



## IES Report

# ZipTwo® | 707 | 40° Symmetric | 90 CRI | SO

707-Z2-4-48-XX-XX-X-0-Z-SO-359-S1-X-WH-0

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	52	53	54	55
Total Lumens, 4' rail length (1219mm)	1333	1375	1403	1417
Lumens per foot (305mm)	333	344	351	354
Input Power (W), 4' rail length (1219mm)	26.0	26.0	26.0	26.0
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: L121911523



**Report No:** L121911523

**Issue Date:** 1/6/2020

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

**Model Number:** 707-Z2-48-Z-SO-359-S1-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:** 12/28/19 - 1/6/20

**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-Z2-48-Z-SO-359-S1-AL
<b>Driver Model Number:</b>	MEAN WELL HLG-40H-36A

### Test Summary

<b>Total Lumens:</b>	1402.66
<b>Efficacy:</b>	53.89
<b>Color Redering Index:</b>	93.3
<b>Correlated Color Temperature:</b>	3293
<b>Input Voltage (VAC/60Hz):</b>	119.98
<b>Input Current (Amp):</b>	0.2182
<b>Input Power (W):</b>	26.03
<b>Input Power Factor:</b>	0.9944
<b>Current ATHD (%):</b>	7.9%

### Test Condition

<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:35
<b>Total Operating Time (Hours):</b>	1:30

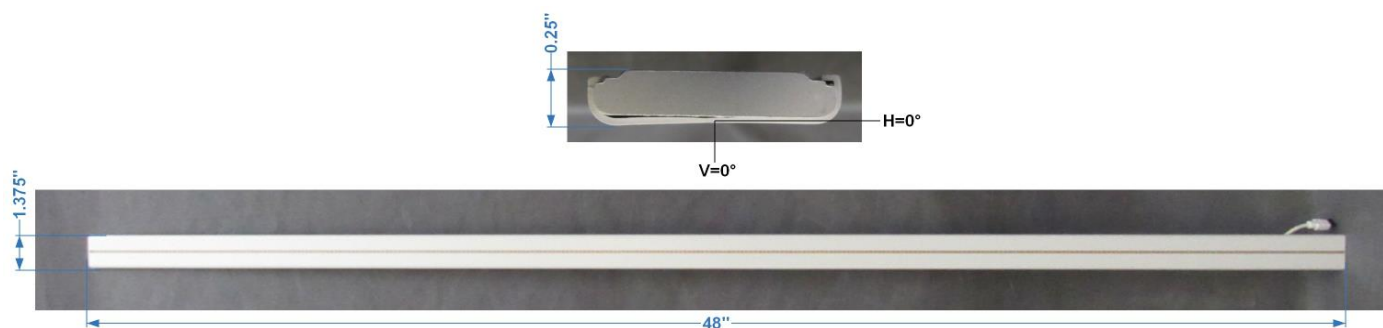
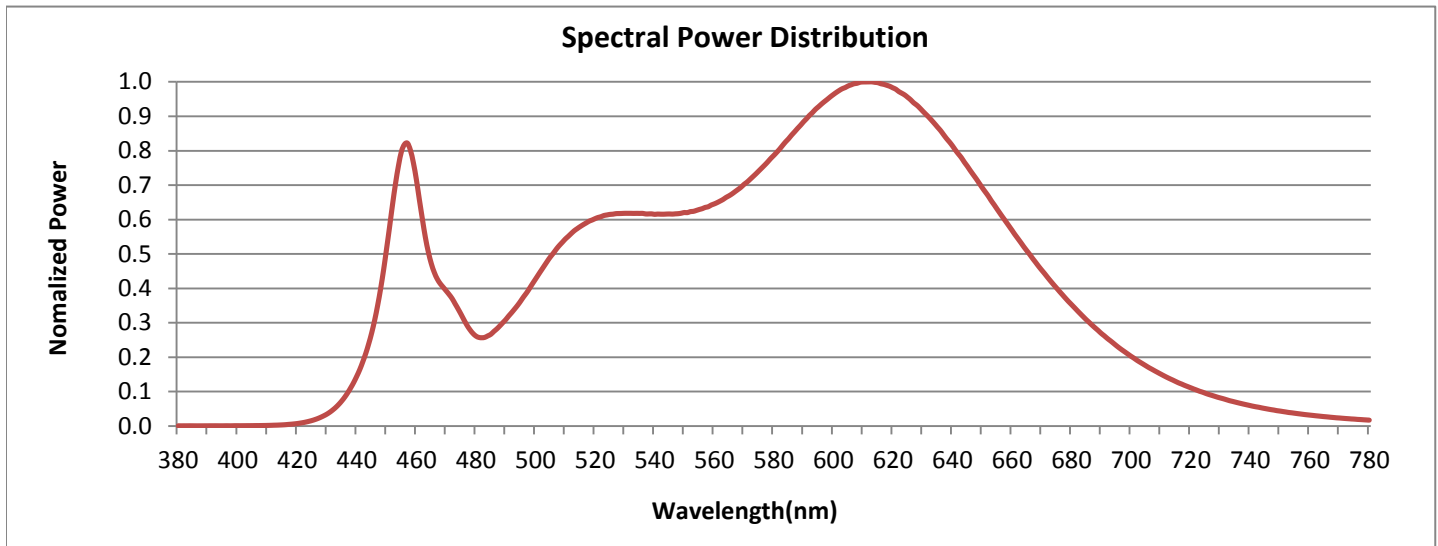


FIG. 1 LUMINAIRE

## Colorimetry Test Results

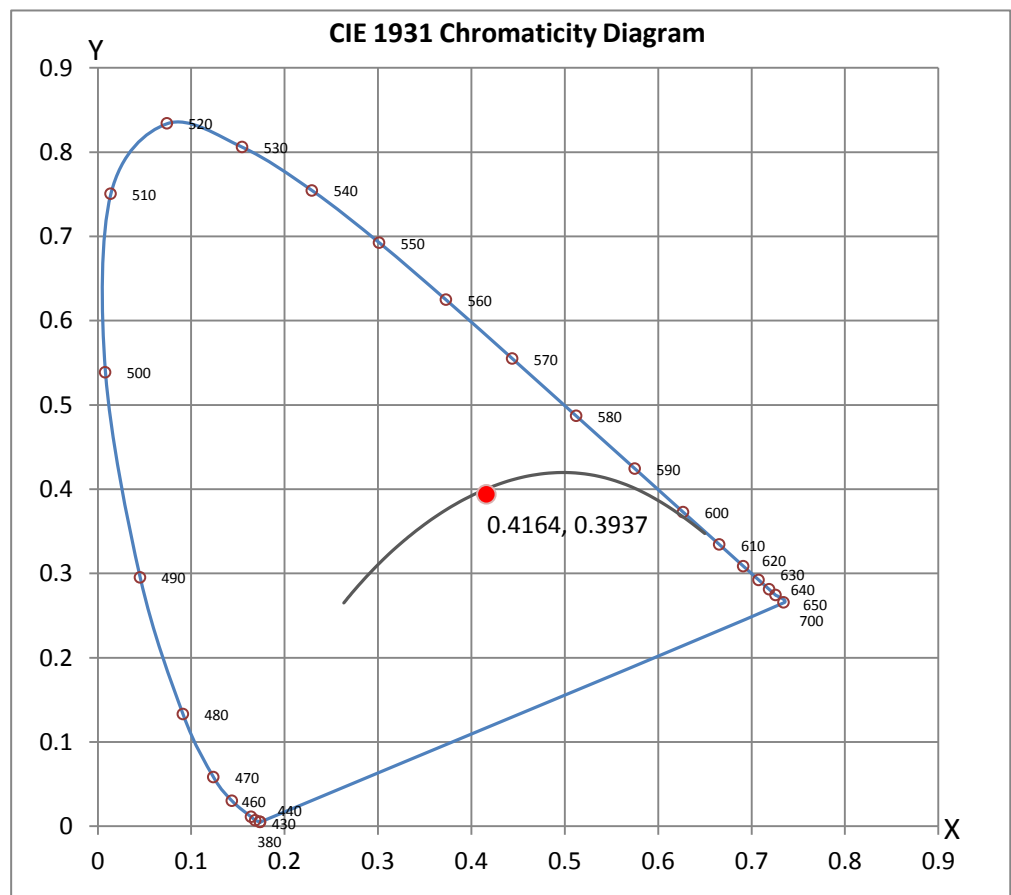


### CRI & CCT

x	0.4164
y	0.3937
u'	0.2417
v'	0.5141
CRI	93.30
CCT	3293
Duv	-0.00097

### R Values

R1	95.62
R2	99.17
R3	97.05
R4	95.33
R5	95.76
R6	95.39
R7	89.28
R8	79.19
R9	54.46
R10	97.92
R11	98.42
R12	77.77
R13	97.49
R14	99.31
R15	89.49





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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 : L121911523.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L121911523  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 1/6/2020  
[MANUFAC] Vode Lighting  
[LUMCAT] 707-Z2-48-Z-SO-359-S1-AL  
[LUMINAIRE] ZipTwo LED, 48", 3500K, 90 CRI, zipper board, 40° white symmetric lens,  
[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] 119.98VAC, 26.03W  
[TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	1403
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	54
Total Luminaire Watts	26.03
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.72
Spacing Criterion (90-270)	1.10
Spacing Criterion (Diagonal)	0.88
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.01 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	46045	78334	158960
55	34859	52289	104107
65	30049	40278	74163
75	26099	32363	53242
85	21701	24801	31002

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121911523.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>0.0</b>	1178	1178	1178	1178	1178	1178	1178	1178	1178	1178
<b>1.0</b>	1178	1178	1178	1178	1178	1178	1178	1178	1178	1178
<b>3.0</b>	1169	1169	1170	1170	1170	1170	1171	1171	1173	1173
<b>5.0</b>	1147	1147	1147	1148	1150	1151	1153	1155	1157	1159
<b>7.0</b>	1114	1114	1114	1117	1119	1122	1126	1131	1135	1140
<b>9.0</b>	1066	1067	1069	1072	1077	1082	1089	1096	1104	1112
<b>11.0</b>	1010	1010	1014	1018	1025	1033	1043	1054	1065	1077
<b>13.0</b>	943	945	949	955	964	975	988	1003	1018	1034
<b>15.0</b>	872	873	878	886	897	912	927	946	966	987
<b>17.0</b>	796	798	803	813	827	843	863	884	908	933
<b>19.5</b>	697	699	706	718	733	753	776	801	830	860
<b>22.5</b>	582	584	592	604	621	643	669	699	731	767
<b>25.5</b>	475	478	485	497	515	538	564	597	633	672
<b>29.0</b>	367	369	376	388	405	427	453	484	521	561
<b>33.0</b>	269	271	277	287	301	321	344	372	405	443
<b>37.5</b>	192	193	198	206	217	231	250	273	300	333
<b>42.5</b>	137	138	141	147	154	164	177	194	214	238
<b>47.5</b>	104	105	107	110	115	122	131	141	155	172
<b>55.0</b>	74	74	75	77	80	83	88	94	102	111
<b>65.0</b>	47	47	47	48	50	51	53	56	59	63
<b>75.0</b>	25	25	25	26	26	27	27	28	30	31
<b>85.0</b>	7	7	7	7	7	7	7	7	7	8
<b>90.0</b>	0	0	0	0	0	0	0	0	0	0

**Vert. Angles**      **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>
<b>0.0</b>	1178	1178	1178	1178	1178	1178	1178	1178	1178
<b>1.0</b>	1178	1178	1178	1178	1179	1178	1178	1178	1177
<b>3.0</b>	1174	1174	1175	1175	1175	1175	1177	1176	1176
<b>5.0</b>	1162	1164	1166	1168	1170	1171	1172	1173	1173
<b>7.0</b>	1144	1149	1154	1158	1161	1164	1166	1167	1167
<b>9.0</b>	1120	1128	1135	1142	1148	1152	1156	1159	1160
<b>11.0</b>	1088	1101	1112	1122	1130	1138	1143	1145	1147
<b>13.0</b>	1050	1067	1082	1097	1108	1119	1126	1131	1131
<b>15.0</b>	1008	1029	1049	1067	1083	1096	1106	1112	1114
<b>17.0</b>	959	985	1010	1033	1053	1069	1081	1089	1091
<b>19.5</b>	892	924	955	984	1009	1030	1046	1055	1057
<b>22.5</b>	806	843	881	916	946	973	993	1005	1007
<b>25.5</b>	714	757	799	840	876	906	931	945	949
<b>29.0</b>	605	652	697	742	783	819	844	861	866
<b>33.0</b>	486	532	579	627	669	706	734	752	758
<b>37.5</b>	369	410	453	497	537	573	600	618	623
<b>42.5</b>	266	298	332	369	403	433	457	472	478
<b>47.5</b>	192	215	240	267	293	318	336	349	354
<b>55.0</b>	122	135	150	165	182	197	210	218	221
<b>65.0</b>	68	74	80	88	95	103	110	114	116
<b>75.0</b>	33	35	38	41	44	47	49	51	51
<b>85.0</b>	8	8	9	9	9	10	10	10	10
<b>90.0</b>	0	0	0	0	0	0	0	0	0

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121911523.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	368.21	N.A.	26.30
0-30	676.67	N.A.	48.20
0-40	918.18	N.A.	65.50
0-60	1228.13	N.A.	87.60
0-80	1377.48	N.A.	98.20
0-90	1402.66	N.A.	100.00
10-90	1313.96	N.A.	93.70
20-40	549.96	N.A.	39.20
20-50	754.73	N.A.	53.80
40-70	404.75	N.A.	28.90
60-80	149.36	N.A.	10.60
70-80	54.56	N.A.	3.90
80-90	25.18	N.A.	1.80
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	1402.66	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	88.70
10-20	279.51
20-30	308.46
30-40	241.51
40-50	204.77
50-60	105.18
60-70	94.80
70-80	54.56
80-90	25.18
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



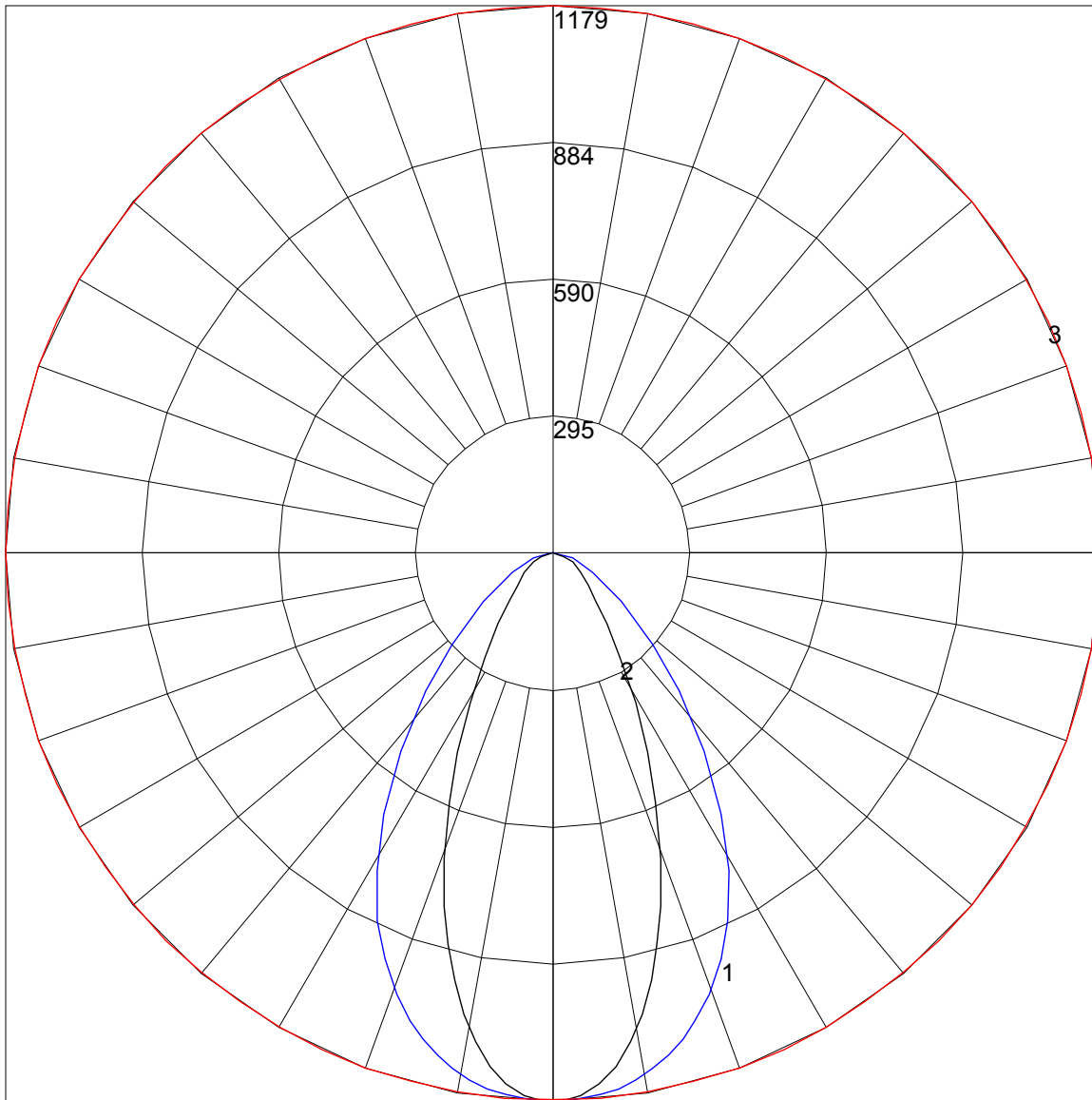
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121911523.IES**

**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	111	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88
2	103	96	90	86	100	94	89	85	91	86	83	88	84	81	85	82	79	77
3	96	87	80	75	93	85	79	74	83	77	73	80	75	72	78	74	71	69
4	89	79	72	66	87	78	71	66	76	70	65	73	68	64	71	67	63	62
5	83	73	65	59	82	72	64	59	70	63	59	68	62	58	66	61	57	56
6	78	67	59	54	76	66	59	54	64	58	53	63	57	53	61	56	52	51
7	73	62	54	49	72	61	54	49	60	53	49	58	53	48	57	52	48	46
8	69	58	50	45	68	57	50	45	56	49	45	55	49	45	53	48	44	43
9	65	54	47	42	64	53	46	42	52	46	41	51	45	41	50	45	41	40
10	62	50	43	39	61	50	43	39	49	43	39	48	42	38	47	42	38	37

POLAR GRAPH



Maximum Candela = 1179 Located At Horizontal Angle = 70, Vertical Angle = 1  
# 1 - Vertical Plane Through Horizontal Angles (70 - 250) (Through Max. Cd.)  
# 2 - Vertical Plane Through Horizontal Angles (0 - 180)  
# 3 - Horizontal Cone Through Vertical Angle (1) (Through Max. Cd.)