



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

Report No: L111700906R01



**Report No:** L111700906R01 **Issue Date:** 11/17/2017

**Report Prepared For:** Number Eight Lighting Company  
526 Portal Street, Cotati, CA 94931

**Model Number:** 804/J2-HI-40/EL1-8-1400/FR-P-1-WH/WW8

**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 no special conditions.

**Sample Arrival Date:** 11/8/17

**Date of Tests:** 11/10/17 - 11/17/17

**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>	Number Eight Lighting Company
<b>Model Number:</b>	804/J2-HI-40/EL1-8-1400/FR-P-1-WH/WW8
<b>Driver Model Number:</b>	eldoLED ECOdrive 261/S
<b>Total Lumens:</b>	641.69
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	0.18
<b>Input Power (W):</b>	20.98
<b>Input Power Factor:</b>	0.99
<b>Current ATHD @ 120V(%):</b>	10%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	31
<b>Color Rendering Index (CRI):</b>	92
<b>Correlated Color Temperature (K):</b>	2916
<b>Chromaticity Coordinate x:</b>	0.4437
<b>Chromaticity Coordinate y:</b>	0.4073
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	1:00
<b>Total Operating Time (Hours):</b>	1:30

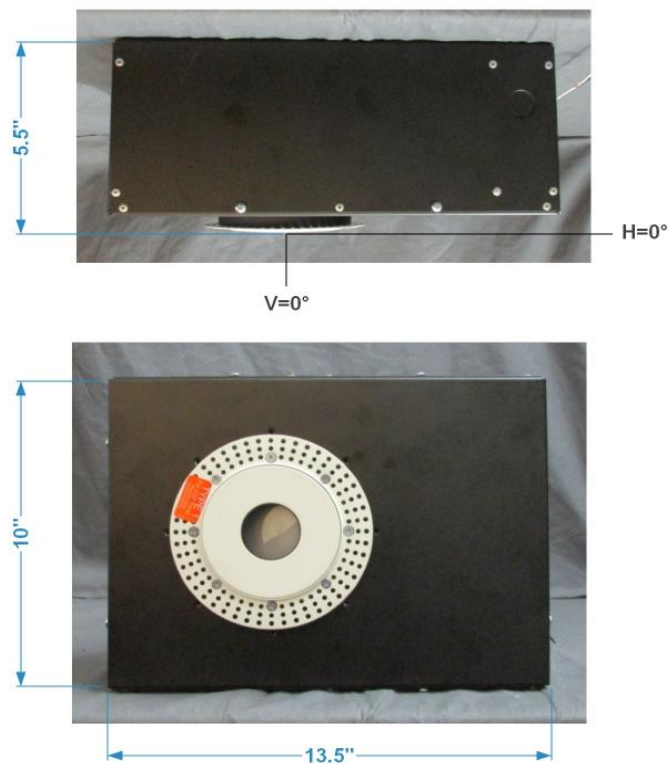
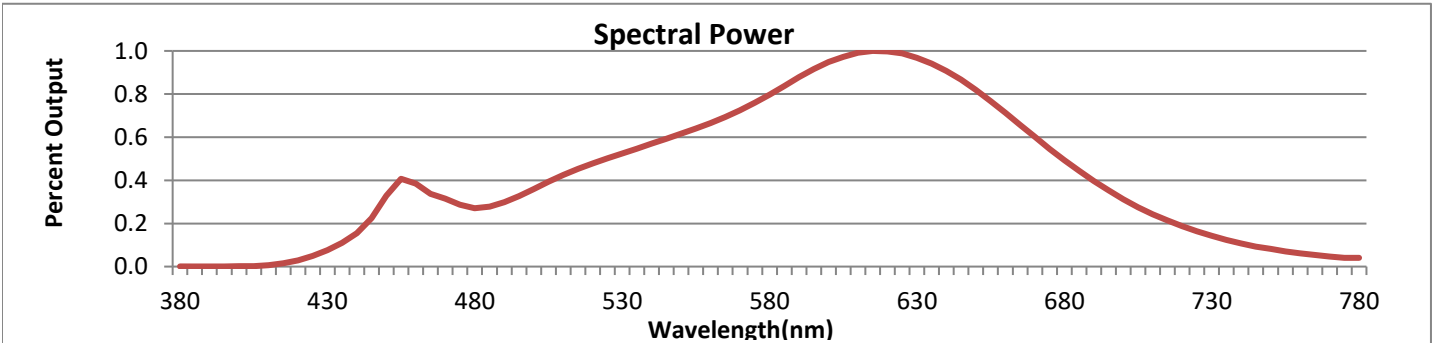


FIG. 1 LUMINAIRE

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



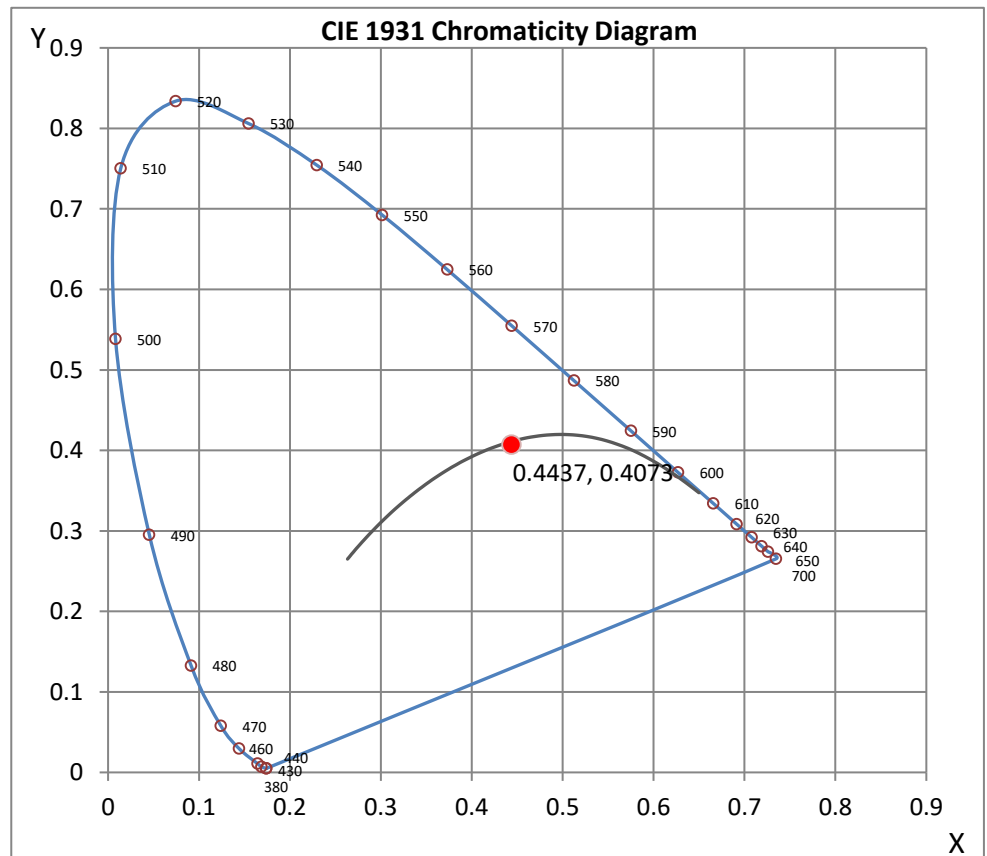
Wavelength	W/m <sup>2</sup> nm	440	0.1552	510	0.4253	580	0.7978	650	0.8190	720	0.1878
380	0.0008	450	0.3280	520	0.4782	590	0.8784	660	0.7135	730	0.1431
390	0.0009	460	0.3853	530	0.5249	600	0.9483	670	0.6008	740	0.1074
400	0.0014	470	0.3149	540	0.5699	610	0.9918	680	0.4935	750	0.0816
410	0.0065	480	0.2703	550	0.6164	620	0.9981	690	0.3971	760	0.0616
420	0.0292	490	0.2987	560	0.6650	630	0.9682	700	0.3126	770	0.0463
430	0.0761	500	0.3596	570	0.7249	640	0.9077	710	0.2420	780	0.0401

**CRI & CCT**

x	0.4437
y	0.4073
u'	0.2535
v'	0.5237
CRI	91.90
CCT	2916
Duv	0.00040

**R Values**

R1	92.10
R2	97.19
R3	98.13
R4	91.07
R5	91.97
R6	96.79
R7	90.00
R8	78.34
R9	53.20
R10	92.60
R11	91.99
R12	83.73
R13	93.62
R14	99.82



\*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 :                     Joseph Shin                    

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 : L111700906R01.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
[TEST] L111700906R01  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUE DATE] 11/17/2017  
[MANUFAC] Number Eight Lighting Company  
[LUMCAT] 804/J2-HI-40/EL1-8-1400/FR-P-1-WH/WW8  
[LUMINAIRE] LED Recessed Downlight, 90+ CRI, 40° Beam Spread, 20° Aiming Angle,  
[MORE] 1.75" Dia. Aperture Trim, Wall Wash Lens Accessory  
[BALLASTCAT] eldoLED ECOdrive 261/S  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[INPUT] 120VAC, 20.98W  
[TEST PROCEDURE] IESNA:LM-79-08

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	642
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	31
Total Luminaire Watts	20.98
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.58
Spacing Criterion (90-270)	1.20
Spacing Criterion (Diagonal)	1.22
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.15 ft (Diameter)
Luminous Width (90-270)	0.15 ft (Diameter)
Luminous Height	0.00 ft

**LUMINANCE DATA (cd/sq.m)**

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	18933	39158	149316
55	4456	13899	89970
65	2304	2880	29951
75	3527	3527	4938
85	8379	9077	9775

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L111700906R01.IES**

**CANDELA TABULATION**

	<b>0</b>	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>	<b>40</b>	<b>45</b>
<b>0</b>	349.7	349.7	349.7	349.7	349.7	349.7	349.7	349.7	349.7	349.7
<b>5</b>	304.4	304.6	305.1	305.9	307.1	308.7	310.4	312.6	315.3	318.0
<b>10</b>	255.7	256.0	257.0	258.8	261.1	264.1	267.7	271.9	276.9	282.6
<b>15</b>	206.8	207.4	208.8	211.3	214.5	218.6	223.9	229.7	236.9	245.0
<b>20</b>	160.8	161.3	163.1	165.7	169.4	174.5	180.4	187.8	196.6	206.5
<b>25</b>	118.4	118.9	120.5	123.3	127.3	132.0	138.5	146.2	155.5	166.4
<b>30</b>	84.0	84.5	86.0	88.4	92.0	96.7	102.4	109.9	119.7	130.2
<b>35</b>	56.5	56.9	58.2	60.1	63.0	67.1	72.1	78.2	86.1	96.1
<b>40</b>	36.8	37.1	38.0	39.6	41.8	44.8	49.0	54.1	60.6	68.3
<b>45</b>	22.0	22.3	22.9	23.9	25.6	27.8	30.5	34.3	39.5	45.5
<b>50</b>	10.8	10.9	11.3	12.0	13.1	14.6	16.5	19.6	23.5	27.2
<b>55</b>	4.2	4.3	4.5	4.8	5.3	6.1	7.1	8.6	10.7	13.1
<b>60</b>	1.9	1.9	1.9	2.0	2.1	2.3	2.7	3.2	4.0	5.2
<b>65</b>	1.6	1.6	1.6	1.6	1.6	1.6	1.6	1.7	1.8	2.0
<b>70</b>	1.5	1.5	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.6
<b>75</b>	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5	1.5
<b>80</b>	1.3	1.3	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4
<b>85</b>	1.2	1.2	1.2	1.2	1.2	1.2	1.2	1.3	1.3	1.3
<b>90</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Vert. Angles**      **Horizontal Angles**

	<b>50</b>	<b>55</b>	<b>60</b>	<b>65</b>	<b>70</b>	<b>75</b>	<b>80</b>	<b>85</b>	<b>90</b>	<b>95</b>
<b>0</b>	349.7	349.7	349.7	349.7	349.7	349.7	349.7	349.7	349.7	349.7
<b>5</b>	320.7	324.0	327.3	330.5	334.0	337.6	341.1	344.6	348.4	352.1
<b>10</b>	288.4	294.6	301.1	308.0	314.9	322.0	329.2	336.3	343.6	350.9
<b>15</b>	253.9	262.7	272.1	282.6	292.8	303.2	314.5	325.3	336.0	346.2
<b>20</b>	216.7	228.5	241.2	253.9	268.2	281.8	295.7	310.5	324.4	337.7
<b>25</b>	178.7	191.4	206.1	221.8	237.0	254.5	272.3	288.6	306.7	324.1
<b>30</b>	141.2	155.1	170.4	186.9	204.8	223.4	243.0	263.1	283.2	302.5
<b>35</b>	107.1	119.5	133.9	150.3	169.2	188.3	208.3	230.6	252.1	272.7
<b>40</b>	78.0	88.7	101.2	116.7	133.1	151.2	172.3	192.9	214.5	237.2
<b>45</b>	52.2	61.2	71.9	83.6	98.5	115.2	132.2	152.2	173.5	193.4
<b>50</b>	32.3	38.5	46.4	55.3	62.1	77.3	95.4	111.4	129.6	147.9
<b>55</b>	16.1	21.2	27.0	31.7	39.6	48.8	55.8	69.3	84.8	98.3
<b>60</b>	6.8	8.8	11.6	15.2	19.3	25.7	32.9	39.0	48.1	57.6
<b>65</b>	2.4	3.1	4.0	5.5	7.5	9.8	13.0	16.6	20.8	25.7
<b>70</b>	1.7	1.7	1.8	1.9	2.3	2.9	3.6	4.8	6.2	7.8
<b>75</b>	1.6	1.6	1.6	1.6	1.7	1.7	1.8	1.9	2.1	2.3
<b>80</b>	1.4	1.4	1.5	1.5	1.5	1.5	1.6	1.6	1.6	1.7
<b>85</b>	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.3	1.4	1.4
<b>90</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Vert. Angles**      **Horizontal Angles**

	<b>100</b>	<b>105</b>	<b>110</b>	<b>115</b>	<b>120</b>	<b>125</b>	<b>130</b>	<b>135</b>	<b>140</b>	<b>145</b>
<b>0</b>	349.7	349.7	349.7	349.7	349.7	349.7	349.7	349.7	349.7	349.7
<b>5</b>	355.7	358.6	362.0	365.2	368.0	370.9	373.3	375.4	377.7	379.6
<b>10</b>	357.5	364.1	370.2	376.1	381.5	386.3	391.0	394.8	398.2	401.4
<b>15</b>	356.2	366.0	374.5	382.4	390.3	397.1	402.4	407.5	412.0	415.5
<b>20</b>	351.2	363.0	374.0	384.6	393.6	401.8	408.5	414.1	418.8	422.6
<b>25</b>	338.9	354.0	367.9	379.6	390.4	399.1	406.3	412.0	416.6	419.8
<b>30</b>	320.8	337.6	353.2	367.0	377.9	387.4	394.6	400.1	403.8	406.3
<b>35</b>	293.5	311.9	328.1	341.9	353.6	363.2	370.3	375.0	378.1	379.9

**IES INDOOR REPORT  
PHOTOMETRIC FILENAME : L111700906R01.IES**

**CANDELA TABULATION - (Cont.)**

<b>40</b>	257.8	277.4	293.5	307.1	319.4	328.3	334.0	338.0	340.4	341.2
<b>45</b>	213.8	231.4	247.6	261.2	271.4	279.4	284.5	287.4	288.3	288.1
<b>50</b>	164.0	180.4	195.0	206.5	215.7	222.4	226.6	228.3	228.5	227.4
<b>55</b>	112.0	124.8	136.2	145.9	153.6	158.9	161.8	163.1	163.0	161.9
<b>60</b>	66.4	76.0	84.8	92.0	97.8	102.1	104.6	105.7	105.9	105.3
<b>65</b>	30.9	36.0	41.1	45.8	50.0	53.0	54.9	56.1	56.7	56.8
<b>70</b>	9.6	11.5	13.3	15.1	16.8	18.1	19.1	19.9	20.3	20.6
<b>75</b>	2.5	2.9	3.2	3.5	3.8	4.1	4.4	4.5	4.7	4.8
<b>80</b>	1.7	1.7	1.8	1.8	1.9	1.9	2.0	2.0	2.1	2.1
<b>85</b>	1.4	1.4	1.4	1.4	1.5	1.5	1.5	1.5	1.5	1.5
<b>90</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**Vert. Horizontal Angles**

	<u>150</u>	<u>155</u>	<u>160</u>	<u>165</u>	<u>170</u>	<u>175</u>	<u>180</u>
<b>0</b>	349.7	349.7	349.7	349.7	349.7	349.7	349.7
<b>5</b>	381.2	382.9	384.2	385.0	385.5	385.9	385.9
<b>10</b>	404.0	406.3	408.2	409.7	410.9	411.5	411.6
<b>15</b>	418.7	421.3	423.3	424.7	425.8	426.3	426.5
<b>20</b>	425.2	427.5	429.3	430.4	431.0	431.5	431.6
<b>25</b>	422.1	423.6	424.6	425.1	425.3	425.5	425.6
<b>30</b>	407.9	408.6	408.7	408.6	408.3	408.2	408.1
<b>35</b>	380.5	380.4	379.9	379.1	378.5	378.1	377.9
<b>40</b>	341.0	340.2	339.1	337.9	336.9	336.2	336.0
<b>45</b>	287.2	285.5	283.5	281.9	280.7	279.8	279.5
<b>50</b>	225.6	223.6	221.4	219.1	217.5	216.6	216.3
<b>55</b>	160.1	158.1	156.0	154.2	152.7	151.9	151.6
<b>60</b>	104.2	103.0	101.7	100.3	99.4	98.8	98.6
<b>65</b>	56.5	56.0	55.5	54.9	54.5	54.2	54.2
<b>70</b>	20.7	20.7	20.7	20.6	20.6	20.5	20.5
<b>75</b>	4.9	5.0	5.1	5.2	5.2	5.2	5.2
<b>80</b>	2.2	2.2	2.3	2.3	2.3	2.4	2.4
<b>85</b>	1.5	1.5	1.5	1.6	1.6	1.6	1.6
<b>90</b>	0.0	0.0	0.0	0.0	0.0	0.0	0.0

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L111700906R01.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	124.74	N.A.	19.40
0-30	257.71	N.A.	40.20
0-40	404.20	N.A.	63.00
0-60	607.46	N.A.	94.70
0-80	640.46	N.A.	99.80
0-90	641.69	N.A.	100.00
10-90	608.84	N.A.	94.90
20-40	279.46	N.A.	43.60
20-50	405.56	N.A.	63.20
40-70	231.75	N.A.	36.10
60-80	33.01	N.A.	5.10
70-80	4.51	N.A.	0.70
80-90	1.22	N.A.	0.20
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	641.69	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	32.85
10-20	91.90
20-30	132.97
30-40	146.49
40-50	126.10
50-60	77.16
60-70	28.49
70-80	4.51
80-90	1.22
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00



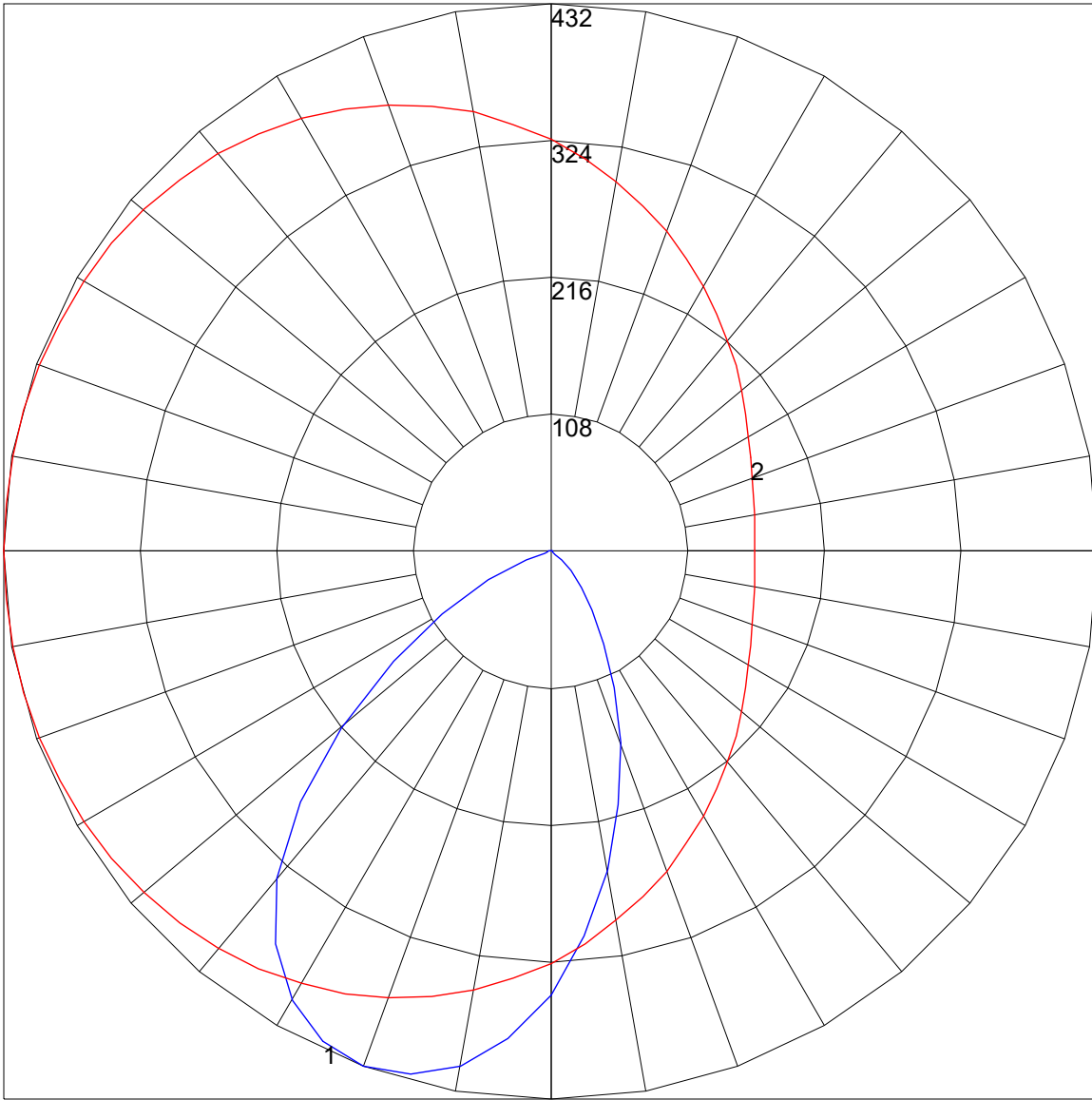
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L111700906R01.IES**

**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	10	0
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	112	108	105	102	109	106	103	100	102	99	97	98	96	94	94	93	91	90
2	104	97	92	87	101	95	91	86	92	88	85	89	86	83	86	83	81	79
3	96	88	81	76	94	86	80	75	83	78	74	81	76	73	78	75	72	70
4	89	79	72	66	87	78	71	66	76	70	65	74	68	64	72	67	64	62
5	83	72	64	59	81	71	64	59	69	63	58	67	62	57	65	61	57	55
6	77	66	58	52	76	65	58	52	63	57	52	62	56	51	60	55	51	49
7	72	60	53	47	71	59	52	47	58	51	47	57	51	46	55	50	46	44
8	67	55	48	43	66	55	48	43	54	47	42	52	46	42	51	46	42	40
9	63	51	44	39	62	51	44	39	50	43	39	49	43	38	48	42	38	37
10	60	48	40	36	58	47	40	36	46	40	35	45	39	35	44	39	35	34

POLAR GRAPH



Maximum Candela = 431.6 Located At Horizontal Angle = 180, Vertical Angle = 20  
# 1 - Vertical Plane Through Horizontal Angles (180 - 0) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (20) (Through Max. Cd.)