



8165 E Kaiser Blvd. Anaheim, CA 92808  
 p. 714.282.2270  
 f. 714.676.5558

Report No: L401608802

Date: 5/13/2016



NVLAP LAB CODE 200927-0

**Report No:** L041608802

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

**Model Number:** 400-HI-40/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLR(FR)-4-WH(OB)

**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. Catalog number is 400-HI-40/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLR(FR)-4-WH(OB). Received in working and undamaged condition. No modifications were necessary.

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

**Sample Arrival Date:** 4/9/16

**Date of Tests:** 5/12/16 - 5/12/16

**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	11/18/16
Xitron Power Analyzer	2503AH	MT-EL01	11/30/16
ITECH DC Power Supply	IT6122	PSDC-03-S1	11/17/16
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/24/16
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>	400-HI-40/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLR(FR)-4-WH(OB)
<b>Driver Model Number:</b>	INTUITIVE SYSTEMS ISD-601-1050-15-D
<b>Total Lumens:</b>	708.16
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	0.13
<b>Input Power (W):</b>	14.68
<b>Input Power Factor:</b>	0.97
<b>Current ATHD @ 120V(%):</b>	14%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	48
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:50
<b>Total Operating Time (Hours):</b>	2:00
<b>Off State Power(W):</b>	0.00

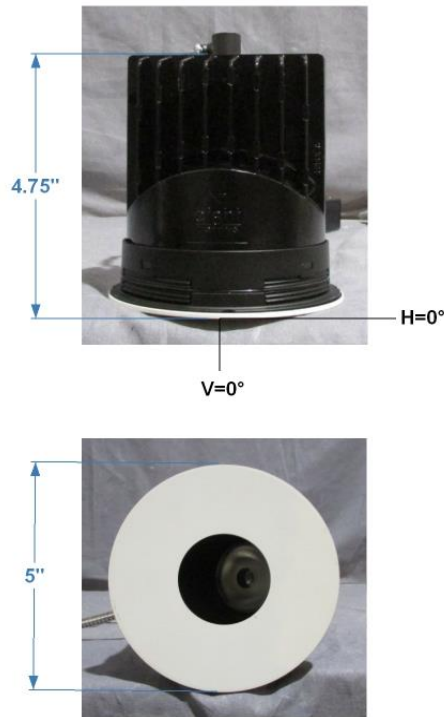


FIG.1 LUMINAIRE

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



8165 E Kaiser Blvd. Anaheim, CA 92808  
 p. 714.282.2270  
 f. 714.676.5558

Report No: L401608802

Date: 5/13/2016



NVLAP LAB CODE 200927-0

**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 : Dennis Malonzo

Test Report Released by:

Test Report Reviewed by:

Jeff Ahn  
 Engineering Manager

Steve Kang  
 Quality Assurance

*\*Attached are photometric data reports. Total number of pages: 11*

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



8165 E. Kaiser Blvd. Anaheim, CA 92808  
 p. 714.282.2270  
 f. 714.676.5558

# Photometric Test Report

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L041608802.IES**

## DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] L041608802  
 [TESTLAB] LIGHT LABORATORY, INC.  
 [ISSUE DATE] 05/13/2016  
 [MANUFAC] Number Eight Lighting Company  
 [LUMCAT] 400-HI-40/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLR(FR)-4-WH(OB)  
 [LUMINAIRE] 5"DI. X 4.75"H LED Recessed Adjustable Downlight, 90+ CRI, 40°  
 [MORE] Beam Spread, 35° Aiming Angle, 2" Aperture Trim LUMINAIRE  
 [BALLASTCAT] INTUITIVE SYSTEMS ISD-601-1050-15-D  
 [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, 14.68W  
 [TEST PROCEDURE] IESNA:LM-79-08

## CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	708
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	48
Total Luminaire Watts	14.68
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.22
Spacing Criterion (90-270)	0.74
Spacing Criterion (Diagonal)	1.42
Basic Luminous Shape	Circular
Luminous Length (0-180)	0.17 ft (Diameter)
Luminous Width (90-270)	0.17 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	670	670	7370
55	826	826	2478
65	1121	1682	2242
75	1831	3661	3661
85	5436	5436	10872

**IES INDOOR REPORT  
PHOTOMETRIC FILENAME : L041608802.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>
<b>0</b>	187	187	187	187	187	187	187	187	187	187
<b>2</b>	150	150	150	151	152	153	154	156	158	160
<b>4</b>	123	123	124	125	126	127	130	132	135	138
<b>6</b>	98	98	99	100	102	104	106	109	113	117
<b>8</b>	77	77	78	79	81	83	86	89	93	98
<b>10</b>	59	59	60	62	63	66	68	72	76	81
<b>12</b>	44	44	45	46	48	50	53	57	61	66
<b>14</b>	32	32	33	34	36	38	41	44	48	52
<b>16</b>	24	24	24	25	26	28	30	33	37	41
<b>18</b>	16	17	17	18	19	21	22	25	28	31
<b>20</b>	12	12	12	13	14	15	16	18	21	24
<b>22</b>	8	8	8	9	9	10	12	13	15	18
<b>24</b>	6	6	6	6	7	7	8	10	11	13
<b>26</b>	4	4	4	5	5	5	6	7	8	10
<b>28</b>	3	3	3	3	4	4	5	5	6	8
<b>30</b>	2	2	2	3	3	3	3	4	5	6
<b>32</b>	2	2	2	2	2	2	3	3	4	4
<b>34</b>	1	1	1	1	2	2	2	2	3	3
<b>35</b>	1	1	1	1	1	2	2	2	2	3
<b>36</b>	1	1	1	1	1	1	2	2	2	3
<b>38</b>	1	1	1	1	1	1	1	2	2	2
<b>40</b>	1	1	1	1	1	1	1	1	2	2
<b>42</b>	1	1	1	1	1	1	1	1	1	2
<b>44</b>	1	1	1	1	1	1	1	1	1	1
<b>46</b>	1	1	1	1	1	1	1	1	1	1
<b>48</b>	1	1	1	1	1	1	1	1	1	1
<b>50</b>	1	1	1	1	1	1	1	1	1	1
<b>52</b>	1	1	1	1	1	1	1	1	1	1
<b>54</b>	1	1	1	1	1	1	1	1	1	1
<b>56</b>	1	1	1	1	1	1	1	1	1	1
<b>58</b>	1	1	1	1	1	1	1	1	1	1
<b>60</b>	1	1	1	1	1	1	1	1	1	1
<b>62</b>	1	1	1	1	1	1	1	1	1	1
<b>64</b>	1	1	1	1	1	1	1	1	1	1
<b>66</b>	1	1	1	1	1	1	1	1	1	2
<b>68</b>	1	1	1	1	1	1	1	1	1	2
<b>70</b>	1	1	1	1	1	1	1	1	1	2
<b>75</b>	1	1	1	1	1	1	1	1	1	2
<b>80</b>	1	1	1	1	1	1	1	1	1	2
<b>85</b>	1	1	1	1	1	1	1	1	1	1
<b>90</b>	0	0	0	0	0	0	0	0	0	0

**Vert. Horizontal Angles**

<b>Angles</b>	<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>
<b>0</b>	187	187	187	187	187	187	187	187	187	187
<b>2</b>	162	164	167	170	173	176	179	183	186	190
<b>4</b>	142	146	150	155	160	165	171	177	184	190
<b>6</b>	121	126	132	138	145	153	161	170	179	189
<b>8</b>	103	109	116	123	131	140	150	161	173	187
<b>10</b>	87	93	100	108	117	127	139	152	166	182
<b>12</b>	71	78	85	94	103	115	127	141	157	176
<b>14</b>	58	64	72	81	91	102	115	131	148	167
<b>16</b>	46	53	60	68	78	90	104	119	137	157

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L041608802.IES**

**CANDELA TABULATION - (Cont.)**

18	36	41	48	56	66	79	92	107	126	148
20	28	33	38	46	55	66	80	95	114	135
22	21	25	30	36	44	55	66	82	101	123
24	17	20	24	29	36	45	56	67	89	109
26	12	15	19	23	29	37	47	59	77	97
28	9	12	15	19	24	30	39	50	64	83
30	7	9	11	15	19	25	32	41	54	71
32	5	7	9	11	15	20	26	35	45	59
34	4	5	7	9	12	17	21	28	37	50
35	4	4	6	8	10	14	19	25	34	46
36	3	4	5	7	9	12	18	23	31	42
38	3	3	4	5	7	10	13	19	25	35
40	2	3	3	4	5	7	10	15	20	29
42	2	2	3	3	4	6	8	11	18	24
44	2	2	2	3	3	4	6	9	13	19
46	2	2	2	2	3	3	4	6	9	17
48	2	2	2	2	2	3	3	5	7	11
50	2	2	2	2	2	2	3	4	5	8
52	2	2	2	2	2	2	2	3	4	5
54	2	2	2	2	2	2	2	3	3	4
56	2	2	2	2	2	2	2	2	3	3
58	2	2	2	2	2	2	2	2	2	3
60	2	2	2	2	2	2	2	2	2	2
62	2	2	2	2	2	2	2	2	2	2
64	2	2	2	2	2	2	2	2	2	2
66	2	2	2	2	2	2	2	2	2	2
68	2	2	2	2	2	2	2	2	2	2
70	2	2	2	2	2	2	2	2	2	2
75	2	2	2	2	2	2	2	2	2	2
80	2	2	2	2	2	2	2	2	2	2
85	2	2	2	2	2	2	2	2	2	2
90	0	0	0	0	0	0	0	0	0	0

**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>
0	187	187	187	187	187	187	187	187	187	187
2	194	197	201	204	208	211	214	217	220	222
4	197	204	211	218	226	232	239	246	252	257
6	200	211	222	234	246	257	269	280	291	300
8	200	215	232	248	265	282	299	316	332	348
10	199	218	239	259	283	306	331	353	377	399
12	195	218	244	270	298	328	359	389	421	452
14	190	216	245	276	310	347	384	422	463	504
16	187	213	245	282	322	363	408	457	505	555
18	185	206	240	281	324	373	426	484	543	609
20	163	196	234	276	324	380	439	507	581	663
22	149	189	222	269	320	381	448	525	612	687
24	137	170	212	258	312	378	450	536	635	704
26	123	155	198	245	302	370	447	540	648	772
28	109	139	193	230	287	358	437	532	653	787
30	95	123	165	212	273	341	423	525	647	790
32	81	107	143	197	249	322	404	507	631	784
34	65	93	123	185	229	296	382	484	607	748
35	63	85	116	157	214	286	369	471	591	687
36	57	70	107	147	201	273	359	450	575	685

**IES INDOOR REPORT  
PHOTOMETRIC FILENAME : L041608802.IES**

**CANDELA TABULATION - (Cont.)**

38	49	66	91	126	189	240	323	422	542	659
40	41	56	72	108	150	212	286	376	488	635
42	34	47	65	92	129	191	248	335	434	561
44	27	39	55	71	107	151	211	285	379	496
46	22	32	45	65	92	127	190	245	326	422
48	18	25	37	53	69	107	149	206	277	368
50	12	19	29	43	63	89	123	187	231	307
52	9	14	23	34	49	65	103	139	200	258
54	6	10	18	25	38	56	92	112	155	209
56	4	6	10	19	27	41	60	89	123	166
58	3	4	6	11	20	29	45	62	95	131
60	3	3	4	7	11	21	31	46	63	99
62	2	2	3	4	6	11	21	29	45	61
64	2	2	2	3	4	6	10	16	26	40
66	2	2	2	2	3	3	5	8	13	22
68	2	2	2	2	2	2	3	4	6	9
70	2	2	2	2	2	2	2	2	2	3
75	2	2	2	2	2	2	2	1	1	1
80	2	2	2	2	2	2	2	1	1	1
85	2	2	2	2	2	2	2	1	1	1
90	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>
0	187	187	187	187	187	187	187
2	224	226	228	229	230	230	231
4	263	267	271	274	276	277	278
6	310	317	324	330	334	336	337
8	362	374	385	394	400	404	405
10	419	438	454	468	477	483	485
12	480	506	529	548	561	571	574
14	542	578	613	642	664	679	684
16	609	663	696	751	780	798	805
18	678	748	805	852	889	912	920
20	753	825	897	956	1003	1032	1042
22	809	900	986	1052	1104	1134	1144
24	860	964	1057	1128	1182	1213	1225
26	900	1013	1113	1188	1247	1282	1294
28	926	1048	1155	1236	1295	1335	1348
30	938	1069	1182	1269	1336	1375	1385
32	936	1075	1196	1289	1359	1396	1408
34	921	1075	1189	1293	1365	1404	1412
35	908	1059	1187	1288	1362	1401	1409
36	885	1047	1177	1283	1352	1394	1404
38	853	1019	1139	1248	1326	1372	1382
40	800	960	1098	1203	1281	1329	1344
42	679	886	1032	1138	1223	1272	1287
44	641	796	944	1053	1134	1187	1202
46	553	671	831	947	1032	1083	1099
48	470	591	687	840	922	973	992
50	400	500	594	673	786	842	859
52	334	419	507	586	644	689	709
54	272	344	421	490	548	588	602
56	220	284	343	405	455	487	500
58	174	225	280	329	372	402	412

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L041608802.IES**

**CANDELA TABULATION - (Cont.)**

<b>60</b>	134	174	221	262	297	323	332
<b>62</b>	93	127	164	200	228	247	255
<b>64</b>	59	82	108	136	159	173	178
<b>66</b>	32	45	61	77	91	101	104
<b>68</b>	15	21	30	39	46	51	53
<b>70</b>	5	8	12	16	19	22	23
<b>75</b>	1	1	1	1	1	1	1
<b>80</b>	1	1	1	1	1	1	1
<b>85</b>	1	1	1	1	1	1	1
<b>90</b>	0	0	0	0	0	0	0



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L041608802.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	92.60	N.A.	13.10
0-30	239.77	N.A.	33.90
0-40	431.92	N.A.	61.00
0-60	681.81	N.A.	96.30
0-80	706.95	N.A.	99.80
0-90	708.16	N.A.	100.00
10-90	688.82	N.A.	97.30
20-40	339.31	N.A.	47.90
20-50	504.03	N.A.	71.20
40-70	272.78	N.A.	38.50
60-80	25.14	N.A.	3.60
70-80	2.25	N.A.	0.30
80-90	1.21	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	708.16	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	19.34
10-20	73.26
20-30	147.17
30-40	192.15
40-50	164.71
50-60	85.18
60-70	22.89
70-80	2.25
80-90	1.21
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

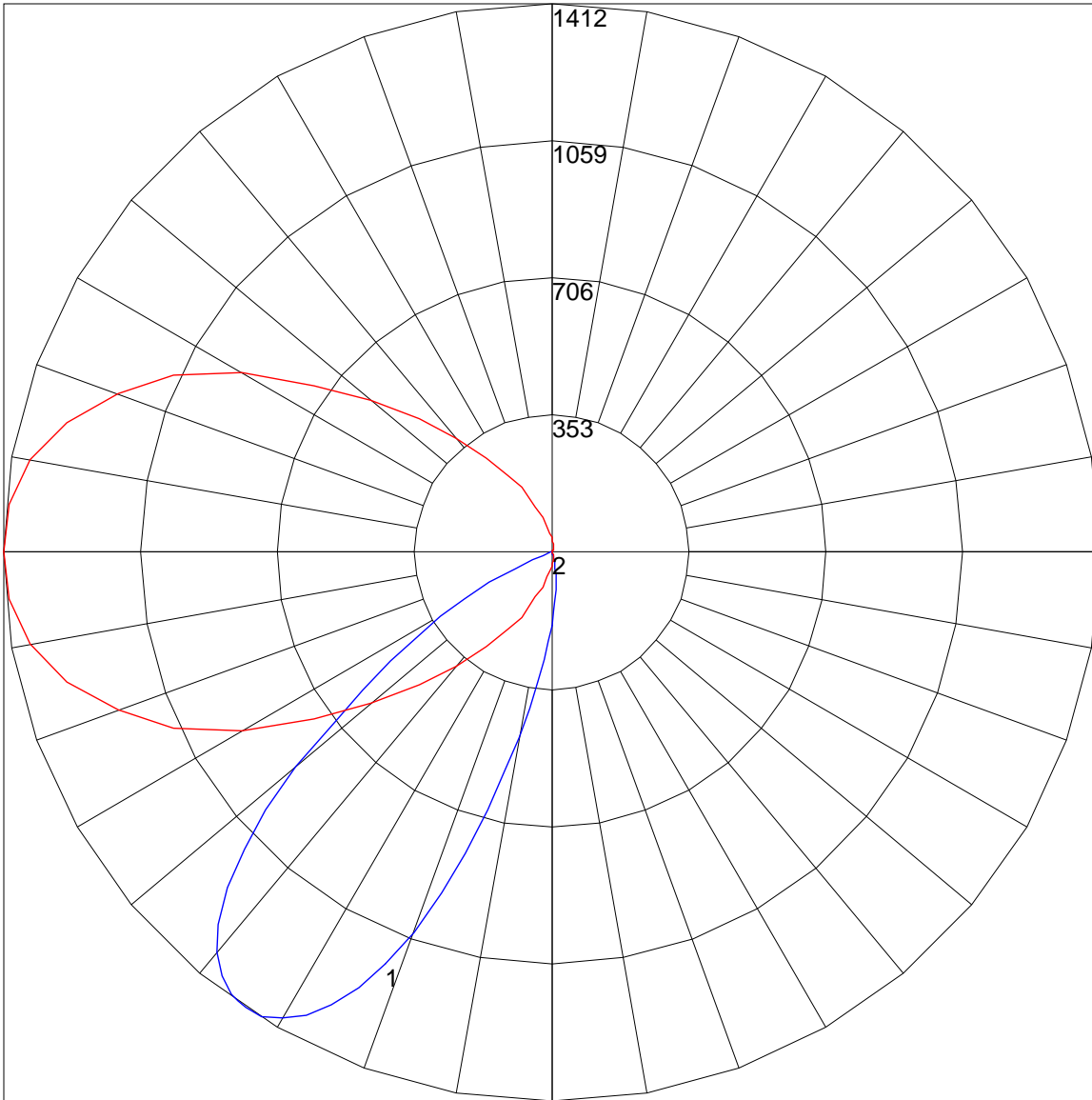
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L041608802.IES**

**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	89
2	103	97	92	87	101	95	90	86	92	88	84	89	85	82	86	83	80	79
3	96	87	80	75	93	86	79	74	83	77	73	80	76	72	78	74	71	69
4	89	78	71	65	86	77	70	65	75	69	64	72	67	63	70	66	62	60
5	82	71	63	57	80	70	62	57	68	61	56	66	60	56	64	59	55	53
6	76	64	56	50	74	63	56	50	61	55	50	60	54	49	58	53	49	47
7	70	58	50	45	69	57	50	44	56	49	44	54	48	44	53	48	44	42
8	66	53	45	40	64	52	45	40	51	44	39	50	44	39	49	43	39	37
9	61	49	41	36	60	48	41	36	47	40	35	46	40	35	45	39	35	33
10	57	45	37	32	56	44	37	32	43	37	32	42	36	32	41	36	32	30

POLAR GRAPH



Maximum Candela = 1412 Located At Horizontal Angle = 180, Vertical Angle = 34  
# 1 - Vertical Plane Through Horizontal Angles (180 - 0) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (34) (Through Max. Cd.)