

Report No: L111705101 **Issue Date:** 11/21/2017

Report Prepared For: Bartco Lighting
5761 Research Drive, Huntington Beach, CA 92649

Model Number: BSS255-4-35-INDIRECT

Test: Photometric/Colorimetric/Electrical Test

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. Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Fixture is tested with Indirect side turned on only.

Sample Arrival Date: 11/15/17

Date of Tests: 11/17/17 - 11/20/17

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	11/28/17
ITECH	IT6122	PS-DC03-S1	11/28/17
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/28/17
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:	BSS255-4-35-INDIRECT
Driver Model Number:	PHILIPS ADVANCE XI040C110V054BST1
Total Lumens:	2256.97
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.23
Input Power (W):	26.91
Input Power Factor:	0.99
Current ATHD @ 120V(%):	10%
Current ATHD @ 277V(%):	N/A
Efficacy:	84
Color Rendering Index (CRI):	95
Correlated Color Temperature (K):	3368
Chromaticity Coordinate x:	0.4130
Chromaticity Coordinate y:	0.3946
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	2:15

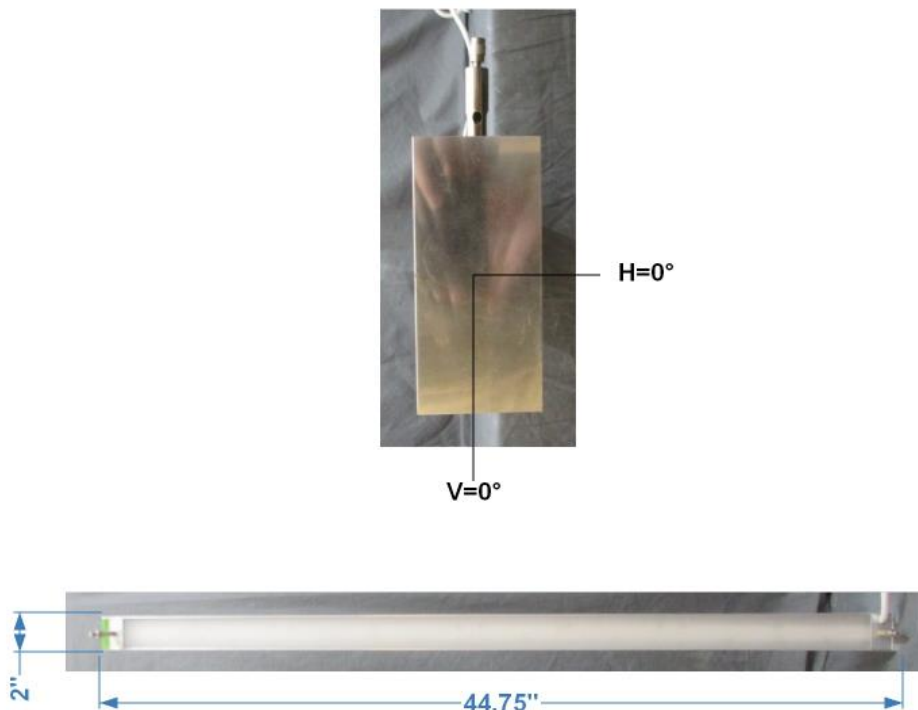
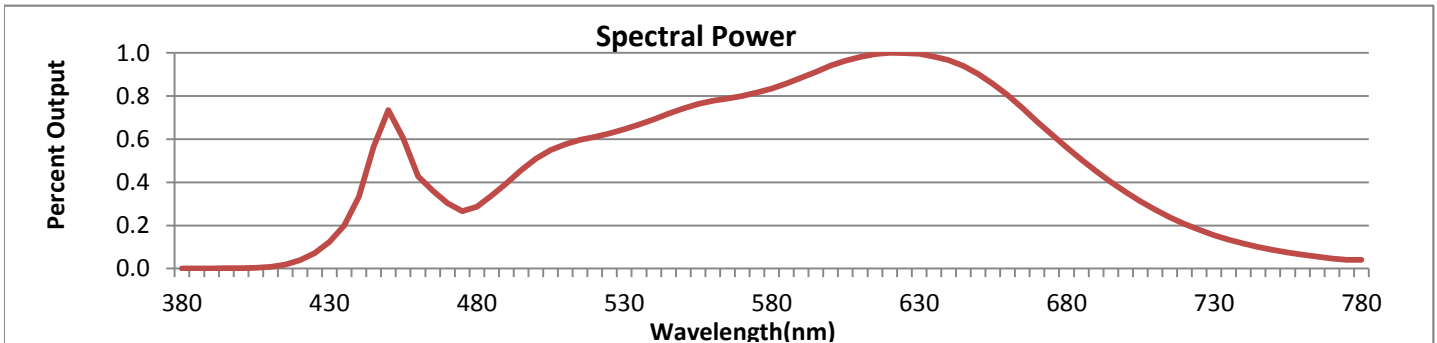


FIG. 1 LUMINAIRE

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



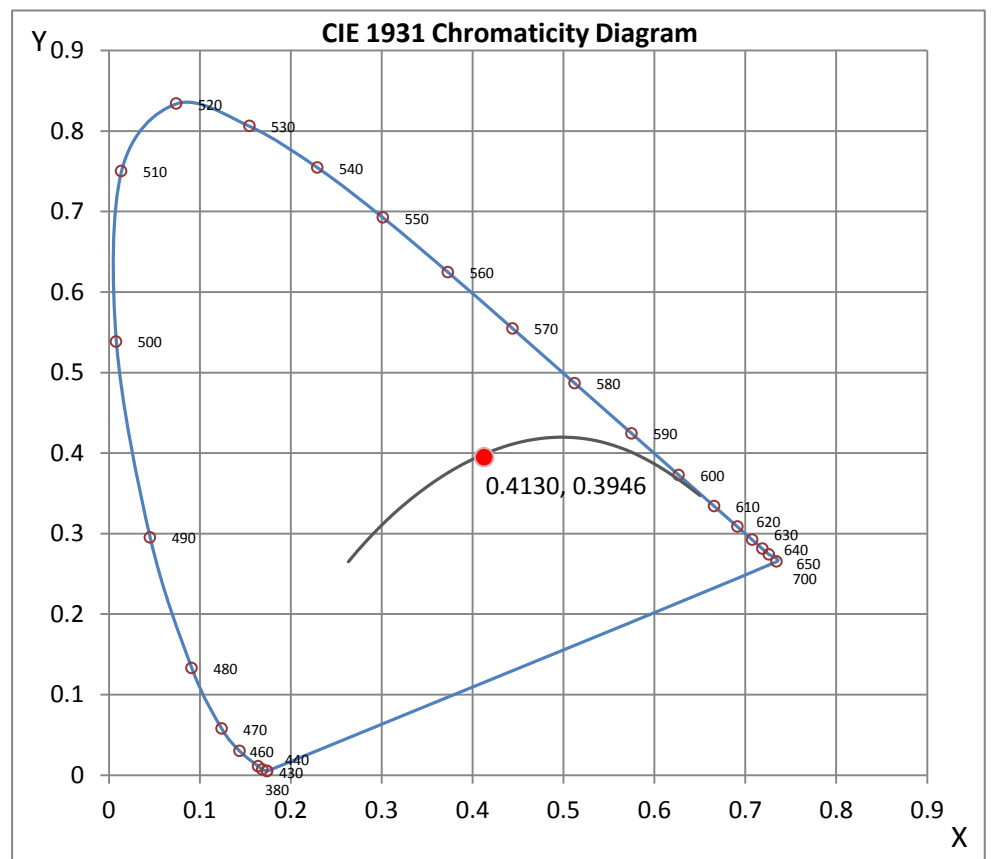
Wavelength	W/m ² nm	440	0.3331	510	0.5767	580	0.8339	650	0.9033	720	0.2074
380	0.0011	450	0.7355	520	0.6108	590	0.8844	660	0.8043	730	0.1552
390	0.0012	460	0.4277	530	0.6465	600	0.9409	670	0.6823	740	0.1156
400	0.0022	470	0.3038	540	0.6925	610	0.9812	680	0.5626	750	0.0860
410	0.0080	480	0.2873	550	0.7417	620	1.0000	690	0.4515	760	0.0638
420	0.0384	490	0.3949	560	0.7776	630	0.9956	700	0.3549	770	0.0472
430	0.1232	500	0.5096	570	0.8006	640	0.9660	710	0.2733	780	0.0404

CRI & CCT

x	0.4130
y	0.3946
u'	0.2391
v'	0.5140
CRI	94.90
CCT	3368
Duv	0.00007

R Values

R1	95.34
R2	96.69
R3	96.75
R4	95.79
R5	95.01
R6	95.19
R7	95.41
R8	89.01
R9	73.41
R10	91.59
R11	96.36
R12	82.09
R13	95.70
R14	97.63



*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 : Keyur Patel

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: 10*



8165 E. Kaiser Blvd. Anaheim, CA 92808
www.lightlaboratory.com

Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111705101.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L11705101
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUE DATE] 11/21/2017
[MANUFAC] Bartco Lighting
[LUMCAT] BSS255-4-35-INDIRECT
[LUMINAIRE] LED Architectural Direct/indirect Rectangular Fixture
[BALLASTCAT] PHILIPS ADVANCE XI040C110V054BST1
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[TEST CONDITION] FIXTURE IS TESTED WITH INDIRECT SIDE TURNED ON ONLY.
[INPUT] 120VAC, 26.91W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2257
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	84
Total Luminaire Watts	26.91
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)	0.17 ft
Luminous Width (90-270)	3.50 ft
Luminous Height	0.38 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	0	0	0
55	0	0	0
65	0	0	0
75	0	0	0
85	0	0	0

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111705101.IES**

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	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	35.54	32.70	32.82	32.91	32.46	32.31	32.16	32.49	33.25	33.90
100	77.47	71.40	72.10	71.80	71.42	71.17	71.91	72.96	73.54	76.06
105	124.97	119.11	116.60	117.75	117.22	116.38	116.19	117.00	119.06	121.07
110	178.78	178.57	170.69	167.38	168.21	169.05	168.95	170.74	172.65	175.30
115	238.90	239.08	237.36	231.84	229.14	228.48	230.22	232.15	234.93	238.27
120	304.58	304.26	304.35	303.09	301.23	299.80	300.03	302.75	304.33	304.88
125	372.50	372.13	372.77	373.42	373.26	373.67	374.08	374.58	375.33	376.19
130	445.66	445.31	445.23	445.55	445.83	445.90	446.44	447.06	447.53	447.63
135	519.98	519.96	519.63	519.68	520.07	520.24	520.17	521.27	521.05	522.14
140	593.55	592.97	592.41	592.37	593.06	593.84	593.42	594.20	595.00	595.55
145	664.46	663.59	663.23	663.69	663.37	664.00	664.97	664.18	665.14	665.54
150	730.31	729.13	729.52	728.90	729.18	729.75	730.69	730.34	730.86	731.04
155	789.35	787.99	788.68	787.75	788.13	788.31	788.74	791.05	789.52	789.14
160	839.67	838.05	838.38	838.86	837.78	837.99	838.83	838.53	839.56	839.77
165	879.86	878.53	878.26	878.50	878.92	877.84	877.50	877.90	879.03	879.29
170	909.17	908.24	907.75	907.46	907.46	907.74	908.29	907.33	906.80	906.63
175	926.94	926.45	925.99	925.68	925.36	925.10	924.90	924.76	924.67	924.65
180	933.00	933.00	933.00	933.00	933.00	933.00	933.00	933.00	933.00	933.00

Vert. 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>
0	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
10	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
20	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
30	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
40	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
50	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
60	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**IES INDOOR REPORT
 PHOTOMETRIC FILENAME : L111705101.IES**

CANDELA TABULATION - (Cont.)

65	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
75	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
85	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
95	34.27	35.52	37.45	37.11	36.87	36.59	35.65	34.84	30.81
100	76.79	77.64	81.17	81.29	82.95	84.31	83.67	81.54	79.55
105	123.68	125.91	127.04	127.25	127.42	126.95	126.10	124.05	120.99
110	177.97	180.17	181.49	182.38	182.58	180.88	179.70	177.39	175.46
115	240.94	241.82	242.03	242.30	241.87	240.49	238.66	235.95	234.33
120	305.88	307.61	306.11	303.70	303.64	304.70	304.36	301.68	300.43
125	374.55	374.59	375.55	372.19	369.62	371.37	373.29	371.32	369.76
130	447.94	448.45	448.45	448.30	448.72	447.36	445.67	443.78	441.76
135	521.28	521.55	521.91	521.70	521.93	521.60	519.79	519.04	519.98
140	595.64	595.68	595.58	595.45	594.73	594.84	593.60	593.02	593.55
145	666.04	667.72	666.88	666.82	666.86	666.39	665.55	664.14	664.38
150	731.15	731.81	732.25	731.69	732.93	731.55	732.15	729.72	730.64
155	790.51	790.12	789.44	790.50	789.82	790.22	790.40	788.67	789.43
160	839.38	839.13	839.92	839.11	839.44	841.03	840.29	840.36	842.08
165	878.96	878.13	878.05	878.71	880.20	879.56	879.48	879.87	881.19
170	906.81	907.35	908.18	907.67	907.43	907.47	907.79	908.32	909.25
175	924.69	924.78	924.94	925.15	925.42	925.74	926.08	926.54	927.02
180	933.00	933.00	933.00	933.00	933.00	933.00	933.00	933.00	933.00

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111705101.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	0.00	N.A.	0.00
0-30	0.00	N.A.	0.00
0-40	0.00	N.A.	0.00
0-60	0.00	N.A.	0.00
0-80	0.00	N.A.	0.00
0-90	0.00	N.A.	0.00
10-90	0.00	N.A.	0.00
20-40	0.00	N.A.	0.00
20-50	0.00	N.A.	0.00
40-70	0.00	N.A.	0.00
60-80	0.00	N.A.	0.00
70-80	0.00	N.A.	0.00
80-90	0.00	N.A.	0.00
90-110	170.35	N.A.	7.50
90-120	406.14	N.A.	18.00
90-130	740.87	N.A.	32.80
90-150	1558.42	N.A.	69.00
90-180	2256.97	N.A.	100.00
110-180	2086.62	N.A.	92.50
0-180	2256.97	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	0.00
10-20	0.00
20-30	0.00
30-40	0.00
40-50	0.00
50-60	0.00
60-70	0.00
70-80	0.00
80-90	0.00
90-100	39.52
100-110	130.83
110-120	235.79
120-130	334.73
130-140	401.89
140-150	415.66
150-160	363.18
160-170	247.57
170-180	87.79

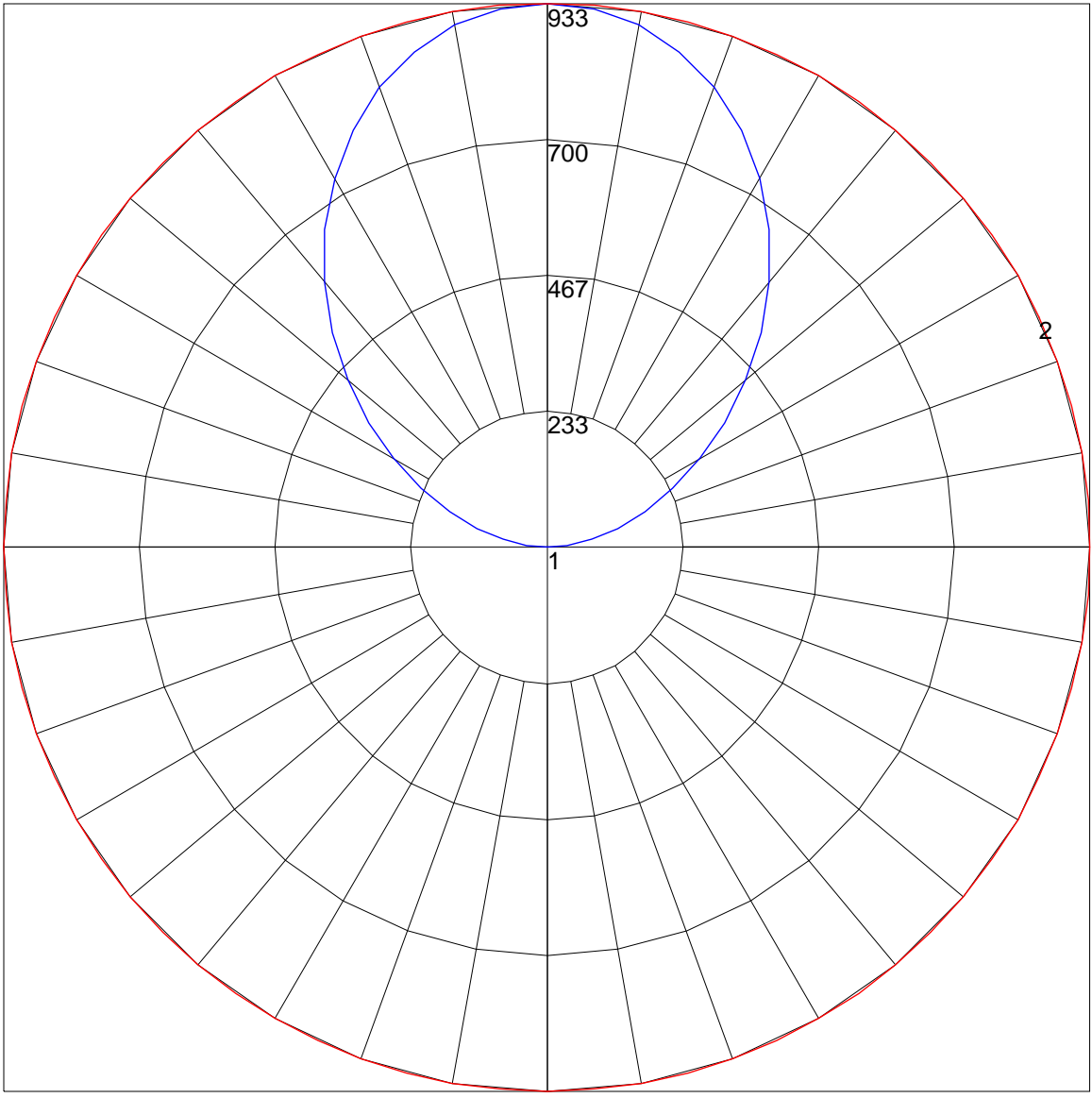
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L111705101.IES

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	95	95	95	95	81	81	81	81	56	56	56	32	32	32	10	10	10	0
1	87	83	79	76	74	71	68	65	48	47	45	28	27	26	9	9	8	0
2	79	72	66	62	67	62	57	53	42	40	37	24	23	22	8	7	7	0
3	72	63	56	51	61	54	49	44	37	34	31	21	20	18	7	6	6	0
4	65	56	48	43	56	48	42	37	33	29	26	19	17	16	6	6	5	0
5	60	49	42	36	51	42	36	32	29	25	22	17	15	13	5	5	4	0
6	55	44	36	31	47	38	32	27	26	22	19	15	13	11	5	4	4	0
7	50	39	32	27	43	34	28	23	23	19	17	14	11	10	4	4	3	0
8	47	35	28	23	40	30	24	20	21	17	14	12	10	9	4	3	3	0
9	43	32	25	20	37	28	22	18	19	15	13	11	9	8	4	3	3	0
10	40	29	22	18	34	25	19	16	17	14	11	10	8	7	3	3	2	0

POLAR GRAPH



Maximum Candela = 933 Located At Horizontal Angle = 0, Vertical Angle = 180
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (180) (Through Max. Cd.)