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Report No: L041608810

Date: 5/20/2016



NVLAP LAB CODE 200927-0

Report No: L041608810

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

Model Number: 400-HI-25/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-25/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: 5/17/16 - 5/17/16

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-25/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:	674.20
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.13
Input Power (W):	14.70
Input Power Factor:	0.97
Current ATHD @ 120V(%):	14%
Current ATHD @ 277V(%):	N/A
Efficacy:	46
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:20
Total Operating Time (Hours):	2:30
Off State Power(W):	0.00

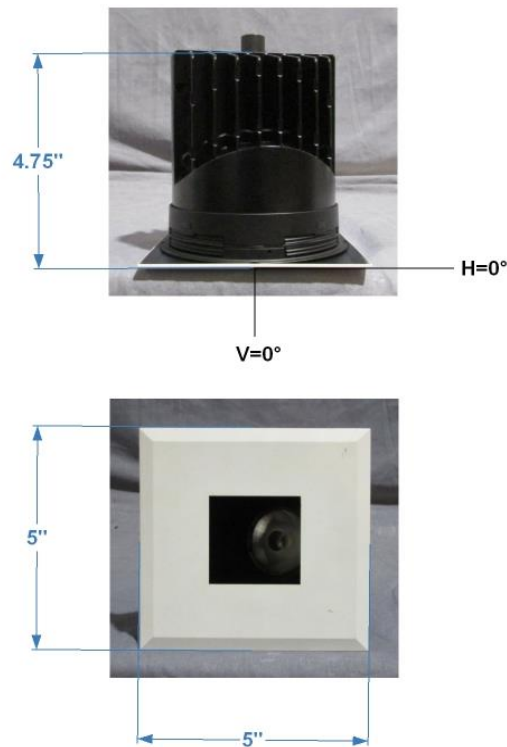


FIG.1 LUMINAIRE

*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 : L041608810.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L041608810
 [TESTLAB] LIGHT LABORATORY, INC.
 [ISSUE DATE] 05/20/2016
 [MANUFAC] Number Eight Lighting Company
 [LUMCAT] 400-HI-25/DIM1-4(PR1-4, DIM2-4, PR2-4)-1000/FLS(FS)-4-WH(OB)
 [LUMINAIRE] "L. X "W. LED Recessed Adjustable Downlight, 90+ CRI,
 [MORE] 25° Beam Spread, 35° Aiming Angle, 2"x2" 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, 14.70W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	674
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	46
Total Luminaire Watts	14.7
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.24
Spacing Criterion (90-270)	0.78
Spacing Criterion (Diagonal)	1.40
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	3684
55	649	649	1946
65	880	880	1761
75	1438	1438	2875
85	4269	4269	8539

IES INDOOR REPORT
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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	104	104	104	104	104	104	104	104	104	104
2	85	85	85	86	86	87	88	89	90	91
4	69	69	70	70	71	72	73	74	76	78
6	56	56	56	57	58	59	60	62	64	67
8	44	44	45	45	46	47	49	51	54	56
10	34	35	35	36	37	38	40	42	44	47
12	27	27	27	28	29	31	32	34	37	40
14	21	21	22	22	23	25	26	28	31	33
16	15	15	15	16	18	19	21	23	25	28
18	10	10	10	11	12	14	15	18	20	23
20	6	6	7	7	8	9	11	13	17	19
22	5	5	5	5	6	6	7	9	11	15
24	4	4	4	4	5	5	6	7	8	11
26	4	4	4	4	4	4	5	5	6	8
28	3	3	3	3	3	4	4	4	5	6
30	3	3	3	3	3	3	3	4	4	5
32	2	2	2	2	2	3	3	3	4	4
34	2	2	2	2	2	2	2	3	3	4
35	2	2	2	2	2	2	2	3	3	4
36	1	1	2	2	2	2	2	3	3	3
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	2	2	3
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	1
50	1	1	1	1	1	1	1	1	1	1
52	1	1	1	1	1	1	1	1	1	1
54	1	1	1	1	1	1	1	1	1	1
56	1	1	1	1	1	1	1	1	1	1
58	1	1	1	1	1	1	1	1	1	1
60	1	1	1	1	1	1	1	1	1	1
62	1	1	1	1	1	1	1	1	1	1
64	1	1	1	1	1	1	1	1	1	1
66	1	1	1	1	1	1	1	1	1	1
68	1	1	1	1	1	1	1	1	1	1
70	1	1	1	1	1	1	1	1	1	1
75	1	1	1	1	1	1	1	1	1	1
80	1	1	1	1	1	1	1	1	1	1
85	1	1	1	1	1	1	1	1	1	1
90	0	0	0	0	0	0	0	0	0	0

Vert. 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>	<u>95</u>
0	104	104	104	104	104	104	104	104	104	104
2	92	94	95	96	98	100	101	103	104	106
4	80	82	85	87	90	93	96	100	103	107
6	69	72	75	79	82	86	91	96	100	106
8	60	63	67	70	75	80	85	91	97	104
10	51	54	59	63	68	73	79	86	93	101
12	43	47	51	56	61	67	73	80	88	97
14	37	40	45	50	55	61	67	74	83	93
16	31	35	39	44	49	56	62	67	78	88

IES INDOOR REPORT
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CANDELA TABULATION - (Cont.)

18	26	30	34	39	44	50	57	64	73	83
20	22	26	30	34	40	46	52	59	65	78
22	18	22	26	30	36	41	48	54	63	73
24	16	18	22	27	32	38	44	50	58	67
26	11	16	19	24	29	34	40	46	53	61
28	8	12	16	21	25	30	36	42	48	56
30	7	9	14	18	22	27	32	37	43	50
32	5	7	10	16	20	24	28	33	37	44
34	5	6	8	12	17	20	24	27	31	36
35	4	5	7	11	15	19	22	25	28	32
36	4	5	7	10	14	17	20	22	25	28
38	4	4	5	7	11	13	15	17	19	22
40	3	4	5	6	8	11	12	13	14	16
42	3	4	4	5	6	8	9	10	11	12
44	3	3	4	4	5	6	7	7	8	9
46	3	3	4	4	4	5	5	6	6	7
48	2	3	3	4	4	4	5	5	5	6
50	1	2	3	3	3	4	4	4	5	5
52	1	2	2	3	3	3	3	4	4	4
54	1	2	2	2	3	3	3	3	3	4
56	1	2	2	2	2	2	3	3	3	3
58	2	2	2	2	2	2	2	3	3	3
60	2	2	2	2	2	2	2	3	3	3
62	2	2	2	2	2	2	2	2	3	3
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	1	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	104	104	104	104	104	104	104	104	104	104
2	108	110	111	113	115	116	118	119	121	122
4	110	114	118	122	126	130	134	138	141	145
6	112	118	124	131	137	145	152	159	166	173
8	112	120	129	139	150	160	172	185	197	209
10	110	121	133	146	161	178	196	214	235	255
12	109	121	135	152	172	195	219	247	276	305
14	105	119	136	157	182	208	242	280	319	361
16	101	116	136	159	199	225	266	314	366	425
18	96	112	132	159	205	235	283	344	412	490
20	91	107	129	157	206	241	298	372	456	560
22	85	101	122	152	207	245	307	393	495	603
24	79	94	116	145	184	242	311	408	524	619
26	73	88	107	137	178	237	307	412	544	718
28	63	80	100	128	165	231	300	403	551	747
30	60	73	90	117	155	222	285	398	544	743
32	52	61	81	104	139	192	266	372	527	742
34	43	53	82	91	125	172	250	352	496	707
35	38	47	58	84	115	163	245	331	479	697
36	33	42	54	75	105	152	238	315	460	577

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CANDELA TABULATION - (Cont.)

38	25	31	41	53	86	125	190	286	426	548
40	18	23	30	42	54	99	161	255	371	529
42	14	17	23	30	45	82	119	213	318	474
44	11	13	17	23	33	52	87	152	265	395
46	8	10	13	17	25	40	55	110	211	330
48	7	8	10	13	20	30	50	84	144	264
50	5	6	8	10	15	24	37	53	106	178
52	5	5	6	8	11	17	28	45	78	131
54	4	4	5	6	8	12	22	33	51	88
56	3	4	4	5	6	8	14	24	37	52
58	3	3	3	4	4	6	9	15	26	39
60	3	3	3	3	4	4	6	10	16	26
62	3	3	3	3	3	3	4	7	11	16
64	2	2	2	3	3	3	3	4	7	10
66	2	2	2	2	2	3	3	3	4	6
68	2	2	2	2	2	2	2	3	3	3
70	2	2	2	2	2	2	2	2	2	2
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
Angles

	150	155	160	165	170	175	180
0	104	104	104	104	104	104	104
2	123	124	124	125	125	125	125
4	148	151	153	155	156	157	157
6	179	185	190	194	197	199	199
8	221	232	241	249	254	258	259
10	274	292	309	322	332	338	341
12	336	364	392	415	433	444	448
14	407	455	496	534	564	582	588
16	492	556	620	663	715	741	749
18	579	641	756	828	886	922	935
20	632	789	905	1001	1078	1130	1147
22	767	912	1056	1180	1280	1339	1360
24	848	1023	1198	1348	1469	1553	1582
26	912	1113	1320	1502	1657	1751	1788
28	958	1185	1426	1637	1816	1940	1985
30	980	1245	1491	1746	1962	2104	2148
32	979	1250	1547	1822	2053	2218	2277
34	954	1235	1550	1838	2091	2256	2305
35	933	1216	1533	1822	2066	2236	2293
36	894	1187	1503	1804	2029	2195	2250
38	843	1125	1403	1692	1924	2072	2115
40	754	1012	1299	1566	1759	1899	1947
42	585	899	1157	1402	1579	1706	1750
44	548	788	1005	1229	1401	1516	1549
46	484	583	860	1057	1215	1324	1360
48	389	536	719	890	1027	1119	1151
50	309	436	568	707	825	896	916
52	240	318	411	506	585	653	684
54	140	210	266	344	423	481	500
56	92	134	183	236	283	318	331
58	54	88	120	153	186	211	220

IES INDOOR REPORT
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CANDELA TABULATION - (Cont.)

60	39	54	76	98	119	133	138
62	25	36	48	58	68	75	77
64	14	21	26	29	31	32	32
66	8	10	11	11	11	12	12
68	4	5	5	5	5	5	5
70	3	3	3	3	3	2	2
75	1	1	1	1	1	1	1
80	1	1	1	1	1	1	1
85	1	1	1	1	1	0	0
90	0	0	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L041608810.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	67.09	N.A.	10.00
0-30	219.46	N.A.	32.60
0-40	444.58	N.A.	65.90
0-60	664.49	N.A.	98.60
0-80	673.03	N.A.	99.80
0-90	674.20	N.A.	100.00
10-90	662.88	N.A.	98.30
20-40	377.49	N.A.	56.00
20-50	542.70	N.A.	80.50
40-70	226.79	N.A.	33.60
60-80	8.54	N.A.	1.30
70-80	1.66	N.A.	0.20
80-90	1.17	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	674.20	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	11.32
10-20	55.77
20-30	152.37
30-40	225.12
40-50	165.21
50-60	54.70
60-70	6.88
70-80	1.66
80-90	1.17
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

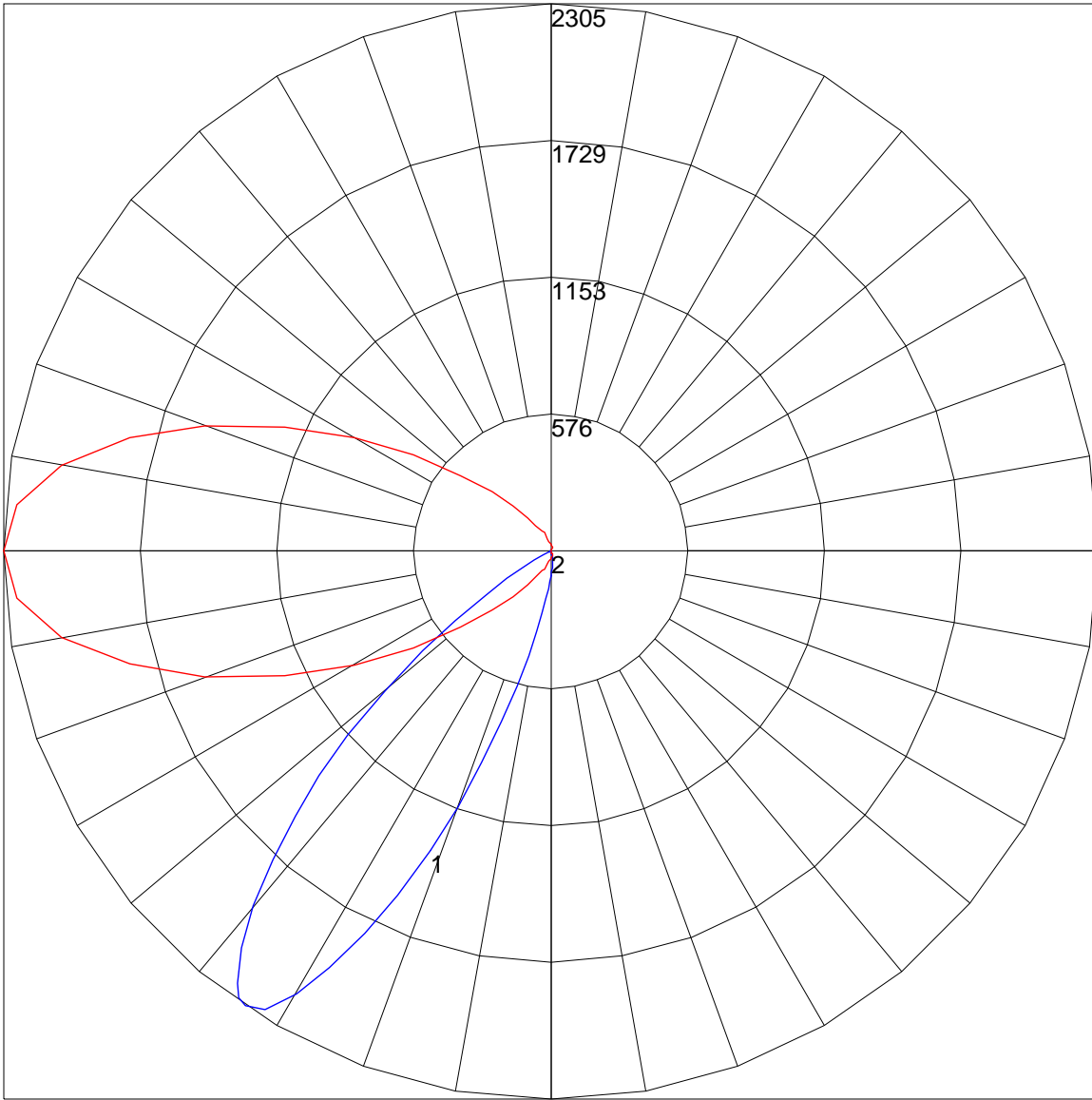
IES INDOOR REPORT
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	112	108	105	102	109	106	103	101	102	100	98	98	96	95	95	93	92	90
2	104	98	92	88	102	96	91	87	93	89	85	89	86	83	87	84	81	80
3	96	88	81	76	94	87	80	76	84	79	74	81	77	73	79	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	58	81	71	63	58	69	62	57	67	61	57	65	60	56	54
6	77	65	57	51	75	64	56	51	62	56	51	61	55	50	59	54	50	48
7	71	59	51	45	69	58	51	45	57	50	45	55	49	45	54	49	44	43
8	66	54	46	40	64	53	45	40	52	45	40	50	44	40	49	44	40	38
9	61	49	41	36	60	48	41	36	47	40	36	46	40	36	45	40	35	34
10	57	45	37	32	56	44	37	32	43	37	32	42	36	32	42	36	32	30

POLAR GRAPH



Maximum Candela = 2305 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.)