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Report No: L041608808R01

Date: 5/20/2016



NVLAP LAB CODE 200927-0

Report No: L041608808R01

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/FLS(FS)-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/FLS(FS)-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: 5/9/16

Date of Tests: 5/20/16 - 5/20/16

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

Manufacturer:	Number Eight Lighting Company
Model Number:	400-HI-40/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLS(FS)-4-WH(OB)
Driver Model Number:	INTUITIVE SYSTEMS ISD-601-1050-15-D
Total Lumens:	727.48
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.13
Input Power (W):	14.91
Input Power Factor:	0.97
Current ATHD @ 120V(%):	14%
Current ATHD @ 277V(%):	N/A
Efficacy:	49
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:15
Total Operating Time (Hours):	2:25
Off State Power(W):	0.00

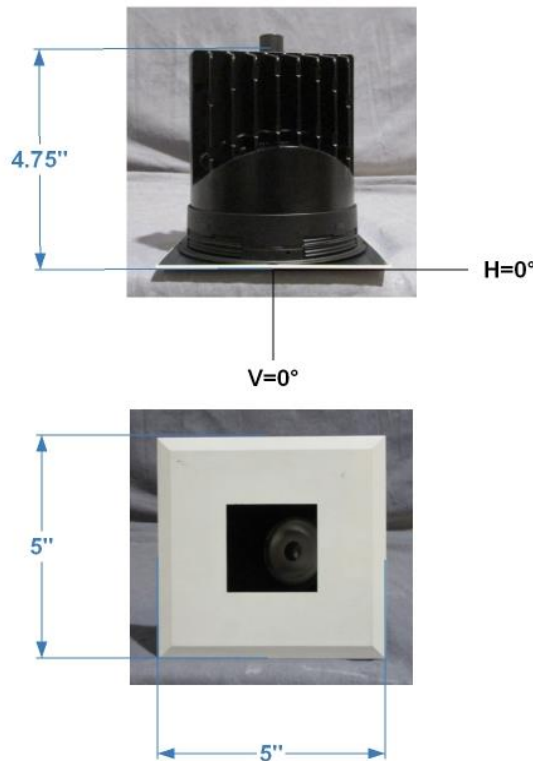


FIG.1 LUMINAIRE

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

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:



Jeff Ahn
Engineering Manager

Test Report Reviewed by:



Steve Kang
Quality Assurance

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



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Photometric Test Report

IES INDOOR REPORT

PHOTOMETRIC FILENAME : L041608808R01.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L041608808R01
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUE DATE] 05/20/2016
 [MANUFAC] Number Eight Lighting Company
 [LUMCAT] 400-HI-40/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLS(FS)-4-WH(OB)
 [LUMINAIRE] LED Recessed Adjustable Downlight, 90+ CRI,
 [MORE] 40° Beam Spread, 35° Aiming Angle, 2"x2" Aperture Trim
 [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, 14.91W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	727
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	49
Total Luminaire Watts	14.91
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.24
Spacing Criterion (90-270)	0.76
Spacing Criterion (Diagonal)	1.46
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.17 ft
Luminous Width (90-270)	0.17 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	526	1052	7104
55	649	1297	2271
65	880	1761	1761
75	1438	2875	2875
85	4269	8539	8539

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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	190	190	190	190	190	190	190	190	190	190
2	156	156	157	157	158	159	160	162	164	166
4	126	126	127	128	129	131	133	136	138	141
6	102	102	103	104	106	108	110	114	117	121
8	81	81	82	83	85	88	90	94	98	102
10	64	64	65	66	68	70	73	76	81	85
12	49	49	50	52	53	56	58	62	66	71
14	37	38	38	39	41	44	46	50	54	58
16	28	28	28	30	31	33	36	39	43	48
18	20	20	21	22	23	25	28	30	34	39
20	14	14	14	15	16	18	20	23	26	30
22	10	10	10	11	12	13	14	17	19	23
24	7	7	8	8	9	9	10	12	14	18
26	5	5	6	6	6	7	8	9	11	13
28	4	4	4	4	5	5	6	7	8	10
30	3	3	3	3	4	4	5	5	6	7
32	2	2	3	3	3	3	4	4	5	6
34	2	2	2	2	2	3	3	3	4	4
35	2	2	2	2	2	2	3	3	3	4
36	1	1	1	2	2	2	2	3	3	4
38	1	1	1	1	1	2	2	2	3	3
40	1	1	1	1	1	1	2	2	2	3
42	1	1	1	1	1	1	1	1	2	2
44	1	1	1	1	1	1	1	1	2	2
46	1	1	1	1	1	1	1	1	1	2
48	1	1	1	1	1	1	1	1	1	2
50	1	1	1	1	1	1	1	1	1	2
52	1	1	1	1	1	1	1	1	1	2
54	1	1	1	1	1	1	1	1	1	2
56	1	1	1	1	1	1	1	1	1	2
58	1	1	1	1	1	1	1	1	1	2
60	1	1	1	1	1	1	1	1	1	2
62	1	1	1	1	1	1	1	1	1	2
64	1	1	1	1	1	1	1	1	1	2
66	1	1	1	1	1	1	1	1	2	2
68	1	1	1	1	1	1	1	1	2	2
70	1	1	1	1	1	1	1	1	2	2
75	1	1	1	1	1	1	1	1	2	2
80	1	1	1	1	1	1	1	1	2	2
85	1	1	1	1	1	1	1	1	1	2
90	0	0	0	0	0	0	0	0	0	0

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	190	190	190	190	190	190	190	190	190	190
2	168	170	172	175	178	180	183	186	189	192
4	145	149	153	158	163	168	174	180	186	193
6	126	131	136	142	149	156	165	173	182	191
8	107	113	119	127	135	144	154	164	176	189
10	91	97	104	112	120	131	142	154	169	184
12	76	83	90	98	107	119	130	144	160	178
14	64	70	78	86	96	106	119	134	150	169
16	53	60	67	75	84	96	108	123	141	161

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CANDELA TABULATION - (Cont.)

18	43	49	56	65	73	85	97	112	130	151
20	35	40	47	54	64	74	87	102	118	140
22	27	33	39	46	54	64	76	90	107	128
24	21	26	31	38	46	55	64	80	96	116
26	17	20	26	32	39	48	58	65	86	105
28	12	17	20	26	33	40	50	61	76	95
30	9	12	17	21	27	34	43	53	62	83
32	7	9	12	18	22	28	36	45	56	72
34	5	7	9	12	19	23	29	37	47	59
35	5	6	8	11	15	21	26	34	43	56
36	4	5	7	10	13	19	24	31	39	51
38	4	4	6	7	10	14	20	24	32	42
40	3	4	5	6	8	11	14	21	26	34
42	3	3	4	5	6	8	11	15	21	28
44	3	3	3	4	5	6	8	11	15	22
46	2	3	3	3	4	5	6	8	12	17
48	2	2	3	3	4	4	5	7	9	13
50	2	2	3	3	3	4	4	5	7	10
52	2	2	2	3	3	3	4	4	5	7
54	2	2	2	2	3	3	3	3	4	5
56	2	2	2	2	2	3	3	3	3	4
58	2	2	2	2	2	2	3	3	3	3
60	2	2	2	2	2	2	2	3	3	3
62	2	2	2	2	2	2	2	3	3	3
64	2	2	2	2	2	2	2	2	2	3
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	190	190	190	190	190	190	190	190	190	190
2	195	198	201	204	207	210	213	215	218	220
4	199	206	213	220	227	234	240	247	253	258
6	202	212	223	235	246	257	268	279	289	298
8	203	217	232	249	265	281	298	314	328	344
10	201	220	239	261	282	305	327	350	372	392
12	197	220	245	270	297	326	356	384	415	444
14	192	217	246	276	308	344	380	416	455	493
16	193	216	246	280	321	359	403	450	497	545
18	177	208	242	281	323	371	422	477	535	600
20	165	203	237	277	324	378	438	499	572	645
22	154	198	224	270	323	377	445	523	605	696
24	142	173	215	260	313	378	449	532	624	742
26	130	159	207	248	305	367	447	541	632	763
28	117	146	185	233	289	359	443	535	626	785
30	105	132	169	218	273	345	426	530	621	784
32	92	117	152	209	253	325	407	514	620	776
34	79	101	134	175	232	303	385	490	607	757
35	73	94	123	165	226	287	373	478	599	744
36	61	87	116	155	216	277	360	458	585	736

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CANDELA TABULATION - (Cont.)

38	56	74	98	134	203	250	330	431	551	634
40	46	59	85	116	158	223	297	390	510	619
42	38	52	63	99	138	207	260	354	463	592
44	30	42	59	84	115	162	232	305	409	541
46	24	35	49	62	100	138	212	268	357	474
48	20	28	40	58	83	118	166	232	308	414
50	15	22	32	47	61	100	139	211	262	344
52	11	16	25	38	55	84	120	160	228	290
54	8	12	20	29	45	60	98	136	178	231
56	5	8	12	22	33	53	79	109	145	188
58	4	5	8	13	24	40	57	88	117	152
60	3	4	5	8	14	26	46	60	93	119
62	3	3	4	5	8	17	30	51	71	93
64	3	3	3	3	5	9	21	32	51	69
66	2	2	2	2	3	4	9	20	31	46
68	2	2	2	2	2	3	4	9	16	26
70	2	2	2	2	2	2	2	4	8	13
75	2	2	2	2	2	2	2	2	2	1
80	2	2	2	2	2	2	2	2	1	1
85	2	2	2	2	2	2	2	2	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	190	190	190	190	190	190	190
2	222	223	225	226	226	227	227
4	263	267	270	273	275	276	277
6	307	314	321	326	330	332	333
8	357	369	379	387	393	397	398
10	412	429	445	457	466	472	474
12	470	494	516	534	547	556	559
14	529	564	598	626	647	661	666
16	597	647	678	732	759	776	782
18	655	729	785	830	864	887	894
20	730	806	877	932	974	1003	1012
22	794	883	960	1026	1074	1103	1111
24	846	945	1033	1102	1151	1184	1195
26	884	993	1085	1163	1219	1253	1264
28	911	1027	1132	1210	1268	1305	1318
30	925	1048	1161	1245	1307	1344	1356
32	923	1057	1177	1266	1333	1371	1382
34	911	1049	1177	1271	1341	1378	1392
35	901	1048	1166	1267	1339	1377	1389
36	888	1030	1163	1259	1330	1371	1385
38	852	1004	1131	1234	1309	1348	1364
40	799	954	1093	1193	1268	1313	1328
42	750	903	1027	1139	1217	1259	1273
44	627	825	957	1067	1137	1181	1195
46	599	747	861	968	1045	1087	1098
48	531	622	765	862	935	983	997
50	452	557	630	752	827	865	873
52	370	466	557	630	663	706	720
54	303	386	448	514	568	604	618
56	245	308	372	425	472	506	518
58	193	245	300	349	391	420	432

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PHOTOMETRIC FILENAME : L041608808R01.IES

CANDELA TABULATION - (Cont.)

60	154	197	239	282	319	341	351
62	120	151	188	220	248	268	275
64	89	113	140	163	181	194	198
66	58	78	92	105	114	120	122
68	36	44	51	56	61	63	65
70	18	22	25	27	29	30	30
75	2	2	1	1	1	1	1
80	1	1	1	1	1	1	1
85	1	1	1	1	1	1	1
90	0	0	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L041608808R01.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	92.34	N.A.	12.70
0-30	238.84	N.A.	32.80
0-40	431.28	N.A.	59.30
0-60	694.56	N.A.	95.50
0-80	726.23	N.A.	99.80
0-90	727.48	N.A.	100.00
10-90	708.03	N.A.	97.30
20-40	338.94	N.A.	46.60
20-50	509.86	N.A.	70.10
40-70	291.94	N.A.	40.10
60-80	31.66	N.A.	4.40
70-80	3.00	N.A.	0.40
80-90	1.26	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	727.48	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	19.45
10-20	72.89
20-30	146.50
30-40	192.44
40-50	170.92
50-60	92.36
60-70	28.66
70-80	3.00
80-90	1.26
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

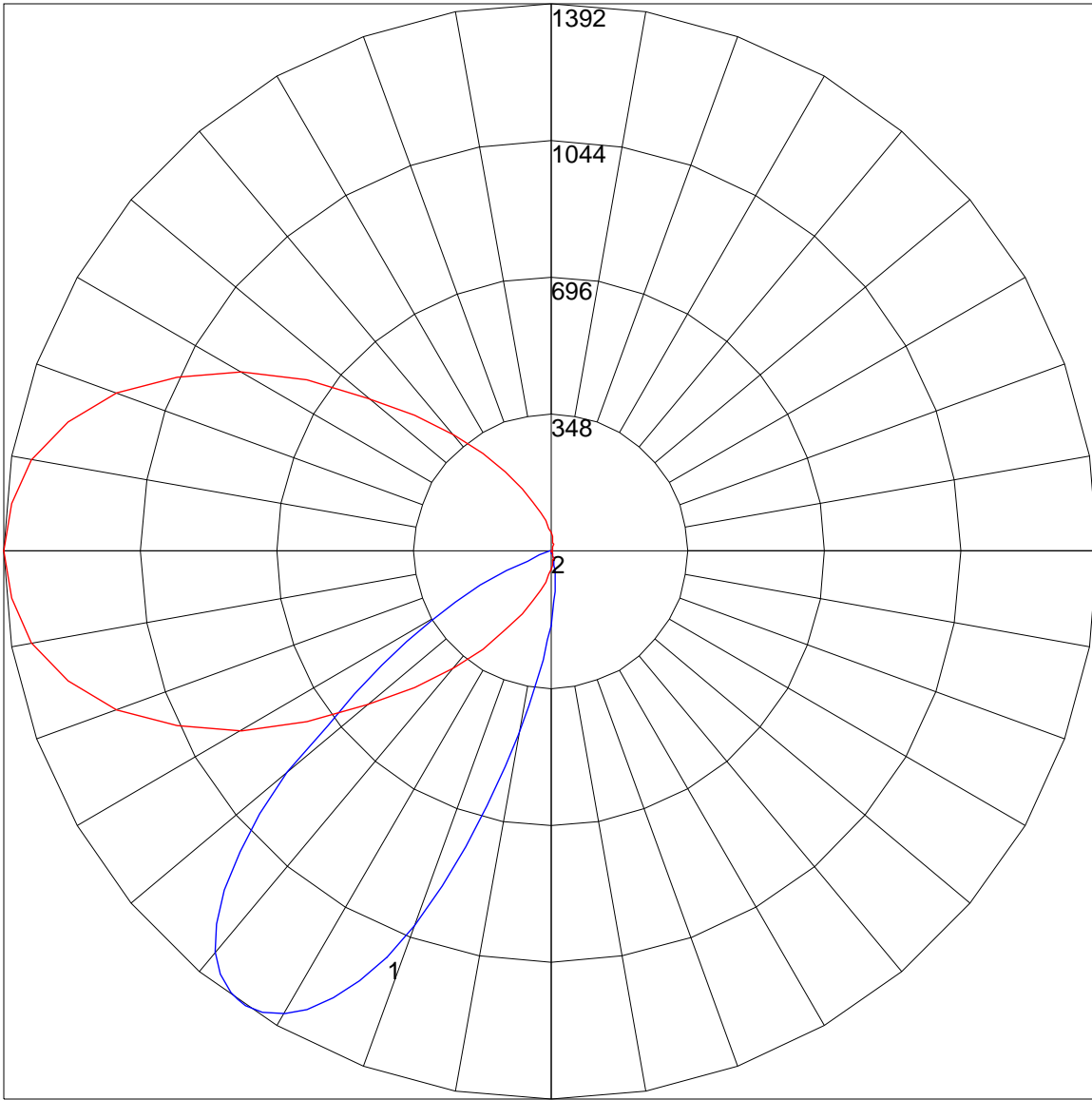
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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
0	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	111	108	104	102	109	106	103	100	101	99	97	98	96	94	94	93	91	89
2	103	97	91	87	101	95	90	86	91	87	84	88	85	82	85	83	80	78
3	95	87	80	74	93	85	79	74	82	77	72	80	75	71	77	73	70	68
4	88	78	70	64	86	76	69	64	74	68	63	72	67	62	70	65	62	60
5	81	70	62	56	79	69	61	56	67	60	55	65	59	55	63	58	54	52
6	75	63	55	49	74	62	55	49	61	54	49	59	53	48	58	52	48	46
7	70	57	49	44	68	57	49	44	55	48	43	54	48	43	53	47	43	41
8	65	52	44	39	64	52	44	39	50	44	39	49	43	38	48	43	38	36
9	61	48	40	35	59	47	40	35	46	40	35	45	39	35	44	39	34	33
10	57	44	37	32	55	44	36	32	43	36	31	42	36	31	41	35	31	29

POLAR GRAPH



Maximum Candela = 1392 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.)