



## IES Report

# ZipTwo® | 707 | Micro 3508, 120° Symmetric | 90 CRI | SO

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

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	110	113	116	117
Total Lumens, 4' rail length (1219mm)	2859	2949	3009	3039
Lumens per foot (305mm)	715	737	752	760
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: L121911530



**Report No:** L121911530

**Issue Date:** 1/13/2020

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

**Model Number:** 707-Z2-48-Z-SO-359-S3-BL

**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:** 1/8/20 - 1/13/20

**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-S3-BL
<b>Driver Model Number:</b>	MEAN WELL HLG-40H-36A

### Test Summary

<b>Total Lumens:</b>	3009.03
<b>Efficacy:</b>	115.17
<b>Color Redering Index:</b>	93.7
<b>Correlated Color Temperature:</b>	3316
<b>Input Voltage (VAC/60Hz):</b>	120.01
<b>Input Current (Amp):</b>	0.2189
<b>Input Power (W):</b>	26.13
<b>Input Power Factor:</b>	0.9944
<b>Current ATHD (%):</b>	7.8%

### Test Condition

<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:40
<b>Total Operating Time (Hours):</b>	1:40

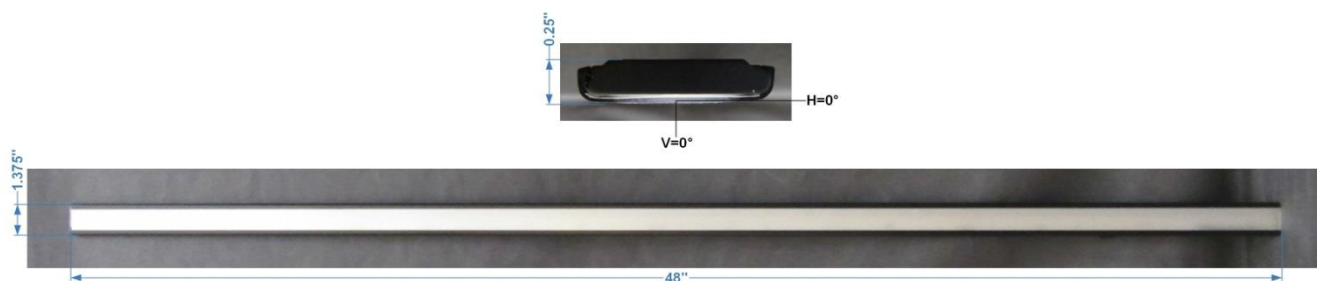
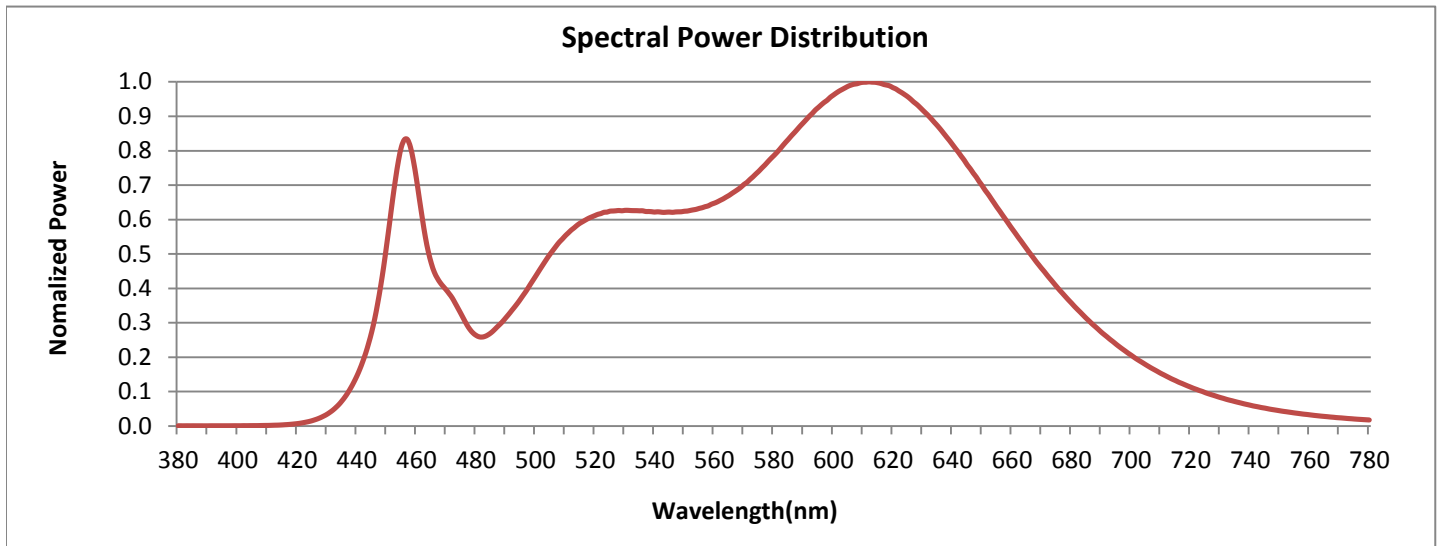


FIG. 1 LUMINAIRE

## Colorimetry Test Results

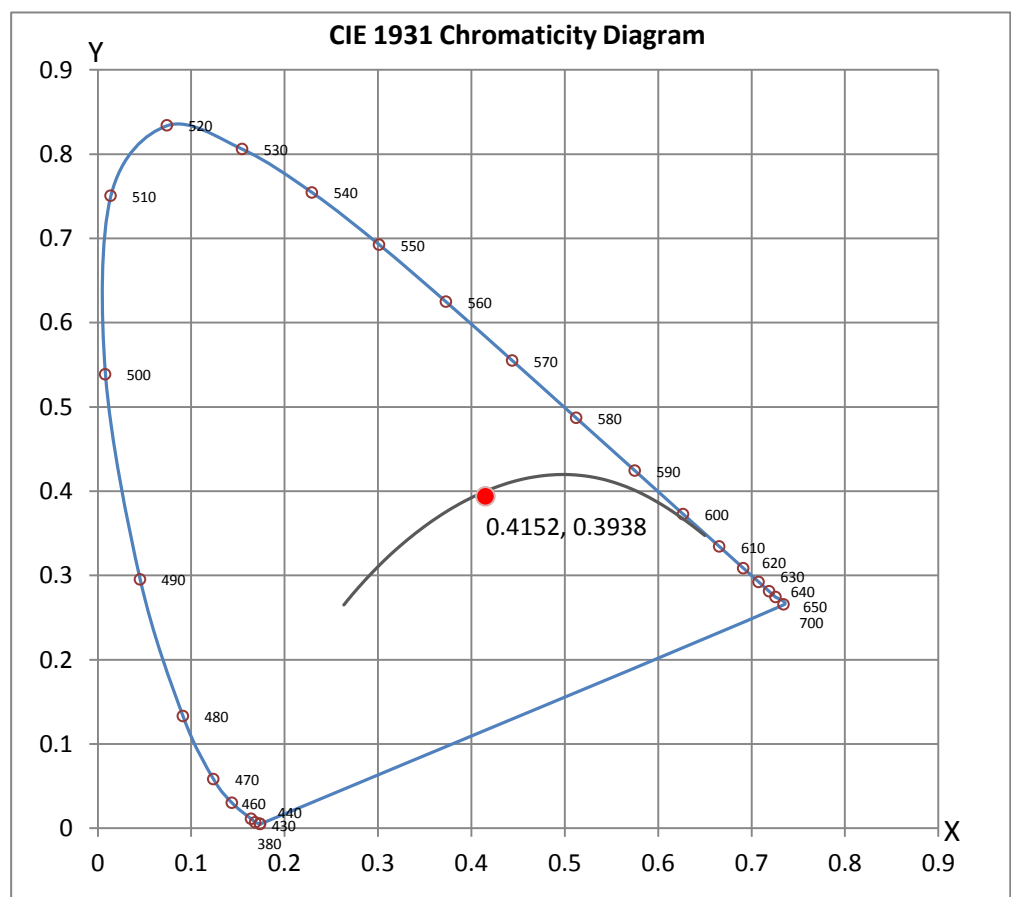


### CRI & CCT

x	0.4152
y	0.3938
u'	0.2409
v'	0.5140
CRI	93.70
CCT	3316
Duv	-0.00070

### R Values

R1	95.98
R2	99.28
R3	97.29
R4	95.80
R5	96.05
R6	95.44
R7	89.69
R8	80.01
R9	56.11
R10	98.15
R11	98.55
R12	77.66
R13	97.81
R14	99.39
R15	89.93





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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 : L121911530.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L121911530  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 1/13/2020  
[MANUFAC] Vode Lighting  
[LUMCAT] 707-Z2-48-Z-SO-359-S3-BL  
[LUMINAIRE] ZipTwo LED, 48", 3500K, 90 CRI, zipper board, micro 3508, 120° symmetric black lens,  
[MORE] standard output, black 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] 120.01VAC, 26.13W  
[TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3009
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	115
Total Luminaire Watts	26.13
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.68
Spacing Criterion (90-270)	1.18
Spacing Criterion (Diagonal)	1.58
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	50712	44216	30078
55	46233	41926	28937
65	36077	34707	26670
75	22967	22967	20134
85	13286	12401	10186

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121911530.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>	917	917	917	917	917	917	917	917	917	917
<b>5</b>	925	925	925	924	924	923	922	921	920	919
<b>10</b>	954	953	952	950	947	943	939	935	930	924
<b>15</b>	999	997	994	990	983	975	966	956	944	933
<b>20</b>	1045	1044	1039	1032	1023	1010	995	978	960	940
<b>25</b>	1081	1079	1074	1065	1053	1037	1019	996	970	944
<b>30</b>	1090	1089	1084	1075	1062	1044	1024	998	969	937
<b>35</b>	1068	1067	1062	1054	1042	1026	1006	981	949	914
<b>40</b>	1013	1012	1009	1002	992	979	960	937	907	873
<b>45</b>	929	928	925	921	914	903	889	868	842	810
<b>50</b>	818	818	817	814	809	802	792	775	753	725
<b>55</b>	687	687	686	686	684	680	673	662	645	623
<b>60</b>	542	542	542	543	543	542	539	532	521	505
<b>65</b>	395	395	396	397	399	399	398	396	389	380
<b>70</b>	260	261	262	263	264	266	266	265	262	258
<b>75</b>	154	154	154	155	156	157	157	157	156	154
<b>80</b>	79	80	80	80	80	80	80	80	79	78
<b>85</b>	30	30	30	30	30	30	30	29	29	28
<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>	917	917	917	917	917	917	917	917	917
<b>5</b>	918	917	916	915	914	913	913	913	912
<b>10</b>	919	914	910	906	902	899	897	895	895
<b>15</b>	921	909	899	889	881	874	869	867	865
<b>20</b>	920	901	882	866	852	840	832	827	825
<b>25</b>	915	887	861	836	815	799	787	779	777
<b>30</b>	902	866	832	800	773	751	736	726	723
<b>35</b>	875	834	794	757	725	699	681	670	666
<b>40</b>	833	790	746	706	671	643	624	612	609
<b>45</b>	771	729	686	646	611	584	565	554	551
<b>50</b>	691	652	613	577	545	521	505	495	491
<b>55</b>	594	562	529	499	474	454	441	433	430
<b>60</b>	484	460	436	414	395	381	371	366	364
<b>65</b>	366	351	336	322	311	302	296	293	292
<b>70</b>	251	243	235	228	223	219	216	214	214
<b>75</b>	150	147	144	141	138	137	136	135	135
<b>80</b>	76	74	73	71	70	69	69	69	69
<b>85</b>	27	26	25	24	24	24	23	23	23
<b>90</b>	0	0	0	0	0	0	0	0	0

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121911530.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	352.11	N.A.	11.70
0-30	783.56	N.A.	26.00
0-40	1338.43	N.A.	44.50
0-60	2454.04	N.A.	81.60
0-80	2973.66	N.A.	98.80
0-90	3009.03	N.A.	100.00
10-90	2921.14	N.A.	97.10
20-40	986.32	N.A.	32.80
20-50	1579.17	N.A.	52.50
40-70	1472.08	N.A.	48.90
60-80	519.63	N.A.	17.30
70-80	163.15	N.A.	5.40
80-90	35.37	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	3009.03	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	87.89
10-20	264.22
20-30	431.44
30-40	554.87
40-50	592.85
50-60	522.75
60-70	356.47
70-80	163.15
80-90	35.37
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



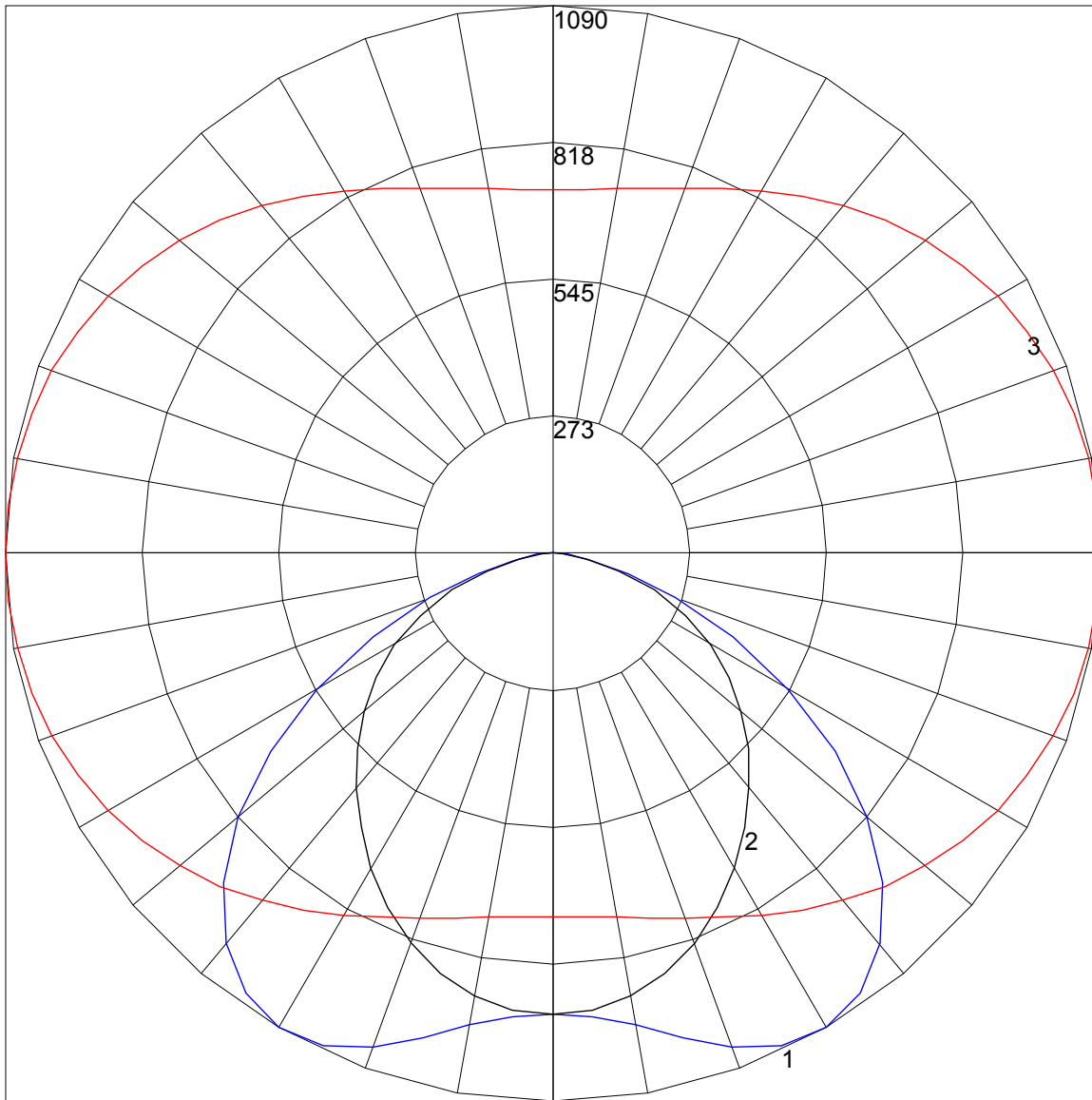
**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L121911530.IES**

**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	99	95	98	95	92	94	92	89	91	89	87	85
2	99	91	85	79	97	89	83	78	86	81	76	83	78	74	80	76	73	71
3	91	80	72	66	88	79	71	65	76	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	54	47	60	52	47	58	51	46	56	50	46	44
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	36	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	29	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 = 1090 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.)