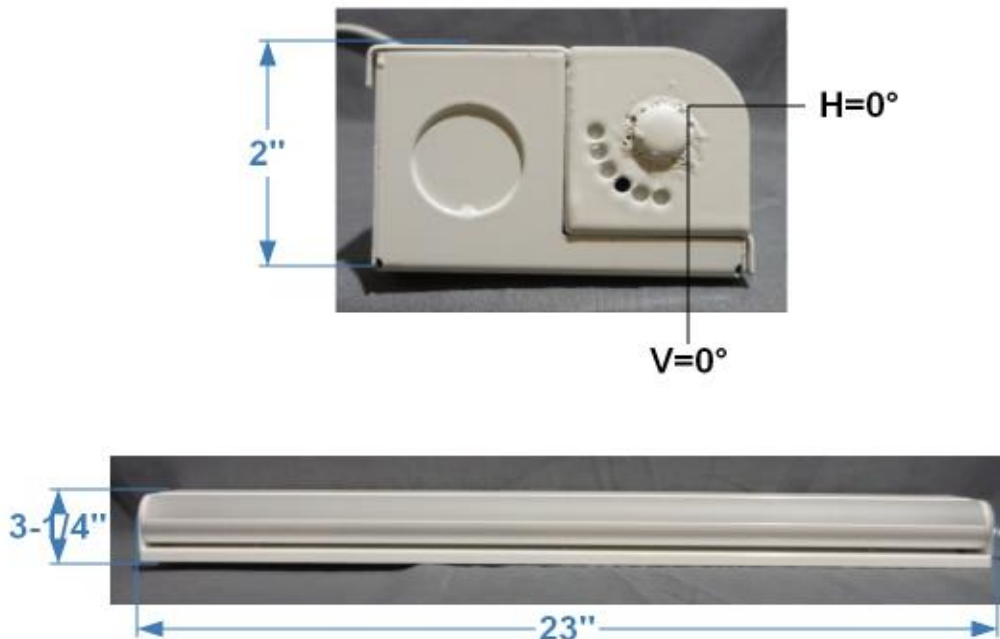
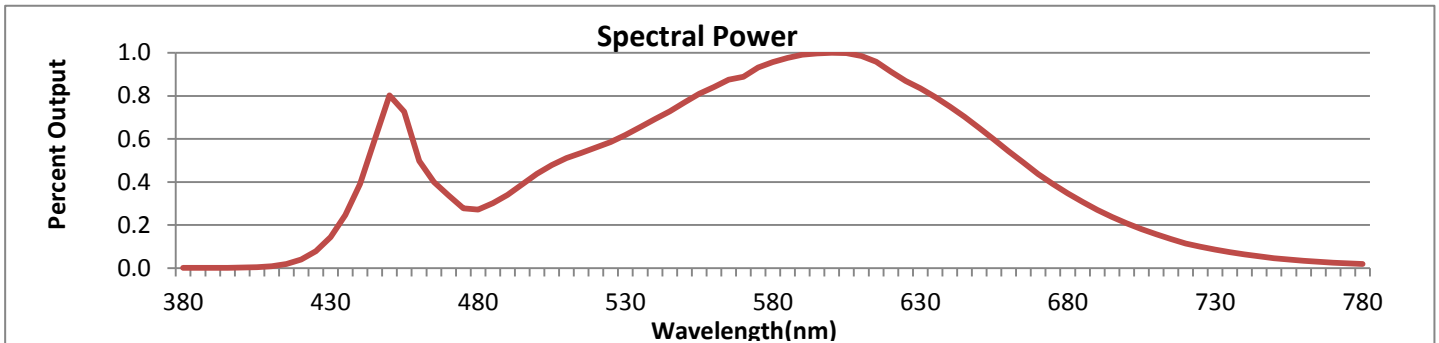


FIG. 1 LUMINAIRE

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.



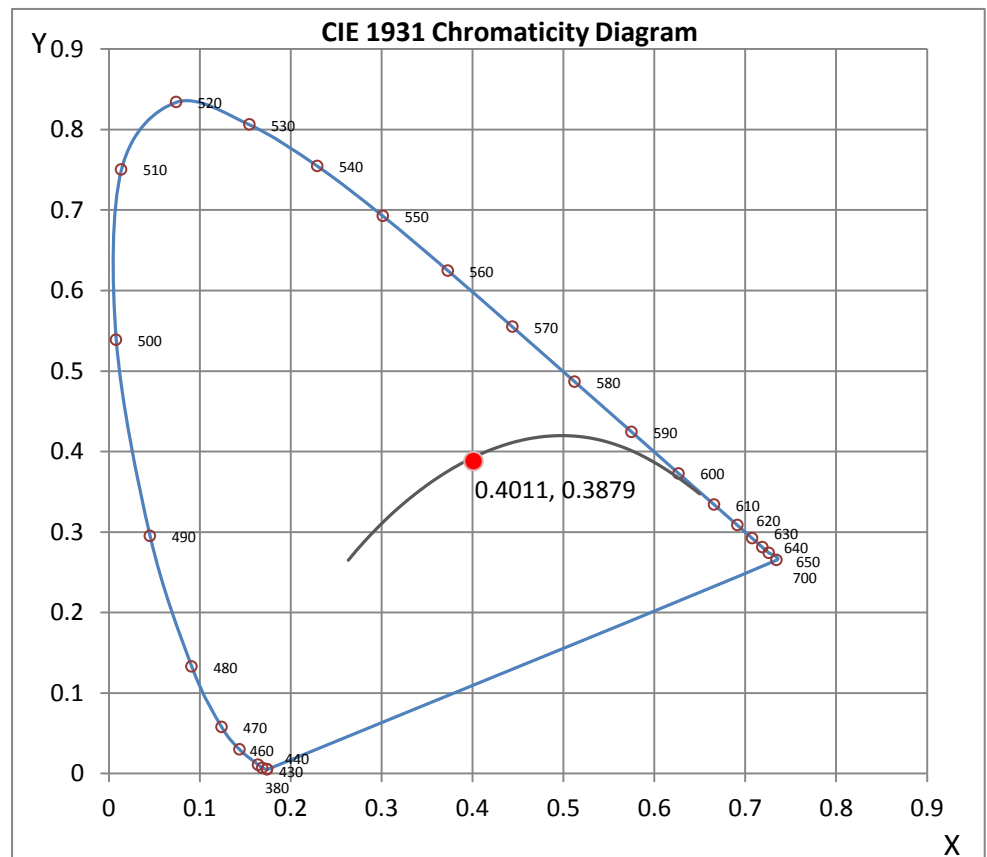
Wavelength	W/m ² nm	440	0.3903	510	0.5106	580	0.9567	650	0.6505	720	0.1149
380	0.0011	450	0.8028	520	0.5605	590	0.9908	660	0.5418	730	0.0854
390	0.0012	460	0.4977	530	0.6189	600	1.0000	670	0.4369	740	0.0630
400	0.0022	470	0.3374	540	0.6921	610	0.9859	680	0.3470	750	0.0464
410	0.0084	480	0.2724	550	0.7696	620	0.9132	690	0.2707	760	0.0337
420	0.0405	490	0.3403	560	0.8416	630	0.8350	700	0.2074	770	0.0251
430	0.1435	500	0.4387	570	0.8891	640	0.7498	710	0.1575	780	0.0187

CRI & CCT

x	0.4011
y	0.3879
u'	0.2341
v'	0.5095
CRI	85.10
CCT	3572
Duv	-0.00030

R Values

R1	83.58
R2	90.97
R3	95.94
R4	83.45
R5	83.34
R6	87.06
R7	87.57
R8	69.27
R9	25.38
R10	78.29
R11	81.78
R12	68.56
R13	85.24
R14	97.61



*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

Test Methods

Photometric Measurements - Goniophotometer

A Custom Light Laboratory Type C Rotating Mirror Goniophotometer was used to measure candelas(intensity) at each angle of distribution as defined by IESNA for the appropriate fixture type.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Spectral Measurements - Integrating Sphere

A Sensing Spectroradiometer SPR-3000, in conjunction with Light Laboratory 2 meter integrating sphere was used to measure chromaticity coordinates, correlated color temperature(CCT) and the color rendering index(CRI) for each sample.

Ambient temperature is set to 25°C and is measured from the center of the fixture, within 1ft from the outside of the fixture. Temperature is maintained at 25°C throughout the testing process and the sample is stabilized for at least 30mins and longer as necessary for the sample to achieve stabilization.

Electrical measurements are measured using the listed equipment.

Disclaimers:

This report must not be used by the customer to claim product certification, approval or endorsement by NVLAP, NIST or any agency of Federal Government.

Report Prepared by : Randy Chau

Test Report Released by:



Jeff Ahn
Engineering Manager

Test Report Reviewed by:



Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 12*



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Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111406801R01.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L111406801R01
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUEDATE] 11/21/2014
 [MANUFAC] BARTCO LIGHTING
 [LUMCAT] BSS110
 [LUMINAIRE] 3-1/4"L. X 23"W. X 2"H. LED LUMINAIRE
 [MORE] DIFFUSED LENS
 [BALLASTCAT] COOL LED CL33-700SA-UNI-B
 [BALLAST] INPUT: 120-277VAC, 0.4A, 50/60Hz. OUTPUT: 700/350mA, 33Wmax, 48VDC
 [LAMPPOSITION] 0,0
 [LAMPCAT] N/A
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [_INPUT] 120VAC, 13.93W
 [_TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1063
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	76
Total Luminaire Watts	13.93
Ballast Factor	1.00
CIE Type	Indirect
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.08 ft
Luminous Width (90-270)	1.88 ft
Luminous Height	0.06 ft

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111406801R01.IES

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	1254	802	0
55	2231	1458	0
65	3678	2606	0
75	6177	4858	0
85	10709	9466	0

CANDELA TABULATION

	<u>0</u>	<u>5</u>	<u>10</u>	<u>15</u>	<u>20</u>	<u>25</u>	<u>30</u>	<u>35</u>	<u>40</u>	<u>45</u>
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	5.24	5.22	5.15	5.06	4.95	4.81	4.64	4.47	4.21	0.00
25	7.05	7.04	6.92	6.76	6.53	6.27	5.97	5.65	5.32	5.00
30	9.48	9.43	9.25	8.98	8.64	8.20	7.74	7.20	6.70	6.13
35	12.63	12.53	12.28	11.90	11.39	10.71	10.05	9.30	8.49	7.66
40	16.70	16.55	16.18	15.65	14.90	14.06	13.06	11.99	10.90	9.72
45	21.70	21.55	21.06	20.25	19.30	18.11	16.85	15.41	13.91	12.31
50	29.54	29.34	28.82	27.96	26.72	25.08	22.27	20.09	18.00	15.91
55	37.07	36.80	36.23	35.11	33.61	31.70	29.48	26.80	24.00	20.93
60	46.24	45.98	45.24	44.00	42.29	39.96	37.31	34.06	30.61	26.84
65	56.71	56.42	55.53	54.18	52.17	49.45	46.19	42.69	38.41	33.66
70	69.92	69.97	68.34	66.68	64.47	61.39	57.77	53.45	48.45	42.72
75	84.95	84.54	83.51	81.58	79.10	75.56	70.08	66.02	60.34	53.87
80	102.98	102.55	101.37	99.25	96.50	92.68	87.76	81.73	75.65	67.46
85	124.96	124.56	123.15	120.81	117.50	113.33	107.76	100.80	93.21	84.46
90	150.63	150.17	148.58	145.96	142.47	137.28	131.20	123.20	114.49	104.49
95	181.46	180.91	179.16	176.32	172.12	166.16	159.11	150.44	140.01	127.99
100	215.21	214.58	212.50	209.17	204.27	197.40	188.82	179.34	167.45	153.72
105	252.99	252.19	249.76	245.65	240.20	232.19	222.84	211.49	197.93	182.43
110	291.02	290.05	287.33	282.41	276.22	267.12	256.51	243.02	228.53	212.16
115	329.35	328.17	324.90	319.57	312.18	302.88	290.53	275.55	259.80	242.05
120	364.33	363.14	359.49	353.65	345.65	335.47	322.09	306.20	289.58	270.75
125	394.72	393.47	389.63	383.55	375.53	363.70	350.60	334.97	317.03	296.68
130	419.40	418.05	414.06	407.88	399.79	387.80	374.61	358.97	341.02	320.75
135	436.58	435.15	431.70	425.86	417.42	405.89	392.99	376.77	359.87	340.96
140	446.81	445.47	441.87	436.17	427.85	417.82	405.09	389.76	373.98	356.27
145	448.35	447.30	444.03	438.74	431.55	421.48	410.43	396.94	382.05	364.81
150	442.60	441.62	438.77	433.92	427.73	418.73	408.86	396.96	383.88	368.43
155	429.32	428.49	426.00	421.89	416.17	409.26	400.29	389.71	379.06	366.22
160	408.14	407.52	405.45	402.12	397.54	391.86	384.72	376.08	367.32	357.00
165	380.28	379.88	378.33	375.82	372.42	367.77	362.77	356.25	349.69	342.05
170	346.84	346.53	345.55	343.88	341.72	338.69	335.39	331.36	326.90	321.65
175	308.99	308.88	308.36	307.58	306.60	305.22	303.58	301.78	299.70	297.30
180	271.85	271.85	271.85	271.85	271.85	271.85	271.85	271.85	271.85	271.85

Vert. Angles Horizontal Angles

	<u>50</u>	<u>55</u>	<u>60</u>	<u>65</u>	<u>70</u>	<u>75</u>	<u>80</u>	<u>85</u>	<u>90</u>	<u>95</u>
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	4.63	4.19	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	5.59	5.09	4.56	4.14	0.00	0.00	0.00	0.00	0.00	0.00
35	6.82	6.07	5.31	4.65	4.12	0.00	0.00	0.00	0.00	0.00
40	8.45	7.26	6.30	5.33	4.51	0.00	0.00	0.00	0.00	0.00
45	10.59	9.01	7.55	6.26	5.13	4.19	0.00	0.00	0.00	0.00
50	13.91	11.63	9.43	7.44	5.85	4.57	0.00	0.00	0.00	0.00
55	17.62	14.45	11.72	9.03	6.74	5.07	0.00	0.00	0.00	0.00
60	22.72	18.71	14.71	11.26	8.11	5.65	4.07	0.00	0.00	0.00

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111406801R01.IES

CANDELA TABULATION - (Cont.)

65	29.06	23.95	18.85	14.23	10.17	6.65	4.41	0.00	0.00	0.00
70	37.16	30.98	24.71	18.85	13.88	8.39	5.03	0.00	0.00	0.00
75	46.63	39.47	31.87	24.63	17.46	11.07	6.15	0.00	0.00	0.00
80	58.85	49.93	41.64	32.31	23.46	16.41	8.44	0.00	0.00	0.00
85	71.87	63.88	54.05	42.97	32.12	21.98	14.86	5.65	0.00	0.00
90	93.03	81.89	69.17	57.07	44.45	32.49	21.79	14.09	0.00	0.00
95	115.45	102.54	88.78	73.07	61.58	47.66	35.93	25.12	15.19	8.42
100	139.55	125.09	109.76	94.14	75.01	64.46	51.51	39.54	28.22	19.73
105	166.46	150.35	133.47	117.03	100.65	84.96	69.37	55.56	43.08	33.65
110	193.87	176.19	157.77	139.87	121.39	104.82	88.46	73.13	60.58	48.74
115	222.25	202.45	184.44	164.45	144.89	126.85	109.20	92.94	76.13	66.38
120	249.81	229.04	210.16	189.26	168.55	148.36	130.80	114.32	97.94	84.73
125	276.27	255.69	234.21	213.88	193.23	171.14	153.07	135.63	118.17	103.46
130	301.06	279.42	258.16	237.84	215.23	195.02	175.51	157.41	139.26	123.72
135	319.93	299.01	279.34	258.98	236.38	216.62	197.05	177.66	160.86	144.51
140	336.40	316.71	298.82	277.70	256.18	236.32	217.83	199.34	180.90	165.16
145	347.30	330.04	311.39	292.21	273.11	253.58	235.60	217.70	199.92	183.71
150	352.83	337.53	320.40	303.13	285.96	268.98	251.54	234.03	218.21	202.71
155	352.47	338.47	324.87	309.09	293.50	279.21	263.65	247.99	233.78	220.28
160	345.98	334.46	323.33	310.31	297.46	284.74	272.46	259.89	247.22	235.68
165	333.76	325.46	316.12	306.67	296.87	287.04	277.47	267.72	257.93	248.22
170	316.48	310.91	304.75	298.41	292.22	285.28	278.80	272.29	265.59	258.87
175	294.81	292.21	289.26	286.29	283.22	280.11	276.75	273.40	270.41	266.90
180	271.85	271.85	271.85	271.85	271.85	271.85	271.85	271.85	271.85	271.85

Vert. Angles **Horizontal Angles**

	100	105	110	115	120	125	130	135	140	145
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
80	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	6.45	5.61	5.21	4.99	4.91	4.84	4.79	4.78	4.78	4.78
100	15.81	12.18	10.45	9.34	8.60	8.00	7.56	7.26	7.01	6.81
105	26.83	22.05	18.78	16.89	14.59	13.19	12.10	11.38	10.75	10.29
110	40.36	33.48	28.63	25.16	22.53	20.31	18.48	17.25	15.77	14.90
115	55.54	47.28	40.76	35.80	32.04	28.86	26.31	24.30	22.69	21.34
120	72.45	62.64	54.94	48.30	43.13	39.13	35.60	32.77	30.70	28.98
125	90.37	79.37	70.07	62.15	56.00	50.46	45.96	42.42	39.82	37.55
130	110.18	97.39	86.42	78.09	70.45	63.84	58.07	53.94	50.48	47.53
135	129.58	115.78	104.42	94.16	86.02	78.47	72.01	66.79	62.54	59.19

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111406801R01.IES

CANDELA TABULATION - (Cont.)

140	149.90	135.48	123.45	112.27	102.97	95.52	87.94	81.65	77.02	72.99
145	168.61	154.84	142.44	130.69	121.49	112.85	105.07	98.13	92.98	88.44
150	188.96	174.96	162.29	151.54	141.59	132.82	124.52	117.79	111.94	106.84
155	206.46	194.03	182.65	171.45	162.15	153.55	145.75	138.41	132.67	127.74
160	223.64	212.86	202.75	192.78	183.88	176.69	169.07	162.19	156.65	151.88
165	239.00	230.31	222.09	213.90	206.41	200.33	193.86	187.92	183.03	178.74
170	252.40	246.38	240.51	234.72	229.50	224.55	219.97	215.57	211.84	208.60
175	263.83	260.66	257.55	254.88	251.94	249.36	246.89	244.70	242.60	240.78
180	271.85	271.85	271.85	271.85	271.85	271.85	271.85	271.85	271.85	271.85

Vert. Horizontal Angles

	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
0	0.00	0.00	0.00	0.00	0.00	0.00	0.00
5	0.00	0.00	0.00	0.00	0.00	0.00	0.00
10	0.00	0.00	0.00	0.00	0.00	0.00	0.00
15	0.00	0.00	0.00	0.00	0.00	0.00	0.00
20	0.00	0.00	0.00	0.00	0.00	0.00	0.00
25	0.00	0.00	0.00	0.00	0.00	0.00	0.00
30	0.00	0.00	0.00	0.00	0.00	0.00	0.00
35	0.00	0.00	0.00	0.00	0.00	0.00	0.00
40	0.00	0.00	0.00	0.00	0.00	0.00	0.00
45	0.00	0.00	0.00	0.00	0.00	0.00	0.00
50	0.00	0.00	0.00	0.00	0.00	0.00	0.00
55	0.00	0.00	0.00	0.00	0.00	0.00	0.00
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00
65	0.00	0.00	0.00	0.00	0.00	0.00	0.00
70	0.00	0.00	0.00	0.00	0.00	0.00	0.00
75	0.00	0.00	0.00	0.00	0.00	0.00	0.00
80	0.00	0.00	0.00	0.00	0.00	0.00	0.00
85	0.00	0.00	0.00	0.00	0.00	0.00	0.00
90	0.00	0.00	0.00	0.00	0.00	0.00	0.00
95	4.77	4.77	4.76	4.74	4.74	4.72	4.70
100	6.68	6.56	6.46	6.40	6.34	6.30	6.28
105	9.94	9.62	9.35	9.18	9.07	8.96	8.95
110	14.25	13.68	13.26	12.95	12.71	12.56	12.52
115	20.35	19.48	18.76	18.27	17.91	17.41	17.33
120	27.53	26.33	25.45	24.77	24.23	23.98	23.84
125	35.70	34.19	32.99	32.13	31.44	31.12	31.01
130	45.42	43.45	41.88	40.90	40.09	39.72	39.45
135	56.36	54.01	52.15	50.89	50.01	49.38	49.16
140	69.68	66.80	64.72	63.18	61.93	61.21	61.10
145	84.65	81.58	78.95	77.19	75.77	74.99	74.69
150	103.05	99.55	96.56	94.55	93.11	92.16	91.91
155	123.36	119.85	116.73	114.63	112.99	112.05	111.77
160	147.48	143.94	141.16	138.87	137.28	136.29	136.00
165	174.72	171.53	169.00	166.93	165.40	164.51	164.30
170	205.46	203.05	200.87	199.34	198.16	197.41	197.20
175	239.20	237.76	236.60	235.75	235.11	234.67	234.56
180	271.85	271.85	271.85	271.85	271.85	271.85	271.85

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	0.09	N.A.	0.00
0-30	0.99	N.A.	0.10
0-40	3.25	N.A.	0.30
0-60	17.04	N.A.	1.60
0-80	58.93	N.A.	5.50
0-90	100.51	N.A.	9.50
10-90	100.51	N.A.	9.50
20-40	3.16	N.A.	0.30
20-50	7.86	N.A.	0.70
40-70	29.61	N.A.	2.80
60-80	41.89	N.A.	3.90
70-80	26.06	N.A.	2.50
80-90	41.58	N.A.	3.90
90-110	164.69	N.A.	15.50
90-120	293.21	N.A.	27.60
90-130	443.45	N.A.	41.70
90-150	744.97	N.A.	70.10
90-180	962.11	N.A.	90.50
110-180	797.42	N.A.	75.00
0-180	1062.62	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	0.00
10-20	0.09
20-30	0.89
30-40	2.26
40-50	4.70
50-60	9.08
60-70	15.82
70-80	26.06
80-90	41.58
90-100	66.66
100-110	98.04
110-120	128.52
120-130	150.24
130-140	156.59
140-150	144.93
150-160	116.42
160-170	74.92
170-180	25.80

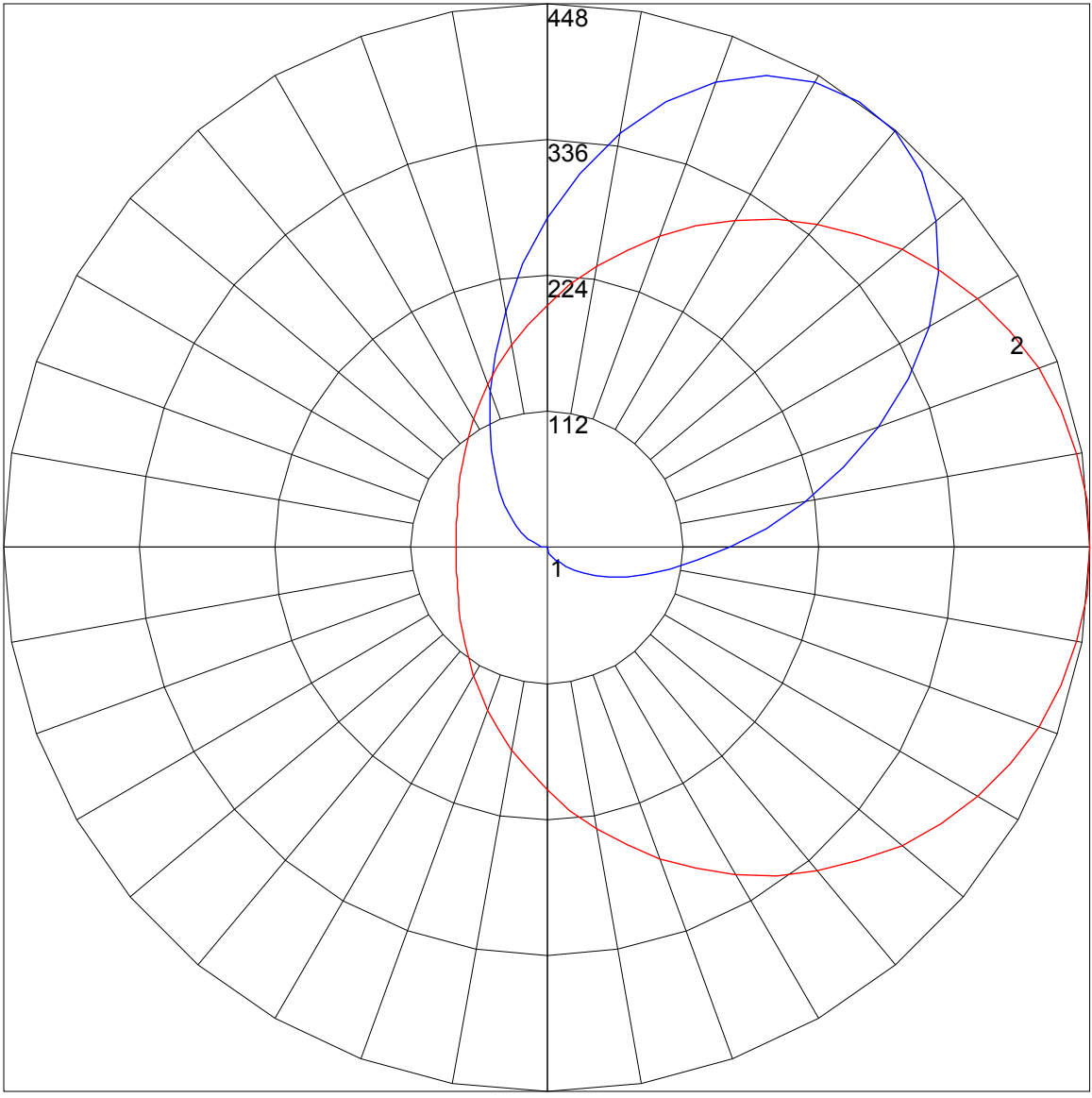
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111406801R01.IES

COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

Effective Floor Cavity Reflectance 0.20

RC	80				70				50			30			10			0
	RW	70	50	30	10	70	50	30	10	50	30	10	50	30	10	50	30	
0	97	97	97	97	85	85	85	85	61	61	61	39	39	39	19	19	19	9
1	87	82	78	74	75	71	67	64	50	48	46	31	30	28	14	13	12	4
2	78	71	64	59	68	61	56	51	43	40	37	27	25	23	11	10	9	2
3	71	62	54	48	61	53	47	42	38	34	30	23	21	19	10	8	7	2
4	65	54	46	40	56	47	40	35	33	29	25	20	18	15	8	7	6	1
5	59	48	40	34	51	41	35	30	29	25	21	18	15	13	7	6	5	1
6	54	43	35	29	47	37	30	25	26	22	18	16	13	11	7	5	4	1
7	50	38	30	25	43	33	27	22	23	19	16	14	12	10	6	5	4	0
8	46	34	27	22	40	30	23	19	21	17	14	13	10	8	5	4	3	0
9	43	31	24	19	37	27	21	17	19	15	12	12	9	7	5	4	3	0
10	40	28	21	17	34	25	19	15	18	13	11	11	8	6	5	3	2	0

POLAR GRAPH



Maximum Candela = 448.35 Located At Horizontal Angle = 0, Vertical Angle = 145
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (145) (Through Max. Cd.)