

IES Report

ZipTwo® | 707 | 60° Symmetric | 90 CRI | SO

707-Z2-4-48-XX-XX-X-0-Z-SO-359-S2-X-WH-0

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	79	81	83	84
Total Lumens, 4' rail length (1219mm)	2047	2112	2155	2176
Lumens per foot (305mm)	512	528	539	544
Input Power (W), 4' rail length (1219mm)	26.2	26.2	26.2	26.2
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: L121911524



Report No: L121911524

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-S2-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

Manufacturer:	Vode Lighting
Model Number:	707-Z2-48-Z-SO-359-S2-AL
Driver Model Number:	MEAN WELL HLG-40H-36A

Test Summary

Total Lumens:	2154.84
Efficacy:	82.66
Color Redering Index:	93.5
Correlated Color Temperature:	3335
Input Voltage (VAC/60Hz):	120.02
Input Current (Amp):	0.2184
Input Power (W):	26.07
Input Power Factor:	0.9944
Current ATHD (%):	7.9%

Test Condition

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

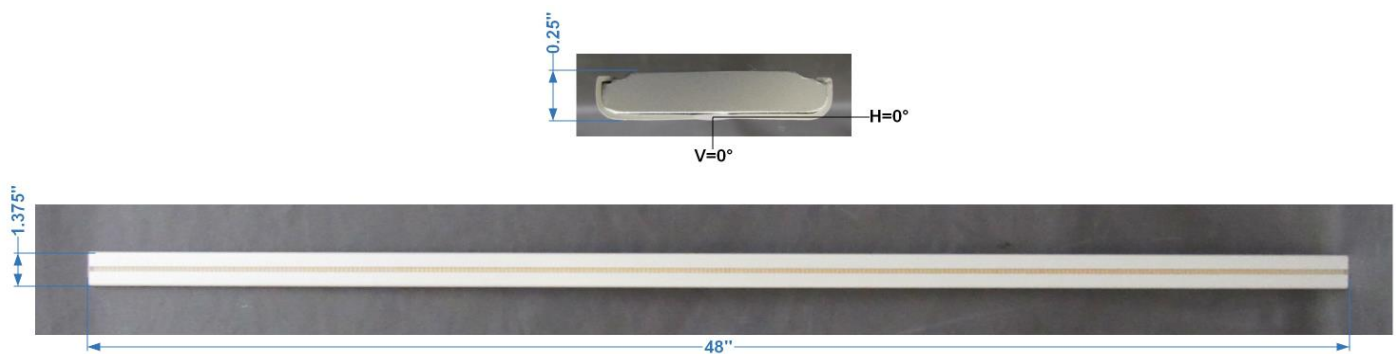
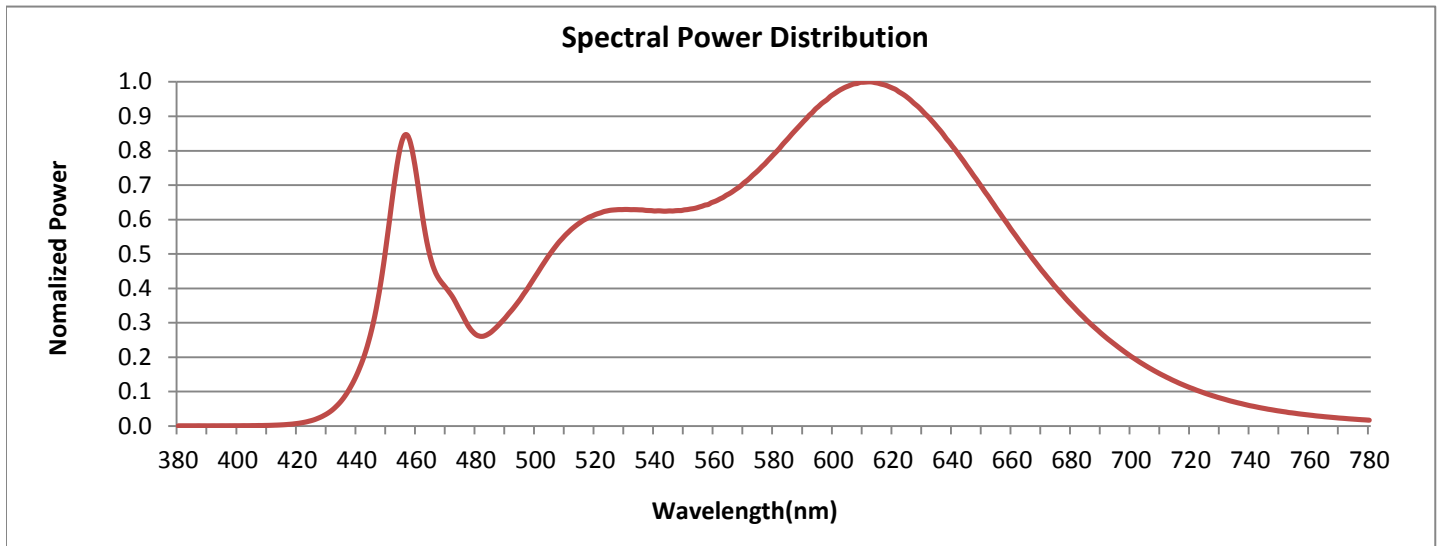


FIG. 1 LUMINAIRE

Colorimetry Test Results

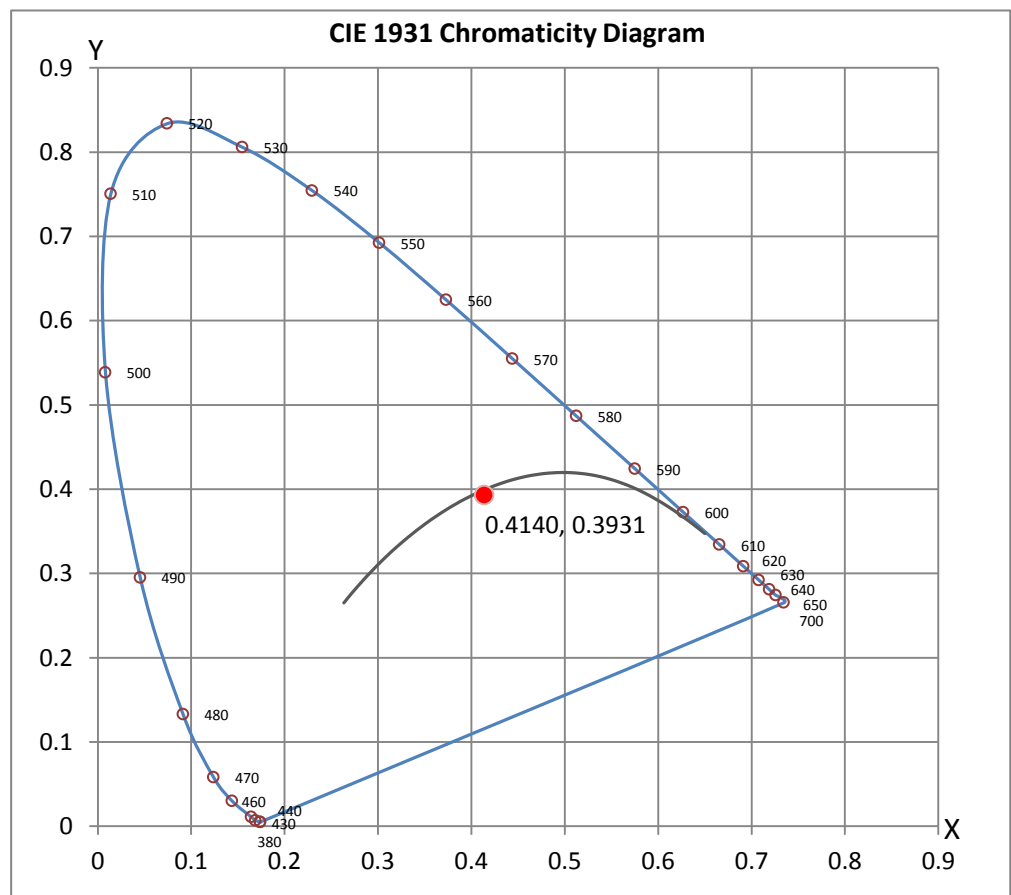


CRI & CCT

x	0.4140
y	0.3931
u'	0.2404
v'	0.5135
CRI	93.50
CCT	3335
Duv	-0.00077

R Values

R1	95.75
R2	99.16
R3	97.29
R4	95.50
R5	95.80
R6	95.51
R7	89.58
R8	79.68
R9	55.25
R10	97.80
R11	98.47
R12	77.33
R13	97.59
R14	99.42
R15	89.71





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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 : L121911524.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L121911524
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 1/6/2020
[MANUFAC] Vode Lighting
[LUMCAT] 707-Z2-48-Z-SO-359-S2-AL
[LUMINAIRE] ZipTwo LED, 48", 3500K, 90 CRI, zipper board, 60° 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] 120.02VAC, 26.07W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2155
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	83
Total Luminaire Watts	26.07
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.94
Spacing Criterion (90-270)	1.14
Spacing Criterion (Diagonal)	1.04
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.02 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	41651	72889	111291
55	25438	42397	76549
65	19820	29729	55623
75	17225	22967	40192
85	15501	18601	24801

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121911524.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	1459	1459	1459	1459	1459	1459	1459	1459	1459	1459
1.0	1459	1459	1459	1459	1459	1459	1459	1459	1459	1459
3.0	1457	1457	1457	1457	1457	1457	1457	1457	1457	1457
5.0	1451	1451	1451	1451	1451	1452	1452	1452	1452	1452
7.0	1442	1442	1442	1442	1443	1443	1443	1445	1445	1444
9.0	1426	1426	1427	1427	1428	1429	1430	1431	1432	1433
11.0	1404	1404	1405	1406	1408	1410	1412	1414	1416	1417
13.0	1374	1374	1375	1377	1380	1383	1387	1390	1394	1397
15.0	1334	1334	1336	1340	1344	1349	1355	1361	1366	1371
17.0	1283	1285	1288	1293	1299	1307	1315	1324	1332	1340
19.5	1202	1204	1209	1216	1227	1238	1251	1265	1278	1290
22.5	1082	1084	1092	1103	1118	1136	1156	1176	1196	1215
25.5	941	944	953	968	988	1012	1039	1067	1096	1123
29.0	765	768	779	797	821	850	884	920	958	994
33.0	573	577	588	606	630	663	699	740	784	828
37.5	396	399	409	424	446	475	508	549	594	639
42.5	260	262	269	280	296	318	344	376	413	452
47.5	176	177	182	189	200	215	233	255	281	311
55.0	108	108	111	115	121	128	138	149	164	180
65.0	62	63	64	65	68	71	75	80	86	93
75.0	33	33	33	34	35	36	37	39	41	44
85.0	10	10	10	10	11	11	11	11	11	12
90.0	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>
0.0	1459	1459	1459	1459	1459	1459	1459	1459	1459
1.0	1459	1459	1459	1459	1459	1459	1459	1459	1459
3.0	1457	1457	1457	1457	1457	1457	1457	1457	1457
5.0	1453	1453	1453	1453	1453	1453	1453	1453	1454
7.0	1446	1446	1446	1447	1447	1447	1447	1447	1447
9.0	1434	1435	1436	1436	1437	1437	1437	1438	1437
11.0	1419	1421	1422	1423	1423	1424	1424	1425	1425
13.0	1400	1402	1404	1406	1407	1407	1408	1408	1408
15.0	1376	1380	1382	1385	1386	1387	1387	1388	1388
17.0	1347	1352	1357	1360	1362	1363	1363	1364	1364
19.5	1300	1309	1316	1320	1323	1325	1326	1325	1325
22.5	1232	1245	1256	1263	1268	1270	1271	1271	1271
25.5	1147	1167	1182	1193	1200	1203	1204	1204	1204
29.0	1028	1056	1078	1094	1103	1108	1110	1111	1111
33.0	872	908	939	960	974	982	985	986	986
37.5	686	729	765	793	812	824	830	832	832
42.5	494	536	574	605	629	644	654	659	660
47.5	344	378	411	440	465	483	496	503	505
55.0	199	220	242	264	284	302	315	323	325
65.0	101	111	122	133	145	156	165	171	174
75.0	47	51	55	60	65	69	73	76	77
85.0	12	13	13	14	14	15	15	16	16
90.0	0	0	0	0	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121911524.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	496.97	N.A.	23.10
0-30	977.57	N.A.	45.40
0-40	1381.99	N.A.	64.10
0-60	1895.14	N.A.	87.90
0-80	2118.35	N.A.	98.30
0-90	2154.84	N.A.	100.00
10-90	2042.91	N.A.	94.80
20-40	885.02	N.A.	41.10
20-50	1229.32	N.A.	57.00
40-70	657.17	N.A.	30.50
60-80	223.22	N.A.	10.40
70-80	79.19	N.A.	3.70
80-90	36.48	N.A.	1.70
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	2154.84	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	111.93
10-20	385.05
20-30	480.60
30-40	404.42
40-50	344.30
50-60	168.84
60-70	144.03
70-80	79.19
80-90	36.48
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

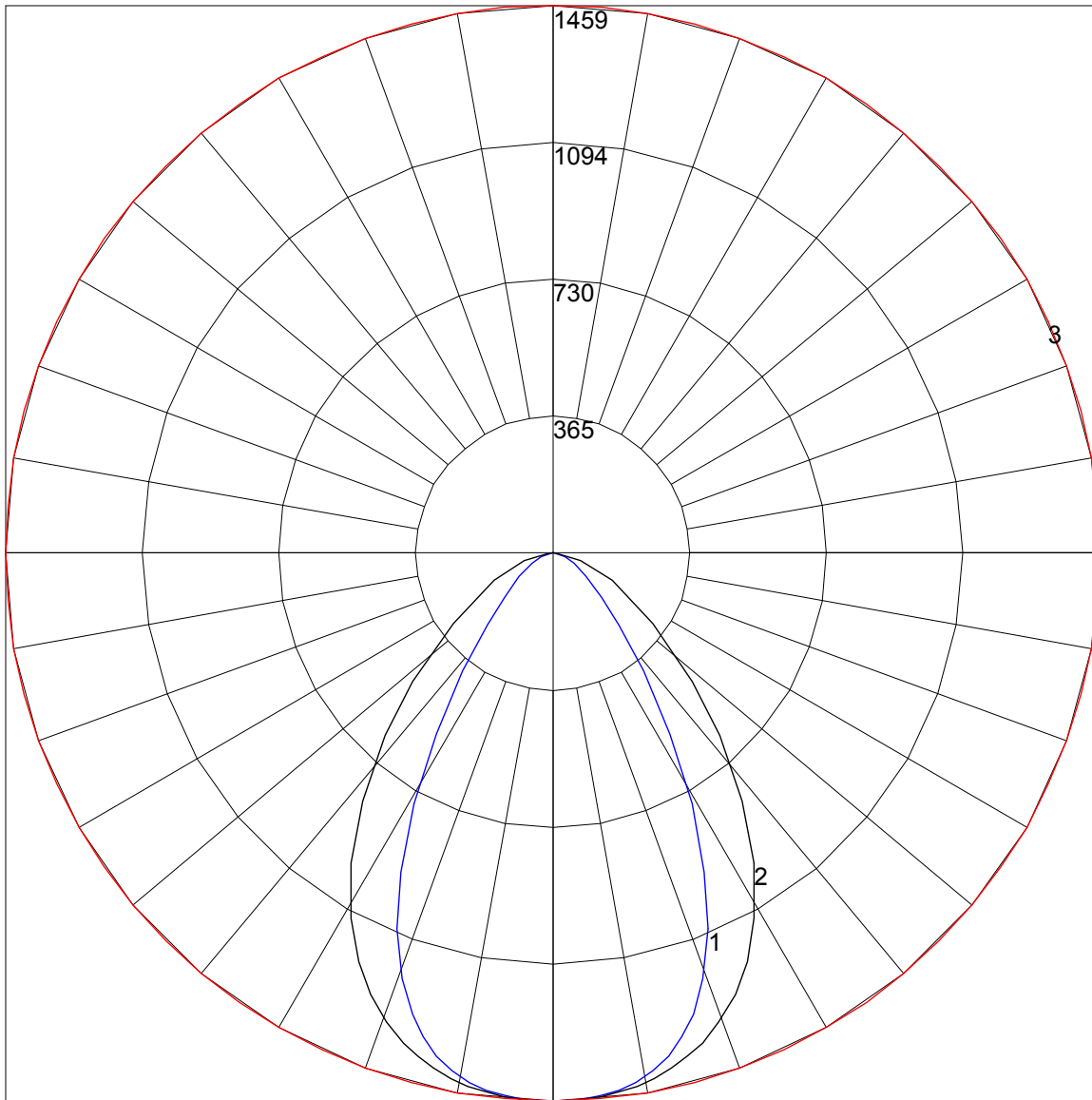
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	107	103	100	108	104	101	98	100	98	95	96	94	92	93	91	90	88
2	103	96	90	85	100	94	89	84	90	86	82	87	84	81	84	81	79	77
3	95	86	80	74	93	85	79	74	82	77	72	79	75	71	77	73	70	68
4	89	79	71	65	87	77	70	65	75	69	64	73	68	63	71	66	63	61
5	83	72	64	58	81	71	63	58	69	62	58	67	61	57	65	60	56	55
6	77	66	58	53	76	65	58	52	63	57	52	62	56	52	60	55	51	49
7	73	61	53	48	71	60	53	48	59	52	47	57	51	47	56	51	47	45
8	68	56	49	44	67	56	48	44	54	48	43	53	47	43	52	47	43	41
9	64	52	45	40	63	52	45	40	51	44	40	50	44	40	49	43	39	38
10	61	49	42	37	59	48	42	37	47	41	37	47	41	37	46	40	37	35

POLAR GRAPH



Maximum Candela = 1459 Located At Horizontal Angle = 0, Vertical Angle = 0

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 (0) (Through Max. Cd.)