



## IES Report

**ZipThree® | Ceiling Cable | 707 | Symmetric with EdgeGlow, up | 80° Symmetric, down | 90 CRI | SO**

**707-Z3-XX-4-48-CC-XX-XX-XX-X-0-Z-SO-359-U2S7-0-BL-X**

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	103	106	108	112
Total Lumens, 4' rail length (1219mm)	5345	5514	5627	5683
Lumens per foot (305mm)	1336	1379	1407	1421
Lumens per foot UP (305mm)	518	534	545	550
Lumens per foot DOWN (305mm)	819	845	862	871
Input Power (W), 4' rail length (1219mm)	52.2	52.2	52.2	52.2
Watts per foot (305mm)	13.1	13.1	13.1	13.1
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](http://vode.com).



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

Report No: L022010922



**Report No:** L022010922

**Issue Date:** 2/28/2020

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

**Model Number:** 707-Z3-48-Z-CC-SO-359-U2S7-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:** 2/20/20

**Date of Tests:** 2/20/20 - 2/28/20

**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-Z3-48-Z-CC-SO-359-U2S7-BL
<b>Driver Model Number:</b>	MEAN WELL HLG-40H-36A (2 DRIVERS)

### Test Summary

<b>Total Lumens:</b>	5626.61
<b>Efficacy:</b>	108.89
<b>Color Redering Index:</b>	94.8
<b>Correlated Color Temperature:</b>	3444
<b>Input Voltage (VAC/60Hz):</b>	120.06
<b>Input Current (Amp):</b>	0.4330
<b>Input Power (W):</b>	51.67
<b>Input Power Factor:</b>	0.9934
<b>Current ATHD (%):</b>	8.1%

### Test Condition

<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:45
<b>Total Operating Time (Hours):</b>	2:50

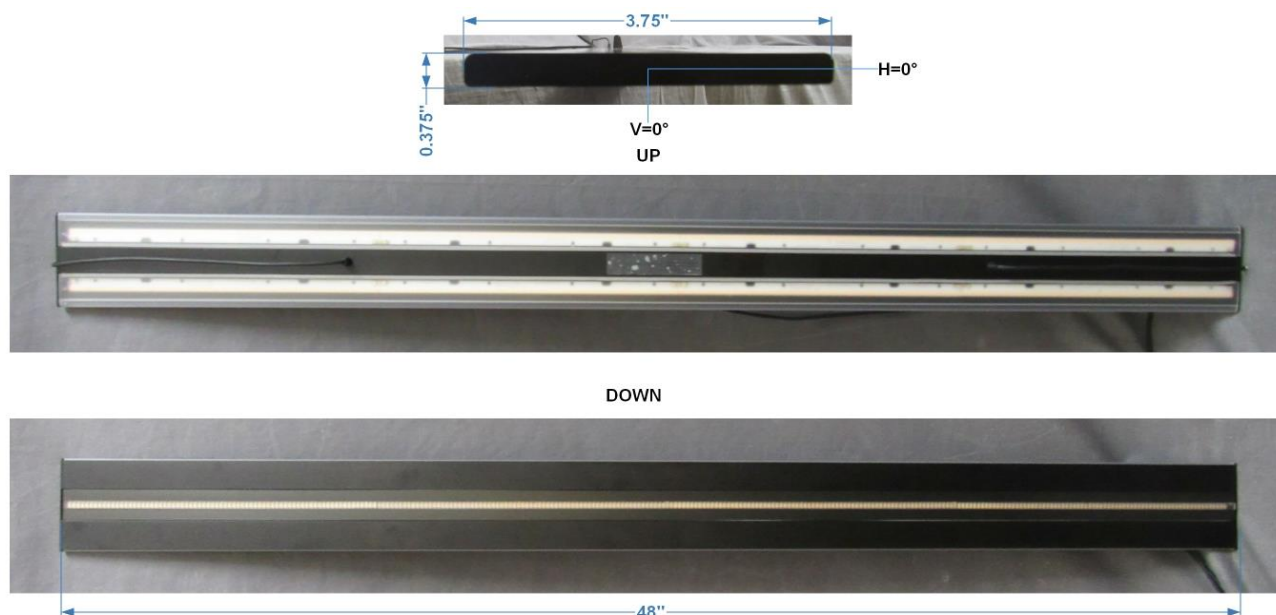
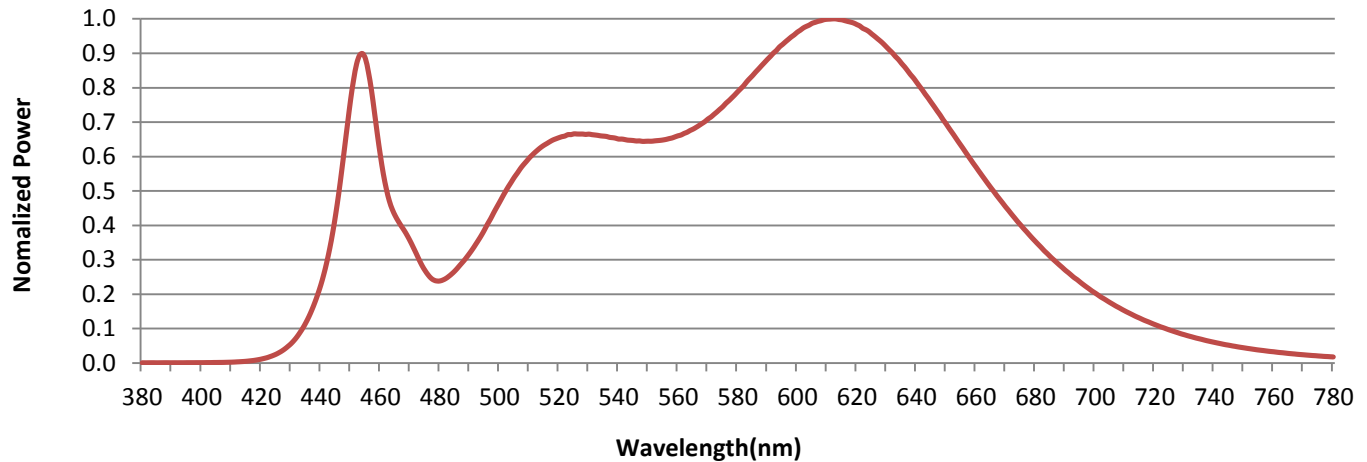


FIG. 1 LUMINAIRE

## Colorimetry Test Results

**Spectral Power Distribution**



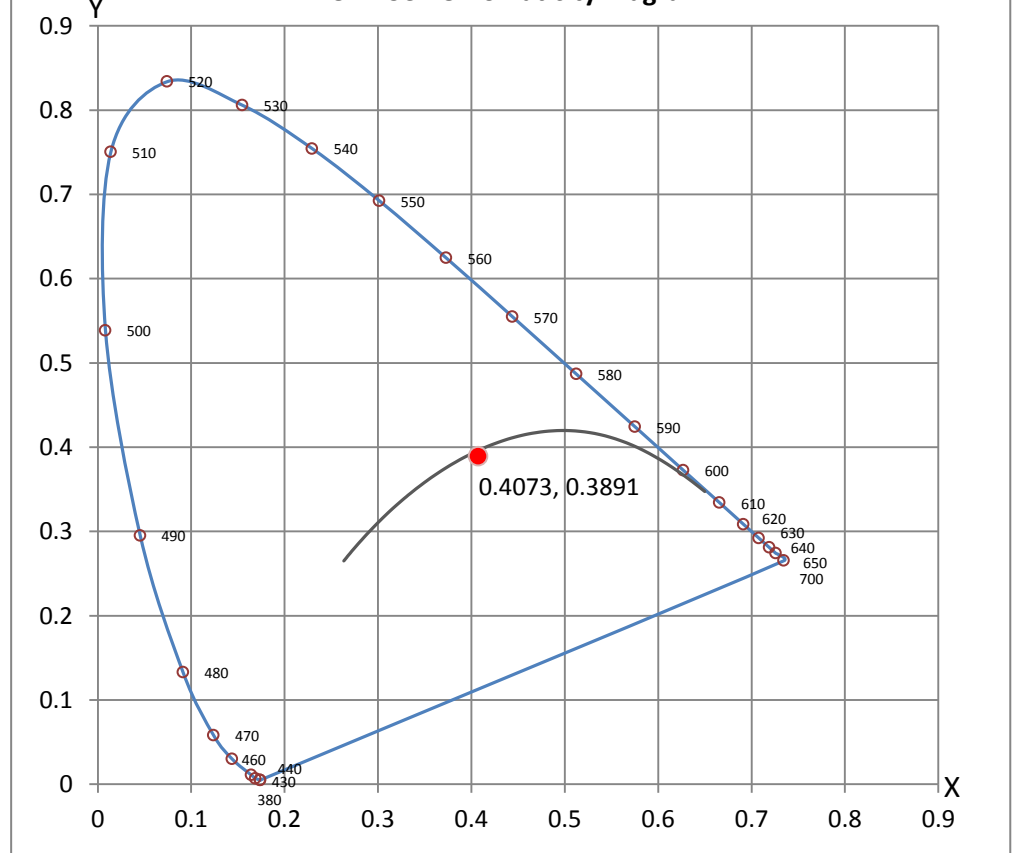
## CRI & CCT

x	0.4073
y	0.3891
u'	0.2377
v'	0.5109
CRI	94.80
CCT	3444
Duv	-0.00115

## R Values

R1	96.64
R2	98.40
R3	98.71
R4	97.66
R5	97.12
R6	96.05
R7	91.68
R8	82.36
R9	59.03
R10	96.20
R11	95.64
R12	78.83
R13	97.91
R14	99.05
R15	91.03

**CIE 1931 Chromaticity Diagram**





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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: 10*



8165 E. Kaiser Blvd. Anaheim, CA 92808

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## Photometric Test Report

### IES INDOOR REPORT

PHOTOMETRIC FILENAME : L022010922.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] L022010922

[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)

[ISSUEDATE] 2/28/2020

[MANUFAC] Vode Lighting

[LUMCAT] 707-Z3-48-Z-CC-SO-359-U2S7-BL

[LUMINAIRE] ZipThree LED Suspended, 48", 3500K, 90 CRI, zipper board, symmetric lens with edgeglow

[MORE] up/80° symmetric lens down, standard output, black anodized finish

[BALLASTCAT] MEAN WELL HLG-40H-36A (2 DRIVERS)

[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND

[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.

[INPUT] 120.06VAC, 51.67W

[TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5627
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	109
Total Luminaire Watts	51.67
Ballast Factor	1.00
CIE Type	Semi-Direct
Spacing Criterion (0-180)	1.26
Spacing Criterion (90-270)	1.28
Spacing Criterion (Diagonal)	1.36
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.26 ft
Luminous Width (90-270)	3.98 ft
Luminous Height	0.03 ft

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

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	10844	11412	12559
55	8757	9654	11185
65	6466	7316	9171
75	4350	5093	6952
85	2622	2751	4281

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L022010922.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</b>	1312	1312	1312	1312	1312	1312	1312	1312	1312	1312
<b>5</b>	1308	1308	1308	1308	1308	1308	1308	1308	1308	1308
<b>10</b>	1293	1293	1293	1293	1293	1293	1293	1293	1293	1294
<b>15</b>	1267	1267	1267	1267	1267	1267	1267	1267	1268	1268
<b>20</b>	1228	1228	1228	1228	1229	1229	1229	1230	1230	1231
<b>25</b>	1176	1176	1177	1177	1178	1178	1179	1179	1180	1181
<b>30</b>	1111	1111	1112	1112	1113	1114	1114	1116	1117	1118
<b>35</b>	1032	1032	1033	1033	1034	1035	1037	1038	1040	1041
<b>40</b>	937	937	938	939	940	942	944	946	948	950
<b>45</b>	823	823	825	827	829	832	835	838	841	844
<b>50</b>	695	696	697	700	703	707	711	717	722	726
<b>55</b>	563	564	565	568	572	577	581	587	593	599
<b>60</b>	436	437	438	440	443	448	453	460	466	472
<b>65</b>	328	328	329	331	333	336	339	343	347	353
<b>70</b>	234	234	235	236	239	241	244	247	249	251
<b>75</b>	155	155	156	157	159	160	162	165	167	168
<b>80</b>	94	94	94	95	95	96	97	98	98	99
<b>85</b>	51	51	51	50	50	49	48	48	47	46
<b>90</b>	22	22	22	21	20	19	18	17	15	14
<b>95</b>	6	6	6	6	6	7	7	7	8	8
<b>100</b>	15	15	15	16	16	17	18	19	20	20
<b>105</b>	27	28	28	29	31	32	34	36	37	39
<b>110</b>	47	47	48	50	52	55	58	60	63	65
<b>115</b>	76	77	78	81	85	89	94	98	102	105
<b>120</b>	121	122	125	129	134	141	148	155	161	165
<b>125</b>	192	194	197	203	211	221	231	240	249	255
<b>130</b>	299	300	305	313	323	336	348	360	370	377
<b>135</b>	443	445	451	459	471	484	497	510	519	525
<b>140</b>	613	615	620	629	639	650	661	671	678	682
<b>145</b>	785	786	790	796	803	811	818	824	828	828
<b>150</b>	933	933	936	939	943	947	950	953	954	953
<b>155</b>	1046	1047	1048	1049	1050	1052	1052	1053	1053	1051
<b>160</b>	1128	1128	1128	1128	1129	1129	1128	1128	1127	1126
<b>165</b>	1181	1181	1181	1181	1181	1181	1181	1180	1180	1179
<b>170</b>	1214	1214	1214	1214	1214	1214	1214	1214	1213	1213
<b>175</b>	1232	1232	1232	1232	1232	1232	1232	1232	1232	1232
<b>180</b>	1237	1237	1237	1237	1237	1237	1237	1237	1237	1237

**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</b>	1312	1312	1312	1312	1312	1312	1312	1312	1312
<b>5</b>	1308	1308	1308	1308	1308	1308	1308	1308	1308
<b>10</b>	1294	1294	1294	1294	1294	1294	1294	1294	1294
<b>15</b>	1268	1268	1268	1269	1269	1269	1269	1269	1269
<b>20</b>	1231	1232	1232	1232	1232	1233	1233	1233	1233
<b>25</b>	1182	1182	1183	1184	1184	1184	1185	1185	1185
<b>30</b>	1119	1120	1121	1122	1123	1124	1124	1124	1124
<b>35</b>	1043	1044	1046	1047	1048	1049	1050	1050	1051
<b>40</b>	952	954	956	958	960	961	962	963	963
<b>45</b>	847	850	852	855	857	859	860	861	861
<b>50</b>	730	733	736	739	742	744	745	746	746
<b>55</b>	605	610	613	616	619	621	622	623	624
<b>60</b>	478	485	489	492	495	496	498	499	499

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L022010922.IES**

**CANDELA TABULATION - (Cont.)**

<b>65</b>	359	365	370	374	376	378	379	379	379
<b>70</b>	254	258	263	267	270	271	271	272	272
<b>75</b>	170	170	171	173	176	178	178	178	178
<b>80</b>	100	100	100	99	98	100	101	100	100
<b>85</b>	45	44	43	42	41	40	39	39	39
<b>90</b>	12	10	9	7	6	5	4	3	3
<b>95</b>	8	8	8	8	8	8	8	8	8
<b>100</b>	21	21	22	22	22	22	22	22	22
<b>105</b>	40	40	41	41	41	42	42	42	42
<b>110</b>	67	68	68	69	69	68	68	68	68
<b>115</b>	107	108	109	108	107	106	106	105	105
<b>120</b>	168	169	168	166	164	162	160	159	158
<b>125</b>	258	258	256	252	248	244	240	238	237
<b>130</b>	380	379	374	368	362	355	350	346	345
<b>135</b>	526	524	518	510	501	493	487	483	481
<b>140</b>	681	678	671	662	654	646	639	635	634
<b>145</b>	827	823	817	809	802	795	789	786	785
<b>150</b>	951	947	942	936	931	926	922	920	919
<b>155</b>	1049	1046	1043	1040	1036	1034	1031	1030	1030
<b>160</b>	1125	1123	1121	1119	1117	1116	1115	1114	1113
<b>165</b>	1178	1177	1176	1175	1175	1174	1173	1173	1173
<b>170</b>	1213	1212	1212	1212	1212	1211	1211	1211	1211
<b>175</b>	1232	1232	1232	1232	1232	1232	1232	1232	1232
<b>180</b>	1237	1237	1237	1237	1237	1237	1237	1237	1237



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L022010922.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	482.24	N.A.	8.60
0-30	1026.05	N.A.	18.20
0-40	1676.2	N.A.	29.80
0-60	2857.86	N.A.	50.80
0-80	3392.61	N.A.	60.30
0-90	3447.59	N.A.	61.30
10-90	3323.2	N.A.	59.10
20-40	1193.96	N.A.	21.20
20-50	1842.45	N.A.	32.70
40-70	1535.66	N.A.	27.30
60-80	534.75	N.A.	9.50
70-80	180.76	N.A.	3.20
80-90	54.97	N.A.	1.00
90-110	53.34	N.A.	0.90
90-120	154.17	N.A.	2.70
90-130	369.92	N.A.	6.60
90-150	1252.12	N.A.	22.30
90-180	2179.02	N.A.	38.70
110-180	2125.68	N.A.	37.80
0-180	5626.61	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	124.39
10-20	357.85
20-30	543.81
30-40	650.15
40-50	648.49
50-60	533.17
60-70	353.99
70-80	180.76
80-90	54.97
90-100	12.86
100-110	40.48
110-120	100.83
120-130	215.75
130-140	381.78
140-150	500.42
150-160	478.45
160-170	331.48
170-180	116.97

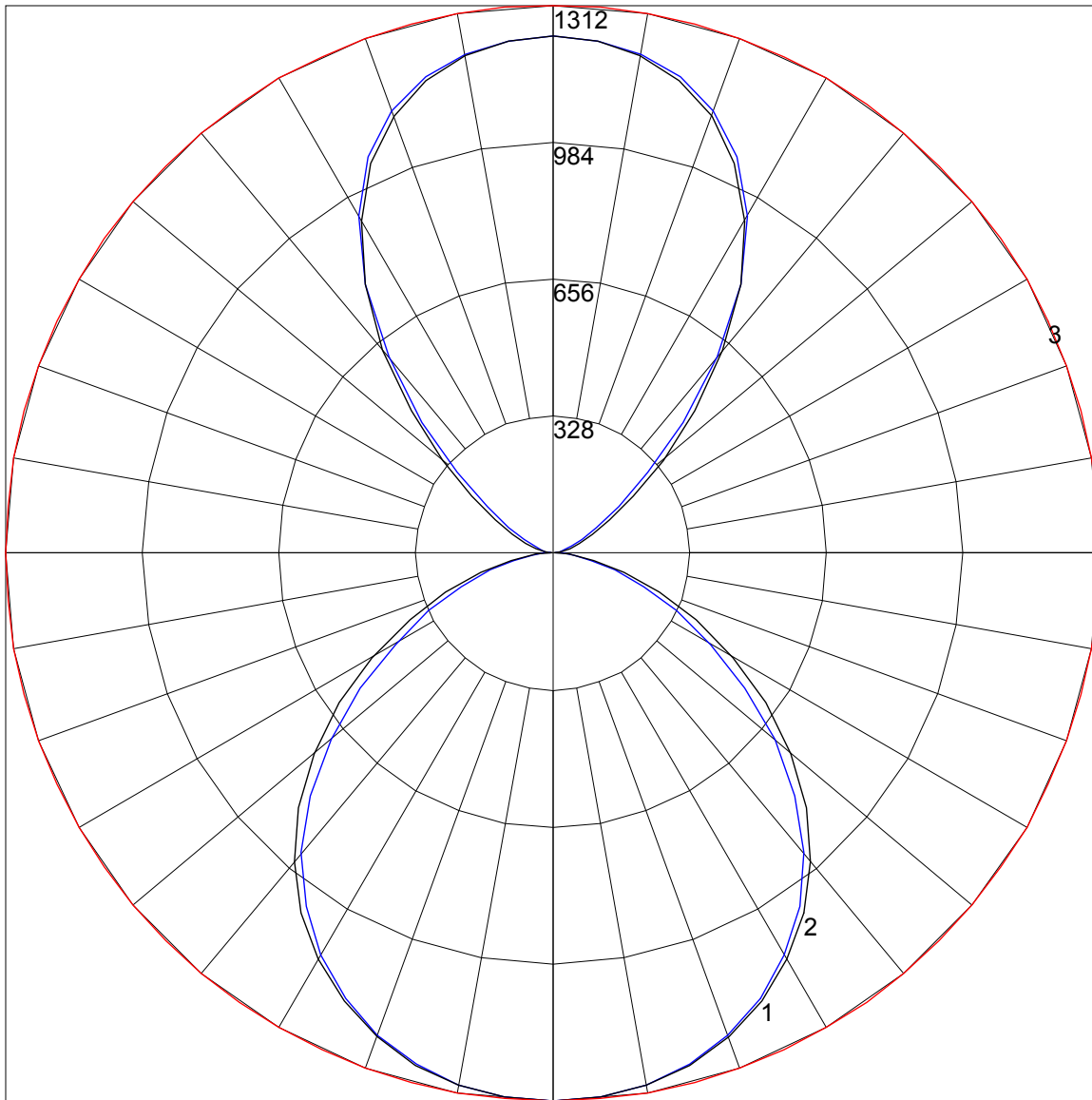
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	110	110	110	110	103	103	103	103	90	90	90	78	78	78	66	66	66	61
1	101	96	92	89	94	90	87	84	79	76	74	69	67	65	59	58	57	52
2	92	84	78	73	86	79	74	69	69	65	62	61	57	55	52	50	48	44
3	84	74	67	61	78	70	63	58	61	56	52	54	50	47	47	44	41	37
4	77	66	58	52	72	62	55	49	55	49	45	48	44	40	42	38	35	32
5	71	59	51	45	66	55	48	43	49	43	39	43	38	35	38	34	31	28
6	65	53	45	39	61	50	42	37	44	38	34	39	34	31	34	30	27	25
7	60	48	40	34	56	45	38	33	40	34	30	36	31	27	31	27	24	22
8	56	43	36	30	52	41	34	29	37	31	27	33	28	24	29	25	22	20
9	52	40	32	27	49	38	31	26	34	28	24	30	25	22	26	23	20	18
10	49	36	29	24	46	35	28	23	31	25	22	28	23	20	24	21	18	16

POLAR GRAPH



Maximum Candela = 1312 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.)