

## IES Report

# ZipTwo® | 707 | 120° Symmetric | 90 CRI | SO

707-Z2-4-48-XX-XX-X-0-Z-SO-359-S3-X-WH-0

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	113	117	119	121
Total Lumens, 4' rail length (1219mm)	2945	3038	3100	3131
Lumens per foot (305mm)	736	760	775	783
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: L121911526



**Report No:** L121911526

**Issue Date:** 1/7/2020

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

**Model Number:** 707-Z2-48-Z-SO-359-S3-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:** 1/3/19 - 1/7/19

**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-Z2-48-Z-SO-359-S3-AL
<b>Driver Model Number:</b>	MEAN WELL HLG-40H-36A

### Test Summary

<b>Total Lumens:</b>	3100.38
<b>Efficacy:</b>	118.93
<b>Color Redering Index:</b>	93.7
<b>Correlated Color Temperature:</b>	3301
<b>Input Voltage (VAC/60Hz):</b>	119.98
<b>Input Current (Amp):</b>	0.2185
<b>Input Power (W):</b>	26.07
<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>	1:25

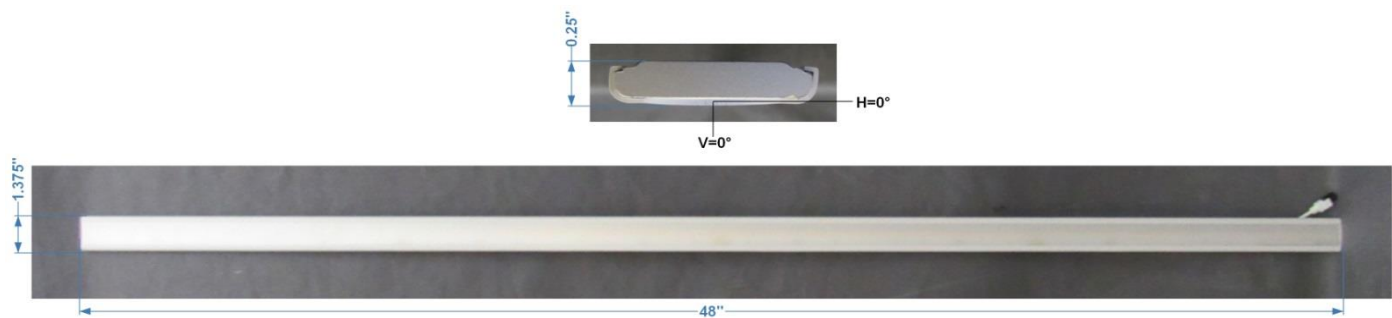
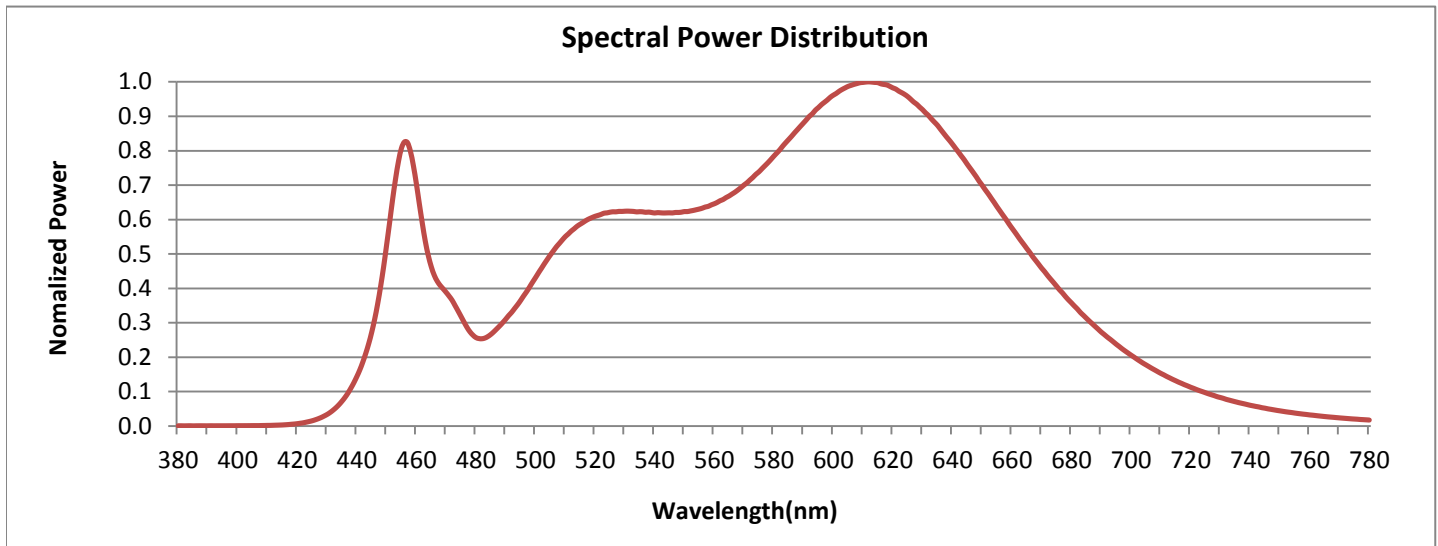


FIG. 1 LUMINAIRE

## Colorimetry Test Results

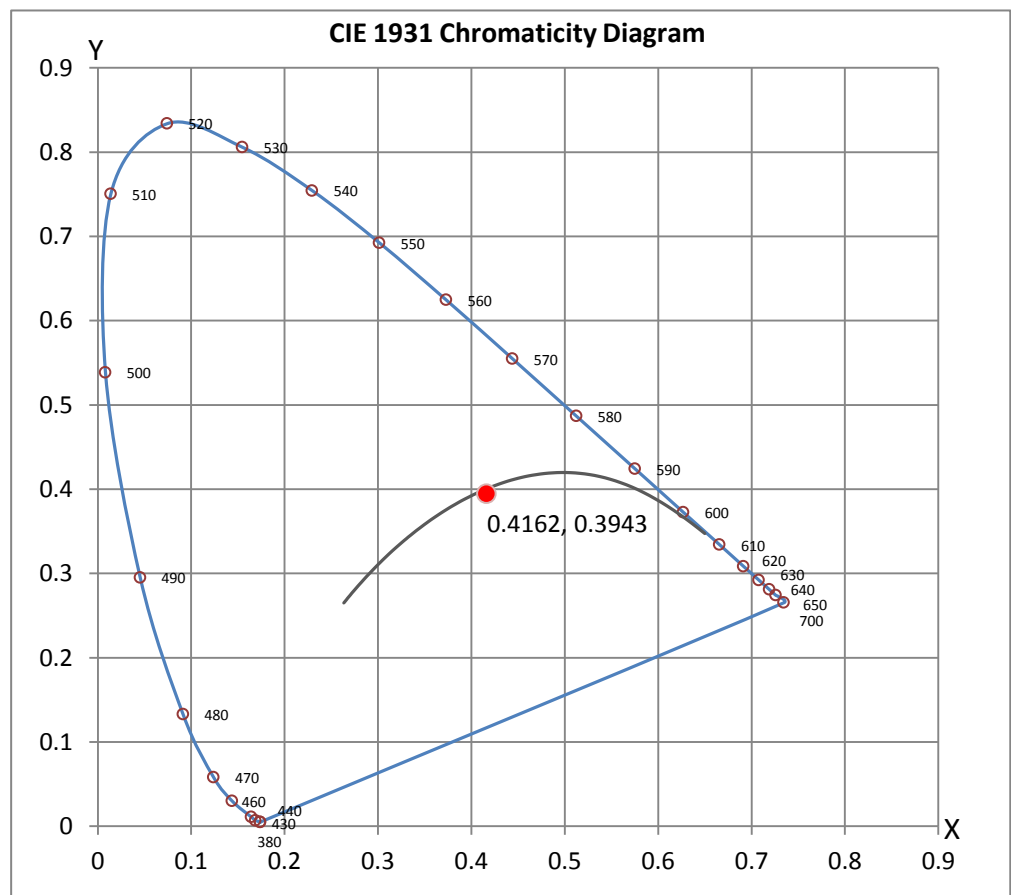


### CRI & CCT

x	0.4162
y	0.3943
u'	0.2413
v'	0.5144
CRI	93.70
CCT	3301
Duv	-0.00068

### R Values

R1	95.90
R2	99.18
R3	97.41
R4	95.83
R5	96.01
R6	95.55
R7	89.74
R8	79.92
R9	55.81
R10	97.87
R11	98.48
R12	77.71
R13	97.70
R14	99.45
R15	89.81





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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*



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

## Photometric Test Report

### IES INDOOR REPORT

PHOTOMETRIC FILENAME : L121911526.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L121911526  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 1/7/2020  
[MANUFAC] Vode Lighting  
[LUMCAT] 707-Z2-48-Z-SO-359-S3-AL  
[LUMINAIRE] ZipTwo LED, 48", 3500K, 90 CRI, zipper board, 120° 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, 26.07W  
[TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3100
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	119
Total Luminaire Watts	26.07
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.66
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.56
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.07 ft
Luminous Width (90-270)	3.97 ft
Luminous Height	0.00 ft

### LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	51935	45313	31084
55	47496	43043	29955
65	37358	35893	27561
75	24221	24221	21231
85	15096	13764	11100

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121911526.IES**

**CANDELA TABULATION**

	<b>0</b>	<b>5</b>	<b>10</b>	<b>15</b>	<b>20</b>	<b>25</b>	<b>30</b>	<b>35</b>	<b>40</b>	<b>45</b>
<b>0</b>	949	949	949	949	949	949	949	949	949	949
<b>5</b>	957	957	957	956	956	955	953	953	951	950
<b>10</b>	987	987	985	982	980	976	972	967	962	957
<b>15</b>	1031	1030	1028	1023	1016	1008	999	988	977	965
<b>20</b>	1077	1076	1071	1064	1055	1042	1027	1010	992	972
<b>25</b>	1109	1107	1102	1094	1081	1065	1047	1025	1000	974
<b>30</b>	1114	1113	1108	1099	1087	1070	1049	1025	996	964
<b>35</b>	1090	1089	1084	1076	1064	1048	1028	1003	973	939
<b>40</b>	1034	1033	1029	1022	1013	999	981	958	928	894
<b>45</b>	949	948	945	940	933	922	907	887	861	828
<b>50</b>	837	837	836	833	828	820	809	793	771	742
<b>55</b>	704	704	703	703	700	696	689	678	661	638
<b>60</b>	557	557	558	558	558	557	553	546	535	519
<b>65</b>	408	408	409	410	412	412	411	408	402	392
<b>70</b>	271	272	273	274	275	277	277	276	273	268
<b>75</b>	162	163	163	164	165	165	166	165	164	162
<b>80</b>	86	86	86	87	87	87	87	86	85	84
<b>85</b>	34	34	34	34	34	34	33	33	32	31
<b>90</b>	0	0	0	0	0	0	0	0	0	0

**Vert. Angles**      **Horizontal Angles**

	<b>50</b>	<b>55</b>	<b>60</b>	<b>65</b>	<b>70</b>	<b>75</b>	<b>80</b>	<b>85</b>	<b>90</b>
<b>0</b>	949	949	949	949	949	949	949	949	949
<b>5</b>	950	948	947	946	945	945	944	944	944
<b>10</b>	951	946	941	937	932	930	927	926	925
<b>15</b>	952	941	930	920	911	904	899	896	895
<b>20</b>	952	932	913	896	881	869	860	855	853
<b>25</b>	945	917	890	864	844	826	813	806	803
<b>30</b>	929	894	859	826	799	776	760	751	748
<b>35</b>	899	859	819	780	748	722	703	692	689
<b>40</b>	854	811	768	727	692	664	644	633	629
<b>45</b>	790	748	705	664	630	602	583	572	568
<b>50</b>	708	670	630	593	562	537	520	510	507
<b>55</b>	609	577	544	513	488	468	454	446	444
<b>60</b>	497	473	448	425	407	393	383	377	375
<b>65</b>	378	363	347	333	321	312	306	303	301
<b>70</b>	261	253	245	238	232	227	224	223	222
<b>75</b>	159	155	152	148	146	144	143	142	142
<b>80</b>	82	80	79	77	76	75	74	74	74
<b>85</b>	30	29	28	27	26	26	25	25	25
<b>90</b>	0	0	0	0	0	0	0	0	0

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121911526.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	364.08	N.A.	11.70
0-30	808.57	N.A.	26.10
0-40	1377.89	N.A.	44.40
0-60	2521.83	N.A.	81.30
0-80	3061.66	N.A.	98.80
0-90	3100.38	N.A.	100.00
10-90	3009.46	N.A.	97.10
20-40	1013.82	N.A.	32.70
20-50	1621.29	N.A.	52.30
40-70	1512.06	N.A.	48.80
60-80	539.83	N.A.	17.40
70-80	171.70	N.A.	5.50
80-90	38.72	N.A.	1.20
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	3100.38	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	90.92
10-20	273.16
20-30	444.50
30-40	569.32
40-50	607.48
50-60	536.46
60-70	368.12
70-80	171.70
80-90	38.72
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



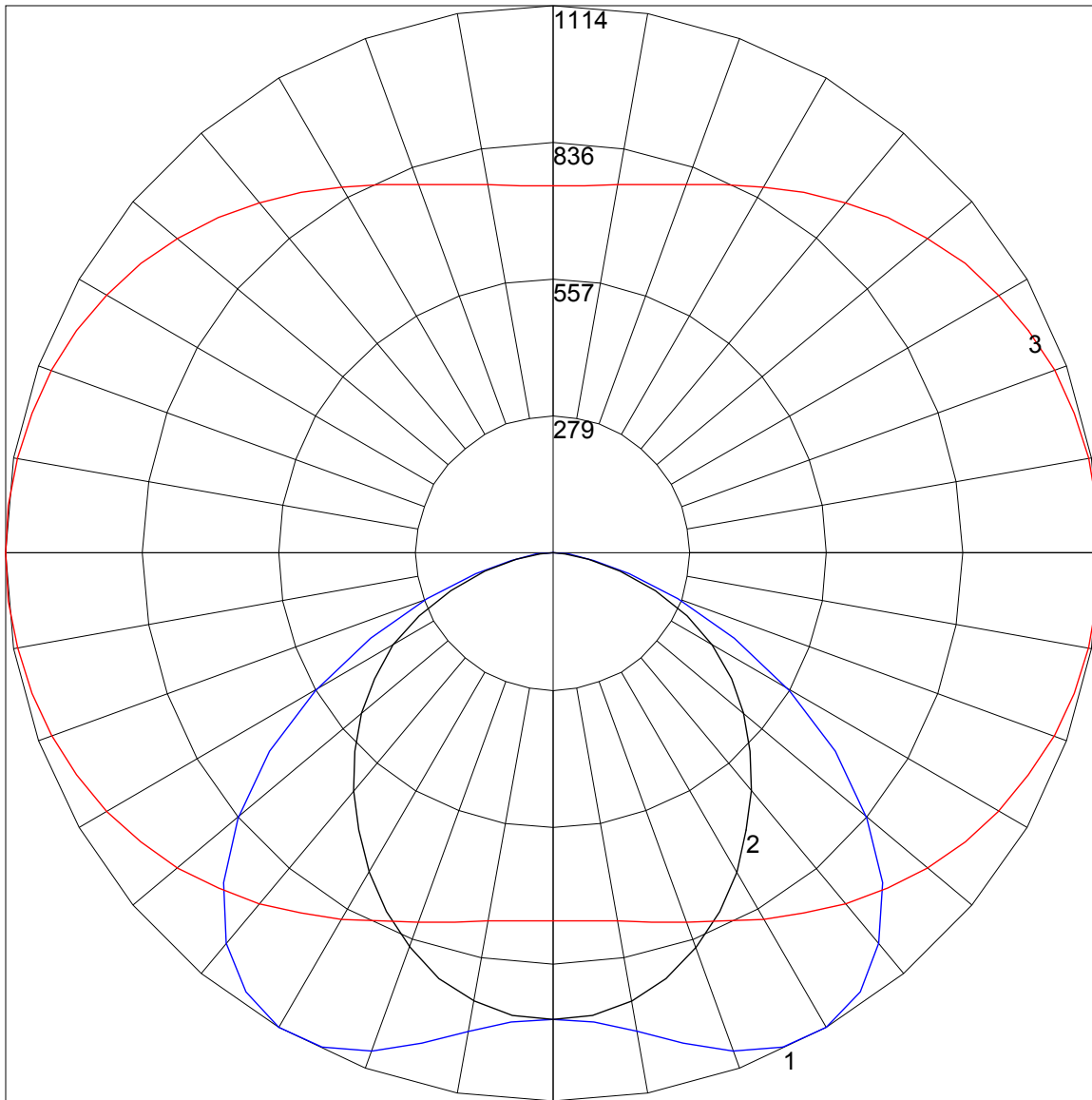
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121911526.IES**

**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	109	105	100	97	106	102	98	95	98	95	92	94	92	89	91	88	87	85
2	99	91	85	79	97	89	83	78	86	81	76	83	78	74	79	76	73	71
3	90	80	72	65	88	78	71	65	75	69	64	73	67	63	70	66	62	59
4	83	71	62	55	80	69	61	55	67	60	54	65	58	53	62	57	53	51
5	76	63	54	47	74	62	53	47	60	52	47	58	51	46	56	50	46	43
6	70	57	48	41	68	56	47	41	54	46	41	52	45	40	51	45	40	38
7	65	51	42	36	63	50	42	36	49	41	36	47	41	35	46	40	35	33
8	60	47	38	32	59	46	38	32	45	37	32	43	37	32	42	36	31	29
9	56	43	34	29	55	42	34	29	41	34	28	40	33	28	39	33	28	26
10	53	39	31	26	51	39	31	26	38	31	26	37	30	26	36	30	25	24

POLAR GRAPH



Maximum Candela = 1114 Located At Horizontal Angle = 0, Vertical Angle = 30

# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)

# 2 - Vertical Plane Through Horizontal Angles (90 - 270)

# 3 - Horizontal Cone Through Vertical Angle (30) (Through Max. Cd.)