

## IES Report

ZipThree® | 707 | Symmetric, uplight only | 90 CRI | SO

707-Z3-4-48-XX-XX-X-0-Z-SO-359-U1-X-XX-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	131	135	137	139
Total Lumens, 4' rail length (1219mm)	3393	3501	3572	3608
Lumens per foot (305mm)	848	875	893	902
Input Power (W), 4' rail length (1219mm)	26.1	26.1	26.1	26.1
Watts per foot (305mm)	6.6	6.6	6.6	6.6
CRI	94	94	94	94

Due to the large number of options in Vode's product offering, most Vode IES reports are factored reports prepared from source reports. Source reports are the IES test reports prepared for Vode by an NVLAP accredited photometric test laboratory. Factored reports are based on data from the Vode source reports.

If the data above is in black, it is directly from a Vode source report. If it is in grey, it is factored from Vode source reports. Reference details on Vode source reports can be found on the [IES File Finder](#) page on [vode.com](#).



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

Report No: L121911540R01



**Report No:** L121911540R01

**Issue Date:** 1/2/2020

**Report Prepared For:** Vode Lighting  
21684 8th Street East, Suite 700, Sonoma, CA 95476

**Model Number:** 707-Z3-48-Z-SO-359-U1-AL

**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.

**Special Test Condition:** Fixture is tested with no special conditions.

**Sample Arrival Date:** 12/16/19

**Date of Tests:** 12/17/19 - 12/24/19

**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	1/9/21
BK PRECISION	1747	PS-DC04	1/10/21
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/21
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

### General Information

<b>Manufacturer:</b>	Vode Lighting
<b>Model Number:</b>	707-Z3-48-Z-SO-359-U1-AL
<b>Driver Model Number:</b>	MEAN WELL HLG-40H-36A

### Test Summary

<b>Total Lumens:</b>	3572.01
<b>Efficacy:</b>	136.77
<b>Color Redering Index:</b>	94.2
<b>Correlated Color Temperature:</b>	3405
<b>Input Voltage (VAC/60Hz):</b>	120.04
<b>Input Current (Amp):</b>	0.2188
<b>Input Power (W):</b>	26.12
<b>Input Power Factor:</b>	0.9944
<b>Current ATHD (%):</b>	7.5%

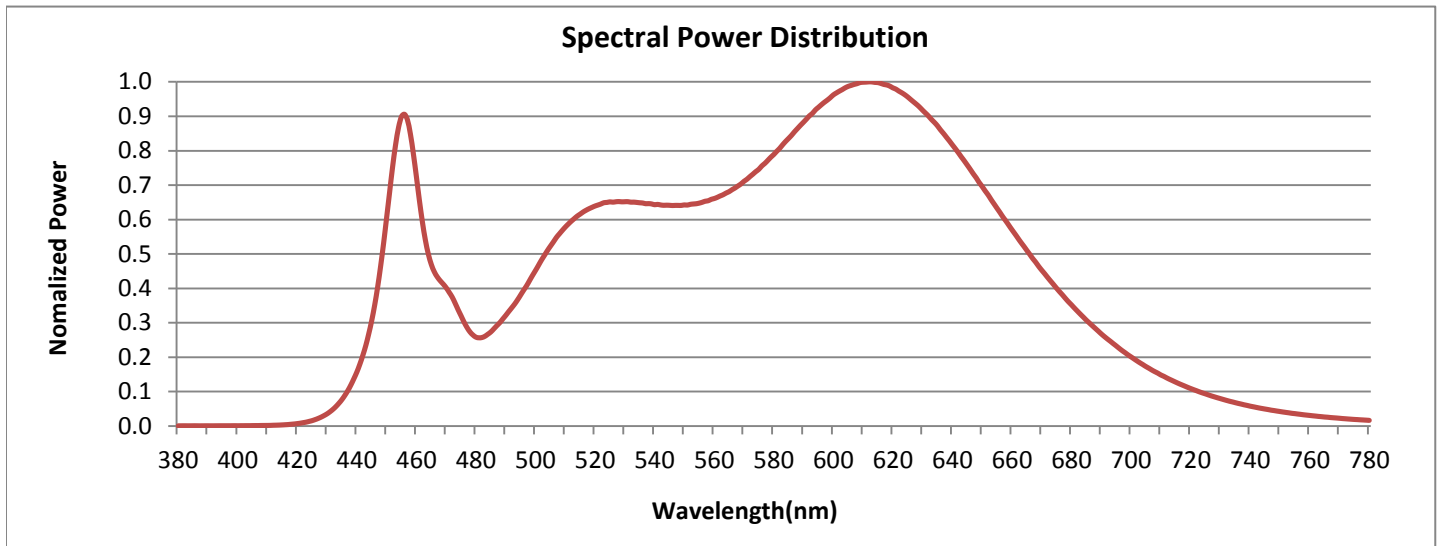
### Test Condition

<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:30
<b>Total Operating Time (Hours):</b>	1:30



FIG. 1 LUMINAIRE

## Colorimetry Test Results

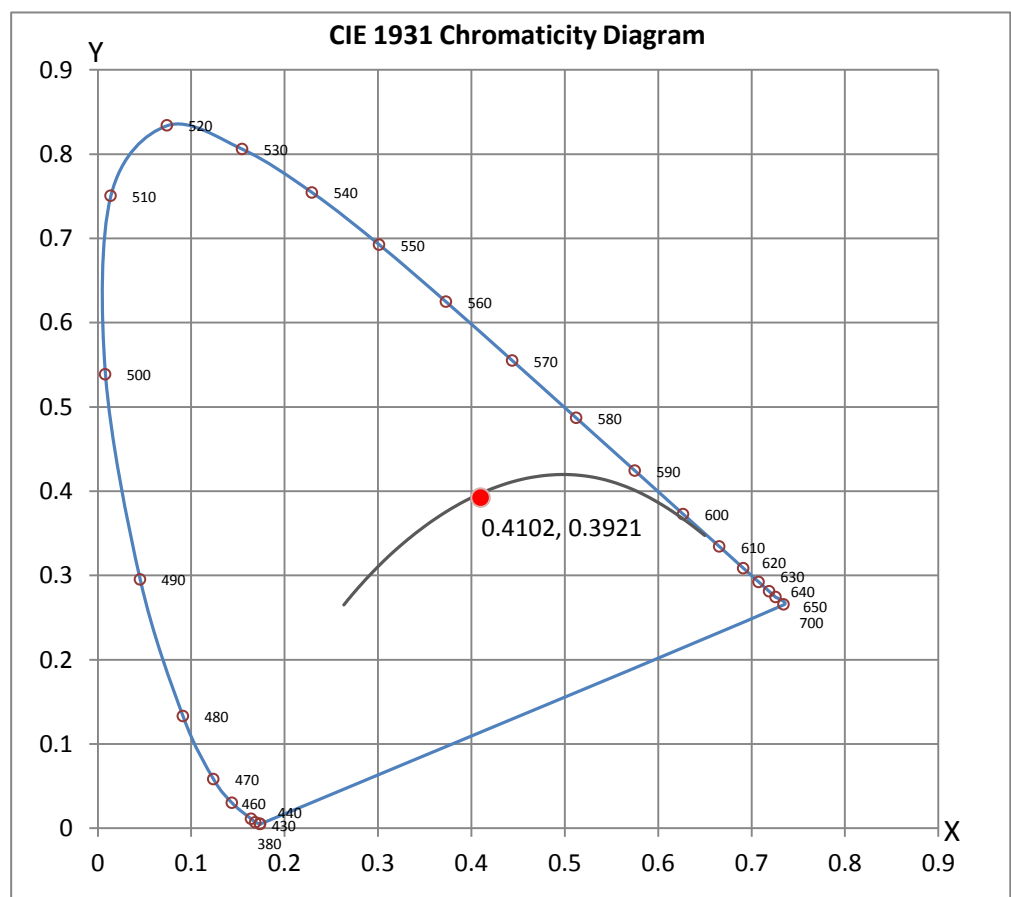


### CRI & CCT

x	0.4102
y	0.3921
u'	0.2383
v'	0.5126
CRI	94.20
CCT	3405
Duv	-0.00044

### R Values

R1	96.25
R2	99.02
R3	98.17
R4	96.49
R5	96.19
R6	95.81
R7	90.58
R8	81.18
R9	57.73
R10	97.31
R11	97.99
R12	76.56
R13	97.91
R14	99.61
R15	90.41





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## 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 : Keyur Patel

Test Report Reviewed by:

Steve Kang  
Quality Assurance

*\*Attached are photometric data reports. Total number of pages: 9*



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## Photometric Test Report

### IES INDOOR REPORT

PHOTOMETRIC FILENAME : L121911540R01.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L121911540R01  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 1/2/2020  
[MANUFAC] Vode Lighting  
[LUMCAT] 707-Z3-48-Z-SO-359-U1-AL  
[LUMINAIRE] ZipThree LED, 48", 3500K, 90 CRI, zipper board, symmetric lens up,  
[MORE] standard output, clear anodized finish  
[BALLASTCAT] MEAN WELL HLG-40H-36A  
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND  
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.  
[INPUT] 120.04VAC, 26.12W  
[TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3572
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	137
Total Luminaire Watts	26.12
Ballast Factor	1.00
CIE Type	Indirect
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.07 ft
Luminous Width (90-270)	3.98 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	0	0
55	0	0	0
65	0	0	0
75	0	0	0
85	0	0	0

IES INDOOR REPORT  
PHOTOMETRIC FILENAME : L121911540R01.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>
0	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0
75	0	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0
95	42	42	42	42	42	42	43	43	42	42
100	99	99	99	100	100	100	101	101	102	102
105	172	172	172	173	174	175	176	177	178	179
110	260	260	260	261	263	264	266	268	269	272
115	362	362	363	364	366	367	370	372	374	377
120	478	478	479	480	482	484	486	489	492	494
125	603	603	604	605	607	609	611	614	616	619
130	731	731	732	733	734	736	739	741	743	746
135	855	855	856	857	858	859	861	863	865	867
140	969	969	970	970	971	972	973	975	976	978
145	1068	1068	1068	1069	1069	1070	1071	1072	1073	1074
150	1151	1152	1152	1152	1152	1153	1153	1154	1155	1155
155	1220	1220	1220	1220	1220	1220	1221	1221	1221	1222
160	1273	1274	1274	1273	1274	1274	1274	1274	1274	1274
165	1314	1314	1314	1314	1314	1314	1314	1314	1314	1314
170	1341	1341	1341	1341	1342	1342	1341	1341	1341	1341
175	1357	1357	1357	1357	1357	1357	1357	1357	1357	1357
180	1361	1361	1361	1361	1361	1361	1361	1361	1361	1361

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>
0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121911540R01.IES**

**CANDELA TABULATION - (Cont.)**

<b>65</b>	0	0	0	0	0	0	0	0	0
<b>70</b>	0	0	0	0	0	0	0	0	0
<b>75</b>	0	0	0	0	0	0	0	0	0
<b>80</b>	0	0	0	0	0	0	0	0	0
<b>85</b>	0	0	0	0	0	0	0	0	0
<b>90</b>	0	0	0	0	0	0	0	0	0
<b>95</b>	42	42	42	42	41	41	40	40	40
<b>100</b>	103	103	104	104	104	104	104	104	103
<b>105</b>	181	182	183	184	185	185	185	185	185
<b>110</b>	274	275	277	278	279	280	281	281	281
<b>115</b>	379	381	383	385	387	388	389	389	389
<b>120</b>	497	499	501	504	505	507	507	508	508
<b>125</b>	622	624	627	629	630	632	633	633	633
<b>130</b>	748	750	752	754	756	757	758	758	758
<b>135</b>	869	871	872	874	875	876	877	877	877
<b>140</b>	979	981	982	982	984	984	984	985	984
<b>145</b>	1075	1076	1076	1077	1078	1078	1078	1078	1078
<b>150</b>	1156	1156	1157	1157	1158	1158	1158	1158	1158
<b>155</b>	1222	1222	1222	1222	1223	1223	1223	1223	1223
<b>160</b>	1275	1274	1275	1274	1275	1275	1274	1274	1275
<b>165</b>	1314	1314	1314	1314	1314	1314	1314	1314	1314
<b>170</b>	1341	1341	1341	1341	1341	1341	1341	1341	1341
<b>175</b>	1357	1357	1357	1357	1357	1357	1357	1357	1357
<b>180</b>	1361	1361	1361	1361	1361	1361	1361	1361	1361



**IES INDOOR REPORT**  
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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	0.00	N.A.	0.00
0-30	0.00	N.A.	0.00
0-40	0.00	N.A.	0.00
0-60	0.00	N.A.	0.00
0-80	0.00	N.A.	0.00
0-90	0.00	N.A.	0.00
10-90	0.00	N.A.	0.00
20-40	0.00	N.A.	0.00
20-50	0.00	N.A.	0.00
40-70	0.00	N.A.	0.00
60-80	0.00	N.A.	0.00
70-80	0.00	N.A.	0.00
80-90	0.00	N.A.	0.00
90-110	243.34	N.A.	6.80
90-120	618.67	N.A.	17.30
90-130	1172.31	N.A.	32.80
90-150	2509.71	N.A.	70.30
90-180	3572.01	N.A.	100.00
110-180	3328.68	N.A.	93.20
0-180	3572.01	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	0.00
10-20	0.00
20-30	0.00
30-40	0.00
40-50	0.00
50-60	0.00
60-70	0.00
70-80	0.00
80-90	0.00
90-100	50.46
100-110	192.88
110-120	375.33
120-130	553.64
130-140	667.07
140-150	670.33
150-160	562.49
160-170	370.80
170-180	129.01

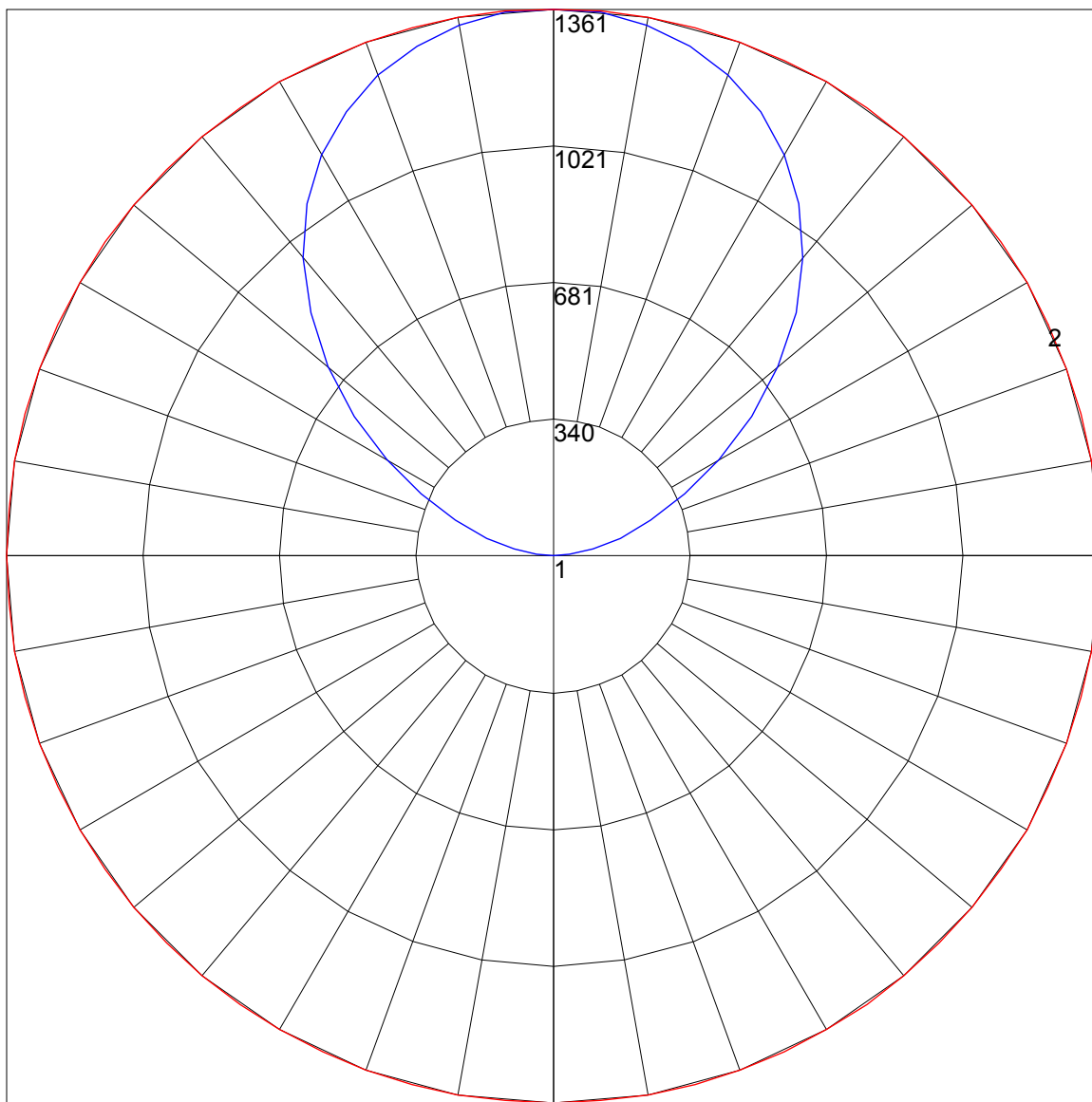
**IES INDOOR REPORT**  
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	95	95	95	95	81	81	81	81	56	56	56	32	32	32	10	10	10	0
1	87	83	79	76	74	71	68	65	48	47	45	28	27	26	9	9	8	0
2	79	72	66	62	67	62	57	53	42	40	37	24	23	22	8	7	7	0
3	72	63	56	51	61	54	49	44	37	34	31	21	20	18	7	6	6	0
4	65	56	48	43	56	48	42	37	33	29	26	19	17	16	6	6	5	0
5	60	49	42	36	51	42	36	32	29	25	22	17	15	13	5	5	4	0
6	55	44	36	31	47	38	32	27	26	22	19	15	13	11	5	4	4	0
7	50	39	32	27	43	34	28	23	23	19	17	14	11	10	4	4	3	0
8	47	35	28	23	40	30	24	20	21	17	14	12	10	9	4	3	3	0
9	43	32	25	20	37	28	22	18	19	15	13	11	9	8	4	3	3	0
10	40	29	22	18	34	25	19	16	17	14	11	10	8	7	3	3	2	0

POLAR GRAPH



Maximum Candela = 1361 Located At Horizontal Angle = 0, Vertical Angle = 180  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (180) (Through Max. Cd.)