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www.lightlaboratory.com

Report No: L091707001



**Report No:** L091707001

**Issue Date:** 10/2/2017

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

**Model Number:** BSS205

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

**Testing Condition:** Fixture is tested with no special conditions.

**Sample Arrival Date:** 9/27/17

**Date of Tests:** 9/28/17 - 10/2/17

**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**

<b>Manufacturer:</b>	Bartco Lighting
<b>Model Number:</b>	BSS205
<b>Driver Model Number:</b>	PHILIPS ADVANCE XI040C110V054BST1
<b>Total Lumens:</b>	2941.66
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	0.24
<b>Input Power (W):</b>	29.12
<b>Input Power Factor:</b>	0.99
<b>Current ATHD @ 120V(%):</b>	9%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	101
<b>Color Rendering Index (CRI):</b>	97
<b>Correlated Color Temperature (K):</b>	3416
<b>Chromaticity Coordinate x:</b>	0.4080
<b>Chromaticity Coordinate y:</b>	0.3877
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:50
<b>Total Operating Time (Hours):</b>	2:25

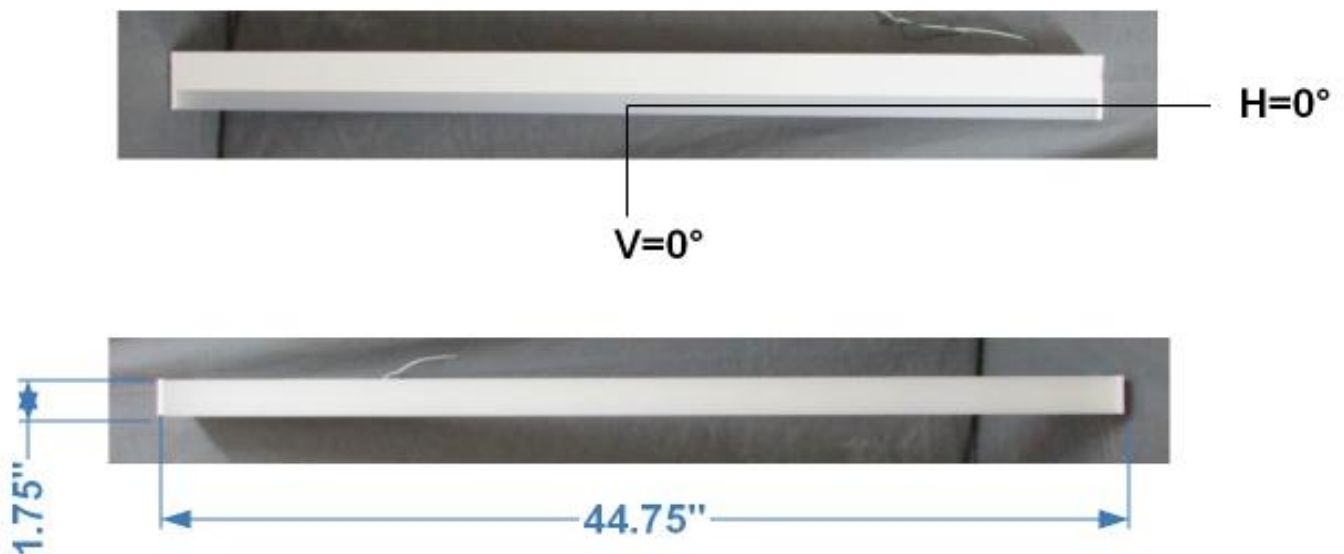
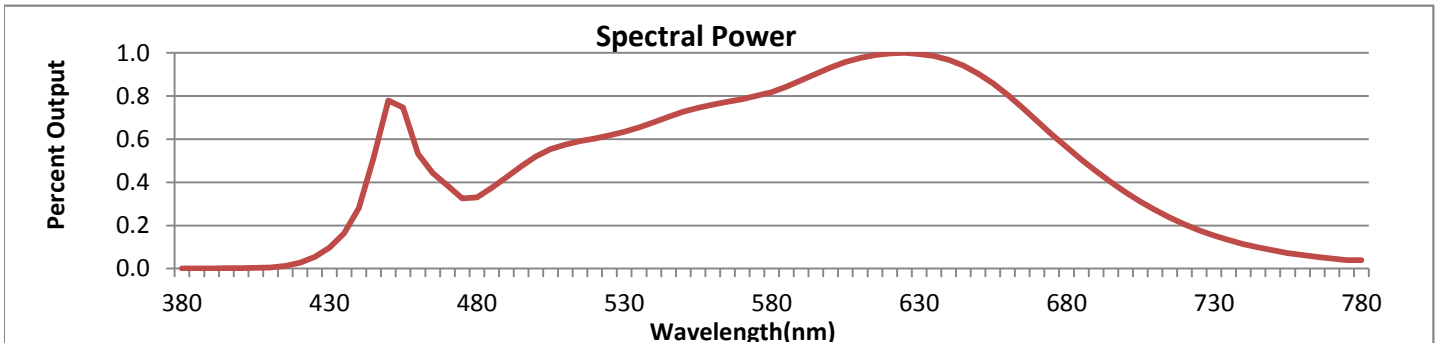


FIG. 1 LUMINAIRE



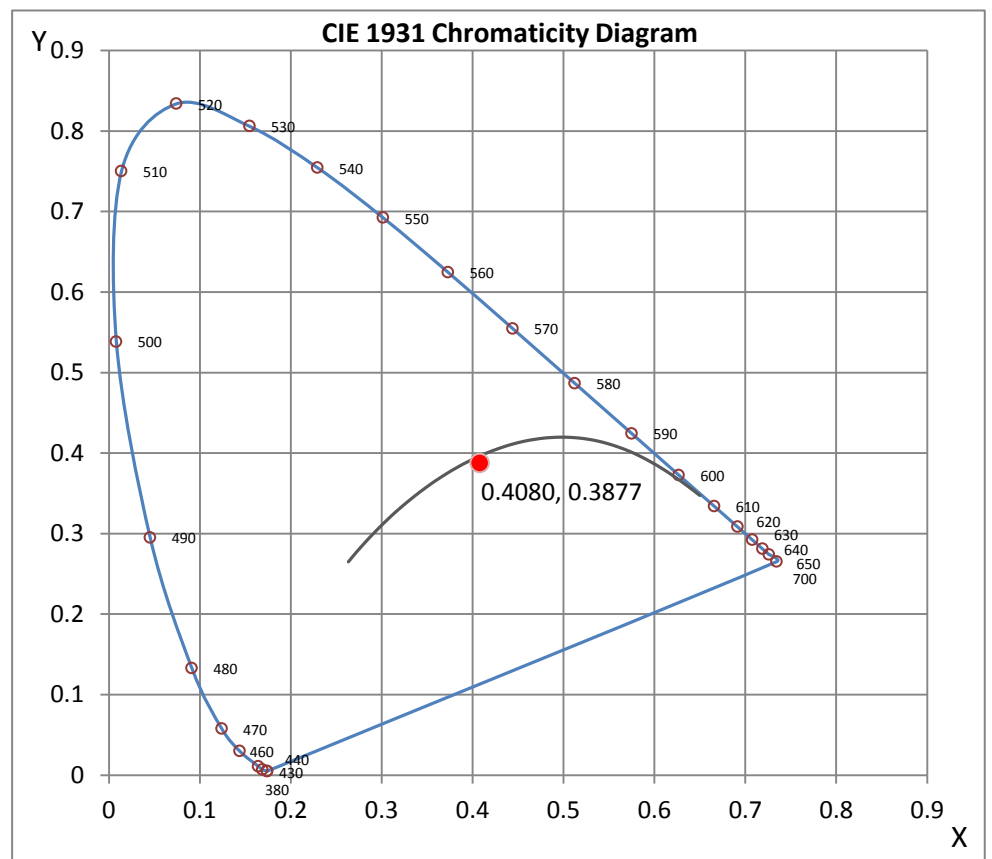
Wavelength	W/m <sup>2</sup> nm	440	0.2807	510	0.5749	580	0.8186	650	0.9046	720	0.2052
380	0.0010	450	0.7794	520	0.6032	590	0.8724	660	0.8059	730	0.1531
390	0.0011	460	0.5322	530	0.6348	600	0.9325	670	0.6840	740	0.1138
400	0.0018	470	0.3848	540	0.6789	610	0.9769	680	0.5639	750	0.0845
410	0.0056	480	0.3302	550	0.7270	620	0.9971	690	0.4510	760	0.0624
420	0.0270	490	0.4228	560	0.7606	630	0.9944	700	0.3534	770	0.0460
430	0.0976	500	0.5195	570	0.7861	640	0.9686	710	0.2715	780	0.0394

**CRI & CCT**

x	0.4080
y	0.3877
u'	0.2387
v'	0.5104
CRI	96.50
CCT	3416
Duv	-0.00191

**R Values**

R1	97.58
R2	99.08
R3	98.58
R4	97.01
R5	97.26
R6	96.60
R7	95.15
R8	90.94
R9	80.14
R10	97.04
R11	97.53
R12	82.39
R13	98.45
R14	98.77



\*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.

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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*



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# Photometric Test Report

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L091707001.IES**

## DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] L091707001  
 [TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
 [ISSUEDATE] 10/2/2017  
 [MANUFAC] Bartco Lighting  
 [LUMCAT] BSS205  
 [LUMINAIRE] Linear LED Fixture  
 [BALLASTCAT] PHILIPS ADVANCE XI040C110V054BST1  
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
 [INPUT] 120VAC, 29.12W  
 [TEST PROCEDURE] IESNA:LM-79-08

## CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2942
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	101
Total Luminaire Watts	29.12
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.24
Spacing Criterion (90-270)	1.14
Spacing Criterion (Diagonal)	1.32
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.15 ft
Luminous Width (90-270)	3.67 ft
Luminous Height	0.08 ft

## LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	10438	10455	12034
55	9487	9197	10271
65	8467	8109	8595
75	7396	7162	7071
85	6547	6520	5587

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>
<b>0</b>	866.70	866.70	866.70	866.70	866.70	866.70	866.70	866.70	866.70	866.70
<b>5</b>	867.65	867.57	867.53	867.36	867.07	866.82	866.32	865.91	865.33	864.74
<b>10</b>	857.52	857.48	857.27	857.02	856.77	856.32	855.61	854.90	853.99	853.12
<b>15</b>	833.19	833.07	832.94	832.69	832.28	831.78	831.03	830.16	829.08	827.88
<b>20</b>	797.73	797.57	797.40	796.99	796.41	795.70	794.79	793.62	792.25	790.84
<b>25</b>	755.47	755.39	754.93	754.26	753.27	752.06	750.61	748.87	747.00	744.80
<b>30</b>	710.63	710.38	709.59	708.34	706.64	704.44	702.03	699.21	696.14	692.94
<b>35</b>	665.95	665.62	664.34	662.22	659.39	655.99	652.17	647.77	642.95	638.22
<b>40</b>	622.36	621.74	619.74	616.84	612.81	607.79	602.22	595.79	589.10	582.17
<b>45</b>	579.35	578.52	576.15	572.33	567.02	560.58	553.02	544.85	536.09	526.99
<b>50</b>	535.92	535.01	532.22	527.82	521.55	514.00	505.49	495.36	484.69	473.52
<b>55</b>	490.75	489.79	486.93	482.24	475.59	467.33	457.62	446.28	434.03	421.41
<b>60</b>	442.67	441.88	439.18	434.45	427.93	419.67	409.70	397.87	384.75	371.17
<b>65</b>	392.68	391.85	389.40	385.21	379.19	371.30	361.75	350.00	337.00	323.10
<b>70</b>	342.11	341.45	339.33	335.93	330.61	323.55	314.67	303.67	290.88	277.09
<b>75</b>	293.04	292.41	290.88	287.89	283.49	277.22	269.29	259.12	247.16	233.91
<b>80</b>	248.86	248.40	247.03	244.63	240.81	235.45	228.43	219.26	208.13	195.63
<b>85</b>	207.26	206.93	205.77	203.69	200.49	195.84	189.61	181.31	171.18	159.60
<b>90</b>	170.23	169.98	168.86	167.03	164.04	159.85	154.12	146.64	137.47	126.76
<b>95</b>	153.12	152.75	151.92	150.34	147.76	144.15	139.17	132.65	124.64	115.21
<b>100</b>	140.91	140.58	139.75	138.30	135.93	132.65	128.13	122.23	115.05	106.50
<b>105</b>	130.78	130.62	129.70	128.25	125.97	122.77	118.54	113.10	106.45	98.69
<b>110</b>	122.06	121.82	120.98	119.45	117.21	114.09	110.02	104.88	98.65	91.42
<b>115</b>	114.09	113.76	112.85	111.31	109.03	105.96	102.09	97.19	91.34	84.57
<b>120</b>	106.04	105.79	104.88	103.42	101.14	98.19	94.37	89.68	84.20	77.97
<b>125</b>	98.15	97.78	96.90	95.41	93.21	90.34	86.73	82.33	77.10	71.20
<b>130</b>	89.76	89.51	88.56	87.19	85.03	82.33	78.93	74.82	69.92	64.60
<b>135</b>	81.21	80.88	80.01	78.64	76.68	74.11	71.00	67.22	62.65	56.71
<b>140</b>	72.24	71.95	71.20	69.88	68.05	65.77	62.90	58.50	53.35	48.29
<b>145</b>	63.03	62.78	62.07	60.95	59.33	57.25	53.27	48.91	44.67	40.52
<b>150</b>	53.73	53.52	52.94	51.90	50.49	47.00	43.47	40.07	36.74	33.84
<b>155</b>	44.43	44.22	43.76	42.89	40.07	37.12	34.54	32.01	30.14	28.19
<b>160</b>	35.13	34.96	34.59	32.55	30.18	28.23	26.74	25.78	24.41	22.34
<b>165</b>	26.32	26.20	24.95	23.00	21.63	20.84	20.22	19.31	17.73	16.40
<b>170</b>	17.52	17.23	15.11	14.03	13.66	13.49	13.16	12.58	11.96	11.21
<b>175</b>	8.80	7.56	7.47	7.72	7.89	7.85	7.76	7.47	7.14	6.81
<b>180</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

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>
<b>0</b>	866.70	866.70	866.70	866.70	866.70	866.70	866.70	866.70	866.70
<b>5</b>	864.08	863.42	862.75	862.13	861.63	861.22	860.88	860.76	860.84
<b>10</b>	851.83	850.55	849.13	847.47	845.77	844.28	842.82	842.16	842.08
<b>15</b>	826.34	824.72	822.77	820.61	818.16	815.42	812.76	810.65	810.36
<b>20</b>	788.93	786.86	784.45	781.87	778.80	775.23	771.33	768.05	767.09
<b>25</b>	742.31	739.65	736.66	733.26	729.35	725.12	720.34	715.57	713.87
<b>30</b>	689.41	685.68	681.69	677.33	672.64	667.45	661.64	655.45	652.83
<b>35</b>	632.86	627.67	622.19	616.42	610.44	603.80	596.95	589.56	585.82
<b>40</b>	574.99	567.76	560.50	552.90	545.26	537.12	528.94	520.60	515.41
<b>45</b>	517.57	508.14	499.05	489.46	479.99	470.36	460.81	451.26	445.08
<b>50</b>	461.81	450.31	439.10	427.60	416.30	405.01	394.05	383.51	376.07
<b>55</b>	407.96	394.63	381.51	368.27	355.65	342.82	330.90	319.44	310.97
<b>60</b>	356.56	341.86	327.62	312.88	298.77	284.86	271.90	259.49	250.11

**IES INDOOR REPORT  
PHOTOMETRIC FILENAME : L091707001.IES**

**CANDELA TABULATION - (Cont.)**

<b>65</b>	307.78	292.25	276.68	261.19	246.20	231.67	217.85	205.02	194.64
<b>70</b>	261.94	245.96	229.97	213.78	198.42	183.39	169.27	156.19	145.15
<b>75</b>	219.22	203.36	187.12	171.18	155.78	140.58	126.22	112.85	101.31
<b>80</b>	181.27	166.16	150.63	134.35	118.87	103.22	89.10	75.73	63.77
<b>85</b>	146.27	131.66	116.71	100.97	85.49	70.29	56.17	43.10	31.14
<b>90</b>	114.13	100.52	86.07	70.71	56.05	41.27	27.44	14.53	2.41
<b>95</b>	103.96	91.59	78.72	64.69	51.15	37.45	24.50	12.29	1.00
<b>100</b>	96.41	85.32	73.36	60.58	48.04	35.25	23.13	11.58	1.41
<b>105</b>	89.43	79.30	68.34	56.55	45.01	33.13	21.76	10.92	1.41
<b>110</b>	82.91	73.57	63.52	52.60	41.93	31.01	20.39	10.17	1.50
<b>115</b>	76.68	68.05	58.83	48.83	38.99	28.81	18.97	9.30	1.66
<b>120</b>	70.58	62.57	54.18	45.01	36.00	26.70	17.56	8.43	1.74
<b>125</b>	64.52	57.21	49.61	41.27	32.92	24.00	15.86	7.10	1.99
<b>130</b>	58.42	51.15	43.89	36.25	28.77	21.22	13.62	6.10	2.24
<b>135</b>	50.40	44.13	37.87	31.39	24.99	18.52	11.92	5.36	2.49
<b>140</b>	43.06	37.78	32.51	26.78	21.55	15.78	10.05	4.82	2.74
<b>145</b>	36.20	32.09	27.36	22.92	18.23	13.37	8.55	4.53	2.91
<b>150</b>	30.64	27.03	23.00	19.02	15.11	11.09	7.39	4.28	3.24
<b>155</b>	25.37	22.21	18.93	15.86	12.62	9.55	6.56	4.32	3.49
<b>160</b>	19.89	17.60	15.28	12.75	10.42	8.14	5.73	4.40	3.74
<b>165</b>	14.78	13.20	11.58	10.05	8.35	6.56	5.15	4.36	3.90
<b>170</b>	10.38	9.51	8.51	7.43	6.31	5.40	4.78	4.32	3.99
<b>175</b>	6.39	6.02	5.61	5.27	4.98	4.73	4.44	4.24	4.15
<b>180</b>	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L091707001.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	314.44	N.A.	10.70
0-30	655.72	N.A.	22.30
0-40	1052.81	N.A.	35.80
0-60	1828.28	N.A.	62.20
0-80	2371.92	N.A.	80.60
0-90	2529.5	N.A.	86.00
10-90	2447.43	N.A.	83.20
20-40	738.37	N.A.	25.10
20-50	1142.27	N.A.	38.80
40-70	1085.56	N.A.	36.90
60-80	543.65	N.A.	18.50
70-80	233.55	N.A.	7.90
80-90	157.58	N.A.	5.40
90-110	200.95	N.A.	6.80
90-120	274.63	N.A.	9.30
90-130	331.13	N.A.	11.30
90-150	394.64	N.A.	13.40
90-180	412.16	N.A.	14.00
110-180	211.20	N.A.	7.20
0-180	2941.66	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	82.08
10-20	232.36
20-30	341.28
30-40	397.09
40-50	403.90
50-60	371.56
60-70	310.09
70-80	233.55
80-90	157.58
90-100	109.97
100-110	90.98
110-120	73.67
120-130	56.50
130-140	39.42
140-150	24.10
150-160	12.30
160-170	4.54
170-180	0.68



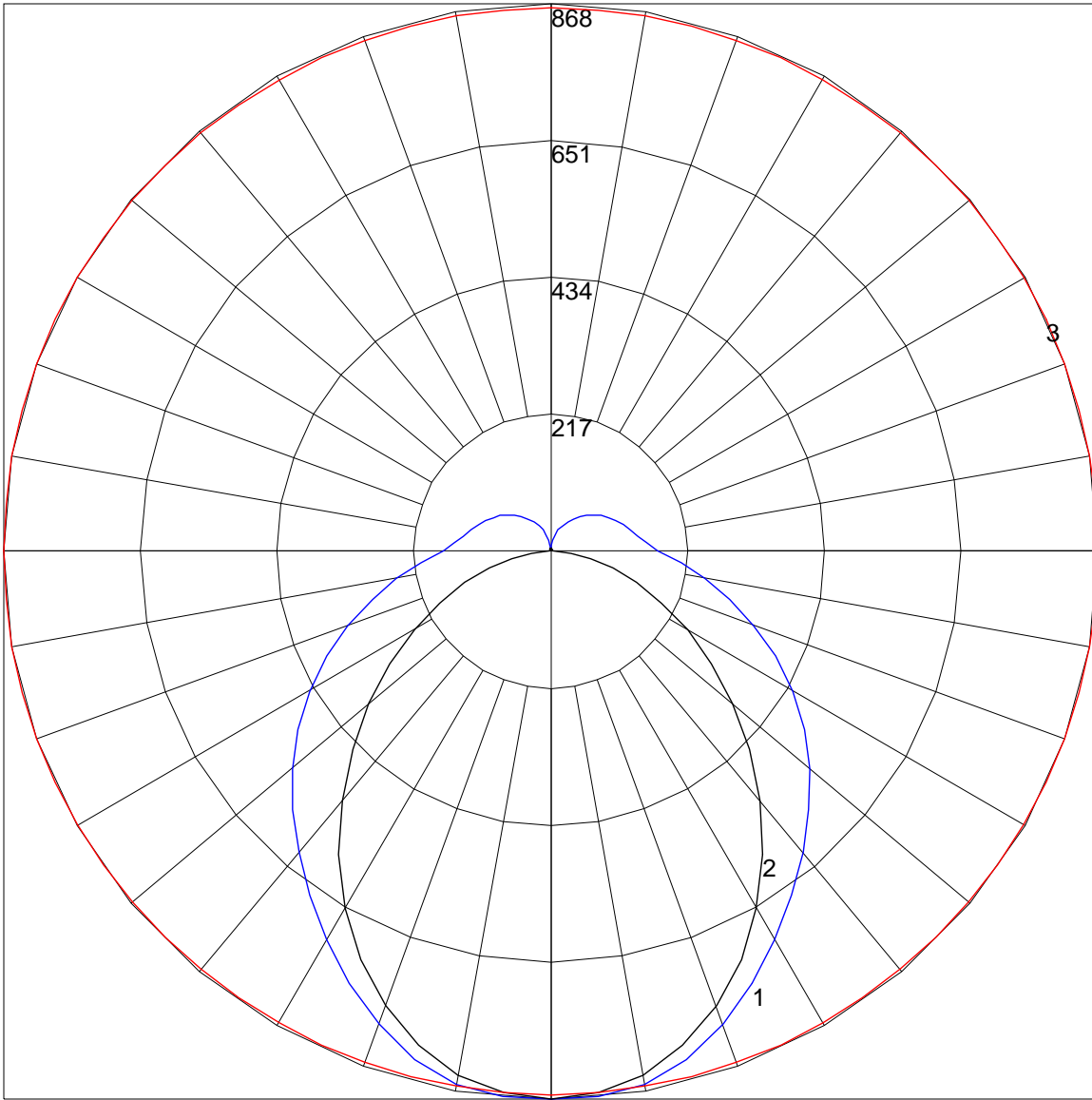
**IES INDOOR REPORT**  
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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		10
0	116	116	116	116	116	111	111	111	111	103	103	103	96	96	96	89	89	89	86
1	104	98	94	89	89	100	95	90	86	88	84	81	82	79	76	76	74	71	68
2	94	85	78	72	72	90	82	75	70	76	71	66	71	66	62	66	62	59	56
3	85	74	66	59	59	82	72	64	58	67	60	55	62	57	52	58	53	50	47
4	78	66	57	50	50	75	64	55	49	59	52	47	55	49	45	52	47	42	40
5	72	59	50	43	43	69	57	48	42	53	46	40	50	43	39	46	41	37	34
6	66	53	44	37	37	63	51	43	37	48	41	35	45	39	34	42	37	32	30
7	61	48	39	33	33	59	46	38	32	44	36	31	41	35	30	38	33	29	27
8	57	44	35	29	29	55	42	34	29	40	33	28	38	31	27	35	30	26	24
9	53	40	32	26	26	51	39	31	26	37	30	25	35	29	24	33	27	23	21
10	50	37	29	24	24	48	36	28	23	34	27	23	32	26	22	30	25	21	19

POLAR GRAPH



Maximum Candela = 867.65 Located At Horizontal Angle = 0, Vertical Angle = 5

# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

# 2 - Vertical Plane Through Horizontal Angles (90 - 270)

# 3 - Horizontal Cone Through Vertical Angle (5) (Through Max. Cd.)