



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

Report No: L121706465



**Report No:** L121706465

**Issue Date:** 1/22/2018

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

**Model Number:** 804/M2-R-HI-40/WH/DIM1-8-1400 with FR-P-1-WH trim

**Test:** Photometric/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:** 1/2/18

**Date of Tests:** 1/18/18 - 1/22/18

**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-S4	1/9/19
BK PRECISION	1747	PS-DC04	1/10/19
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/19
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/M2-R-HI-40/WH/DIM1-8-1400 with FR-P-1-WH trim
<b>Driver Model Number:</b>	IntuitiveSystems ISD-701-1400-20-D
<b>Total Lumens:</b>	801.74
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	0.18
<b>Input Power (W):</b>	20.73
<b>Input Power Factor:</b>	0.99
<b>Current ATHD @ 120V(%):</b>	6%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	39
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:40
<b>Total Operating Time (Hours):</b>	1:20

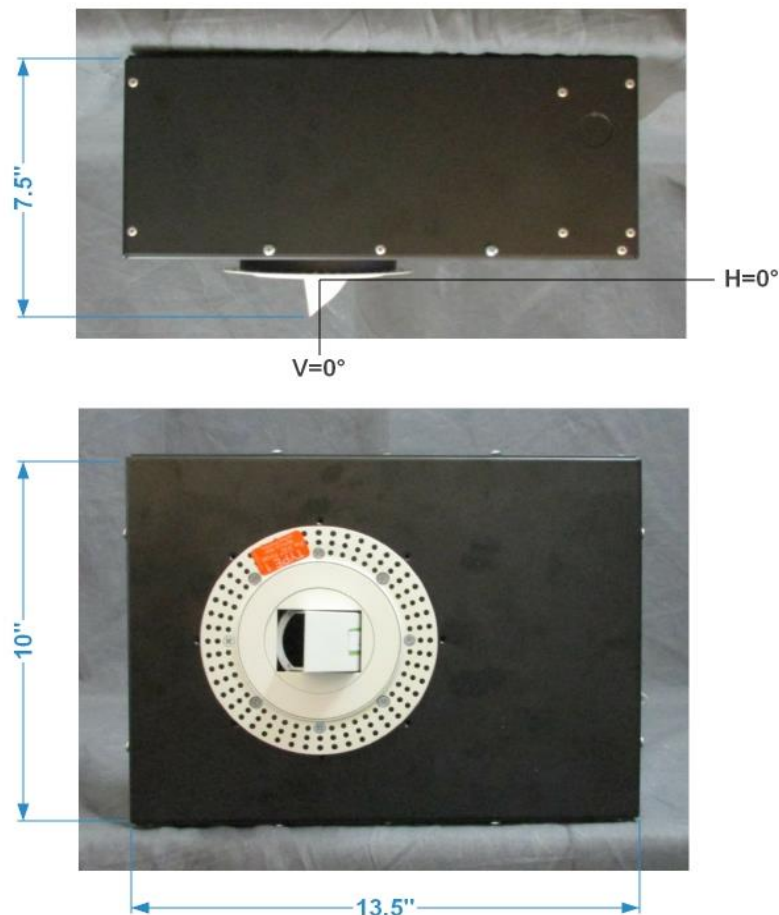


FIG. 1 LUMINAIRE

\*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 : L121706465.IES**

**DESCRIPTION INFORMATION (From Photometric File)**

IESNA:LM-63-2002  
[TEST] L121706465  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 1/22/2018  
[MANUFAC] Number Eight Lighting Company  
[LUMCAT] 804/M2-R-HI-40/WH/DIM1-8-1400 with FR-P-1-WH trim  
[LUMINAIRE] LED Recessed Downlight, 40° Beam Spread, 45° Aiming Angle,  
[MORE] Mirror Lens Accessory  
[BALLASTCAT] IntuitiveSystems ISD-701-1400-20-D  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[INPUT] 120VAC, 20.73W  
[TEST PROCEDURE] IESNA:LM-79-08

**CHARACTERISTICS**

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	802
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	39
Total Luminaire Watts	20.73
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.58
Spacing Criterion (90-270)	0.94
Spacing Criterion (Diagonal)	1.64
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.06 ft
Luminous Width (90-270)	0.15 ft
Luminous Height	0.00 ft

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	0	13518	32106
55	0	11458	30206
65	0	11309	28273
75	0	18466	27700
85	0	0	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	56	56	56	56	56	56	56	56	56	56
5.0	55	55	55	55	55	55	55	54	54	54
10.0	65	65	65	65	64	63	62	60	59	58
15.0	36	36	37	40	42	46	50	55	58	60
20.0	17	17	17	17	18	19	21	24	30	37
22.5	14	14	14	14	15	16	17	18	20	25
25.0	11	11	11	12	13	14	15	16	17	19
27.5	9	9	10	10	11	11	13	14	15	16
30.0	8	8	8	9	9	10	11	12	13	15
32.0	8	8	8	8	8	9	10	11	12	13
34.0	8	8	8	8	8	8	9	10	11	12
36.0	4	4	5	6	8	8	8	9	10	11
38.0	0	0	0	3	4	6	8	9	9	10
40.0	0	0	0	0	4	4	6	8	9	10
41.0	0	0	0	0	4	4	5	7	9	9
42.0	0	0	0	0	3	4	5	6	8	9
43.0	0	0	0	0	3	4	5	5	7	9
44.0	0	0	0	0	0	4	5	5	6	9
45.0	0	0	0	0	0	4	4	5	6	8
46.0	0	0	0	0	0	3	4	5	6	7
47.0	0	0	0	0	0	3	4	5	6	7
48.0	0	0	0	0	0	3	4	5	5	7
49.0	0	0	0	0	0	0	4	5	5	6
50.0	0	0	0	0	0	0	4	4	5	6
52.0	0	0	0	0	0	0	3	4	5	6
54.0	0	0	0	0	0	0	3	4	5	6
56.0	0	0	0	0	0	0	0	4	4	5
58.0	0	0	0	0	0	0	0	4	4	5
60.0	0	0	0	0	0	0	0	3	4	5
62.5	0	0	0	0	0	0	0	3	4	4
65.0	0	0	0	0	0	0	0	3	4	4
67.5	0	0	0	0	0	0	0	0	4	4
70.0	0	0	0	0	0	0	0	0	4	4
75.0	0	0	0	0	0	0	0	0	4	4
80.0	0	0	0	0	0	0	0	0	0	0
85.0	0	0	0	0	0	0	0	0	0	0
90.0	4	4	4	4	4	3	3	2	2	1

Vert. Horizontal Angles  
 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	56	56	56	56	56	56	56	56	56	56
5.0	54	53	53	53	54	54	55	56	57	58
10.0	57	56	55	54	53	52	52	53	55	57
15.0	59	56	54	52	51	49	48	48	50	52
20.0	43	49	49	48	46	45	44	44	45	45
22.5	33	39	44	44	43	42	41	41	41	42
25.0	23	31	37	39	39	38	37	37	38	38
27.5	18	24	30	34	34	34	34	34	34	35
30.0	16	19	24	28	30	29	30	30	31	32
32.0	15	17	21	24	26	26	26	27	28	29
34.0	14	15	18	21	23	23	23	24	26	27
36.0	12	14	16	18	20	20	21	22	24	26
38.0	11	13	14	16	17	18	19	20	22	24

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121706465.IES**

**CANDELA TABULATION - (Cont.)**

<b>40.0</b>	11	12	13	14	15	16	17	19	21	23
<b>41.0</b>	10	11	12	14	15	15	16	18	20	23
<b>42.0</b>	10	11	12	13	14	14	15	17	20	23
<b>43.0</b>	10	11	11	13	13	14	15	17	19	23
<b>44.0</b>	10	10	11	12	13	13	14	16	19	22
<b>45.0</b>	9	10	11	12	12	13	13	16	19	22
<b>46.0</b>	9	10	10	11	12	12	13	15	18	22
<b>47.0</b>	9	9	10	11	11	12	12	15	18	21
<b>48.0</b>	8	9	10	10	11	11	12	14	17	21
<b>49.0</b>	7	9	9	10	10	11	11	14	17	21
<b>50.0</b>	7	8	9	10	10	10	11	13	17	21
<b>52.0</b>	7	8	9	9	9	10	10	13	16	20
<b>54.0</b>	6	7	8	8	9	9	10	12	15	19
<b>56.0</b>	6	7	8	8	8	8	9	11	14	19
<b>58.0</b>	6	6	7	8	8	8	8	10	14	18
<b>60.0</b>	5	6	7	7	7	7	8	9	13	17
<b>62.5</b>	5	6	6	7	7	7	7	8	12	16
<b>65.0</b>	5	5	6	6	6	6	6	7	10	15
<b>67.5</b>	5	5	6	6	6	5	5	6	9	14
<b>70.0</b>	4	5	5	5	5	5	5	5	8	12
<b>75.0</b>	4	4	5	5	5	4	4	3	6	10
<b>80.0</b>	0	0	0	0	0	0	3	3	4	8
<b>85.0</b>	0	0	0	0	0	0	0	0	0	6
<b>90.0</b>	1	1	0	0	0	0	0	0	0	3

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

	<u>100</u>	<u>105</u>	<u>110</u>	<u>115</u>	<u>120</u>	<u>125</u>	<u>130</u>	<u>135</u>	<u>140</u>	<u>145</u>
<b>0.0</b>	56	56	56	56	56	56	56	56	56	56
<b>5.0</b>	59	60	61	61	61	61	61	61	61	60
<b>10.0</b>	58	59	59	58	56	53	51	49	47	45
<b>15.0</b>	53	53	51	48	45	43	40	38	37	36
<b>20.0</b>	45	44	42	40	38	36	35	39	53	80
<b>22.5</b>	41	40	39	37	36	35	39	55	88	138
<b>25.0</b>	38	37	37	36	35	36	46	76	129	204
<b>27.5</b>	35	35	35	35	35	39	57	99	168	257
<b>30.0</b>	32	33	34	35	36	40	65	122	206	309
<b>32.0</b>	31	32	34	35	37	43	68	127	220	337
<b>34.0</b>	29	31	33	36	38	44	69	140	247	369
<b>36.0</b>	28	31	33	36	39	43	70	144	261	408
<b>38.0</b>	27	30	33	36	40	44	65	134	260	424
<b>40.0</b>	27	30	33	37	41	45	63	136	272	438
<b>41.0</b>	26	30	34	37	41	45	63	133	271	454
<b>42.0</b>	26	30	34	38	42	46	60	126	255	457
<b>43.0</b>	26	30	34	38	42	46	61	126	265	444
<b>44.0</b>	26	30	34	39	43	48	58	114	246	438
<b>45.0</b>	26	30	34	39	44	49	59	115	239	430
<b>46.0</b>	26	30	34	39	44	49	59	111	241	421
<b>47.0</b>	25	30	35	40	45	50	57	102	216	403
<b>48.0</b>	25	30	35	40	45	51	58	99	216	390
<b>49.0</b>	25	30	35	40	46	51	58	96	206	388
<b>50.0</b>	25	30	35	40	46	52	57	88	192	357
<b>52.0</b>	25	30	35	40	46	52	57	81	170	321
<b>54.0</b>	24	29	35	40	46	52	56	75	150	295
<b>56.0</b>	23	29	34	40	46	52	56	67	124	244
<b>58.0</b>	23	28	34	40	46	51	56	63	105	206

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121706465.IES**

**CANDELA TABULATION - (Cont.)**

<b>60.0</b>	22	28	34	39	45	50	55	60	90	177
<b>62.5</b>	21	27	33	38	43	49	54	57	72	130
<b>65.0</b>	20	26	31	36	42	47	52	55	61	98
<b>67.5</b>	19	24	30	35	40	46	51	53	54	71
<b>70.0</b>	17	23	29	34	39	44	49	51	51	55
<b>75.0</b>	15	20	26	30	35	40	44	46	46	46
<b>80.0</b>	12	17	23	27	31	35	40	41	41	41
<b>85.0</b>	10	15	19	23	27	30	35	36	36	36
<b>90.0</b>	7	11	15	18	22	25	28	30	30	30

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

	<u><b>150</b></u>	<u><b>155</b></u>	<u><b>160</b></u>	<u><b>165</b></u>	<u><b>170</b></u>	<u><b>175</b></u>	<u><b>180</b></u>
<b>0.0</b>	56	56	56	56	56	56	56
<b>5.0</b>	60	59	59	59	58	58	58
<b>10.0</b>	44	42	42	41	40	40	40
<b>15.0</b>	35	37	42	48	53	56	57
<b>20.0</b>	117	157	198	236	266	283	291
<b>22.5</b>	200	263	326	378	419	441	450
<b>25.0</b>	286	364	438	512	566	598	610
<b>27.5</b>	347	441	539	647	723	772	787
<b>30.0</b>	415	533	661	797	903	975	996
<b>32.0</b>	468	607	765	959	1120	1234	1272
<b>34.0</b>	508	681	884	1150	1340	1462	1498
<b>36.0</b>	565	764	1006	1307	1541	1697	1744
<b>38.0</b>	605	829	1113	1454	1742	1931	1987
<b>40.0</b>	621	856	1179	1596	1896	2087	2140
<b>41.0</b>	647	896	1230	1627	1932	2133	2192
<b>42.0</b>	655	907	1243	1626	1949	2167	2231
<b>43.0</b>	639	883	1227	1669	1999	2208	2261
<b>44.0</b>	656	910	1265	1661	2009	2226	2291
<b>45.0</b>	632	883	1233	1665	2006	2249	2308
<b>46.0</b>	623	886	1242	1679	2026	2253	2320
<b>47.0</b>	620	872	1229	1639	2002	2247	2319
<b>48.0</b>	587	833	1184	1649	2014	2247	2307
<b>49.0</b>	585	831	1185	1624	1983	2218	2283
<b>50.0</b>	564	807	1156	1561	1925	2167	2240
<b>52.0</b>	501	728	1075	1490	1838	2052	2105
<b>54.0</b>	462	672	967	1338	1640	1829	1886
<b>56.0</b>	407	586	826	1131	1413	1598	1649
<b>58.0</b>	339	485	683	980	1238	1393	1429
<b>60.0</b>	293	414	572	796	975	1090	1125
<b>62.5</b>	222	318	436	590	745	849	880
<b>65.0</b>	169	246	338	456	576	651	677
<b>67.5</b>	120	182	251	334	420	474	490
<b>70.0</b>	78	120	169	235	285	314	323
<b>75.0</b>	46	51	61	70	74	75	75
<b>80.0</b>	40	40	41	42	42	42	41
<b>85.0</b>	36	37	37	38	38	38	38
<b>90.0</b>	30	29	28	28	27	26	25

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121706465.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	21.00	N.A.	2.60
0-30	76.89	N.A.	9.60
0-40	227.31	N.A.	28.40
0-60	662.81	N.A.	82.70
0-80	786.16	N.A.	98.10
0-90	801.74	N.A.	100.00
10-90	796.42	N.A.	99.30
20-40	206.31	N.A.	25.70
20-50	440.81	N.A.	55.00
40-70	529.16	N.A.	66.00
60-80	123.35	N.A.	15.40
70-80	29.69	N.A.	3.70
80-90	15.57	N.A.	1.90
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	801.74	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	5.32
10-20	15.68
20-30	55.88
30-40	150.42
40-50	234.50
50-60	201.00
60-70	93.66
70-80	29.69
80-90	15.57
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



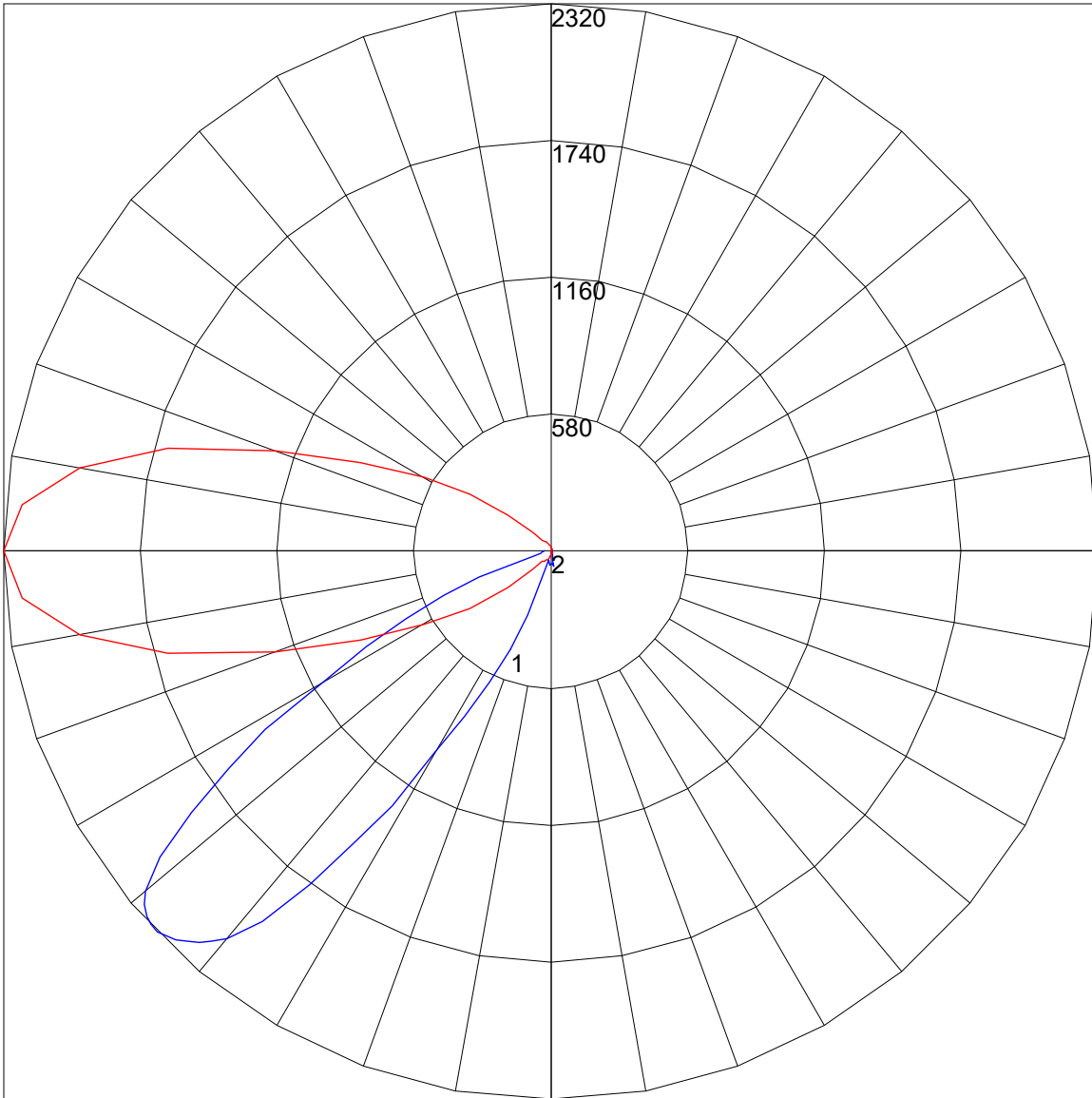
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121706465.IES**

**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	108	103	99	95	106	101	97	93	97	94	90	93	90	88	89	87	85	83
2	98	89	82	76	95	87	80	75	83	78	73	80	75	71	77	73	70	67
3	88	77	68	61	85	75	67	60	72	65	59	69	63	58	66	61	57	55
4	79	66	57	49	77	65	56	49	62	55	48	60	53	48	58	52	47	45
5	72	58	48	41	69	56	47	40	54	46	40	52	45	39	50	44	39	37
6	65	50	41	34	63	49	40	33	48	39	33	46	38	33	44	38	32	30
7	59	45	35	28	58	44	35	28	42	34	28	41	33	28	39	32	27	25
8	54	40	30	24	53	39	30	24	37	29	24	36	29	23	35	28	23	21
9	50	35	26	20	49	35	26	20	34	26	20	32	25	20	31	25	20	18
10	46	32	23	17	45	31	23	17	30	23	17	29	22	17	28	22	17	15

POLAR GRAPH



Maximum Candela = 2320 Located At Horizontal Angle = 180, Vertical Angle = 46  
# 1 - Vertical Plane Through Horizontal Angles (180 - 0) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (46) (Through Max. Cd.)