

IES Report

ZipThree® | Ceiling Cable | 707 | Symmetric with EdgeGlow, up | 60° Symmetric, down | 90 CRI | SO

707-Z3-XX-4-48-CC-XX-XX-XX-X-0-Z-SO-359-U2S2-0-AL / WH-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	106	109	111	115
Total Lumens, 4' rail length (1219mm)	5460	5633	5747	5805
Lumens per foot (305mm)	1365	1408	1437	1451
Lumens per foot UP (305mm)	858	885	903	912
Lumens per foot DOWN (305mm)	507	524	534	540
Input Power (W), 4' rail length (1219mm)	51.8	51.8	51.8	51.8
Watts per foot (305mm)	13	13	13	13
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: L121911553



Report No: L121911553

Issue Date: 1/21/2020

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

Model Number: 707-Z3-48-Z-CC-SO-359-U2S2-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: 1/10/20 - 1/21/20

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-Z3-48-Z-CC-SO-359-U2S2-AL
Driver Model Number:	MEAN WELL HLG-40H-36A (2 DRIVERS)

Test Summary

Total Lumens:	5747.48
Efficacy:	110.87
Color Redering Index:	94.2
Correlated Color Temperature:	3396
Input Voltage (VAC/60Hz):	120.02
Input Current (Amp):	0.4346
Input Power (W):	51.84
Input Power Factor:	0.9936
Current ATHD (%):	8.0%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	2:30

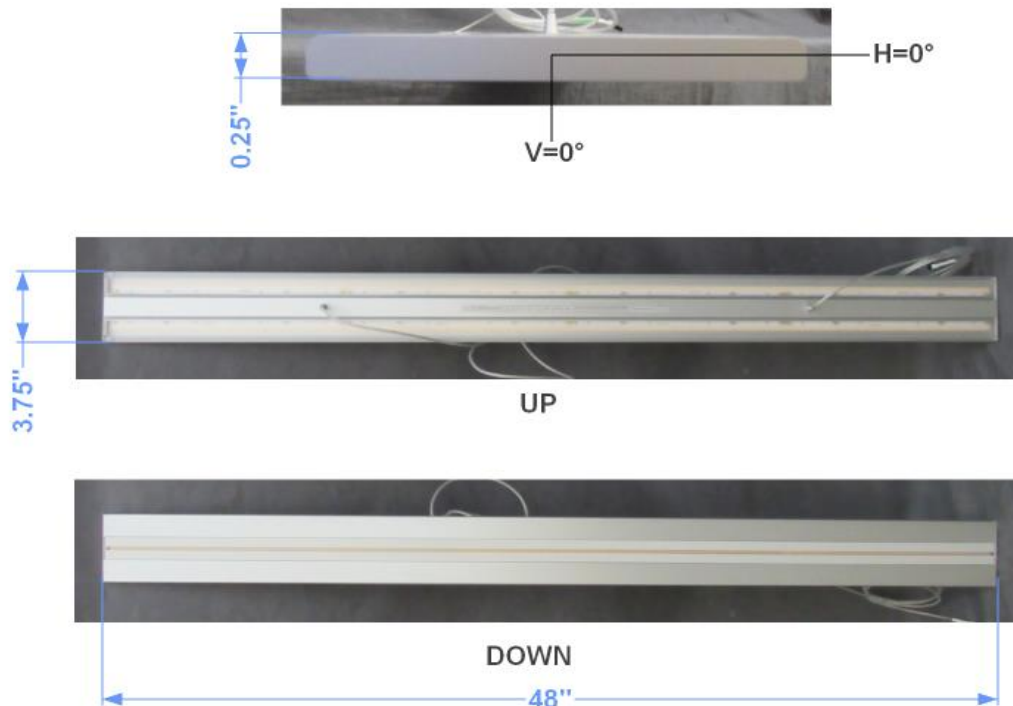
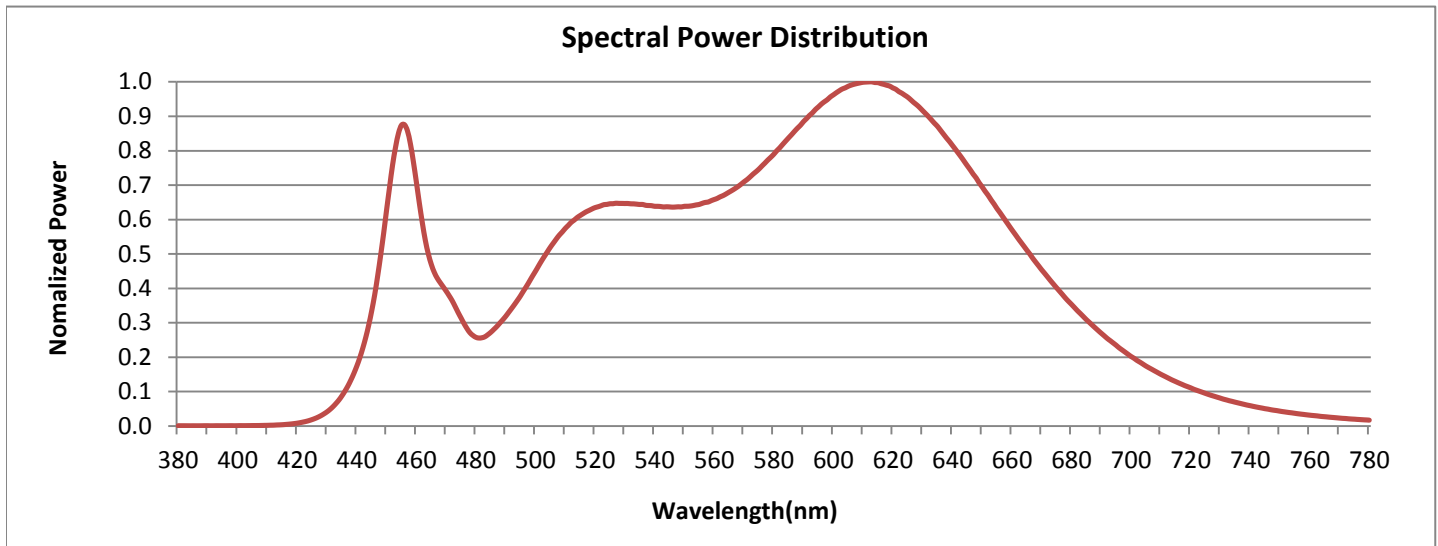


FIG. 1 LUMINAIRE

Colorimetry Test Results

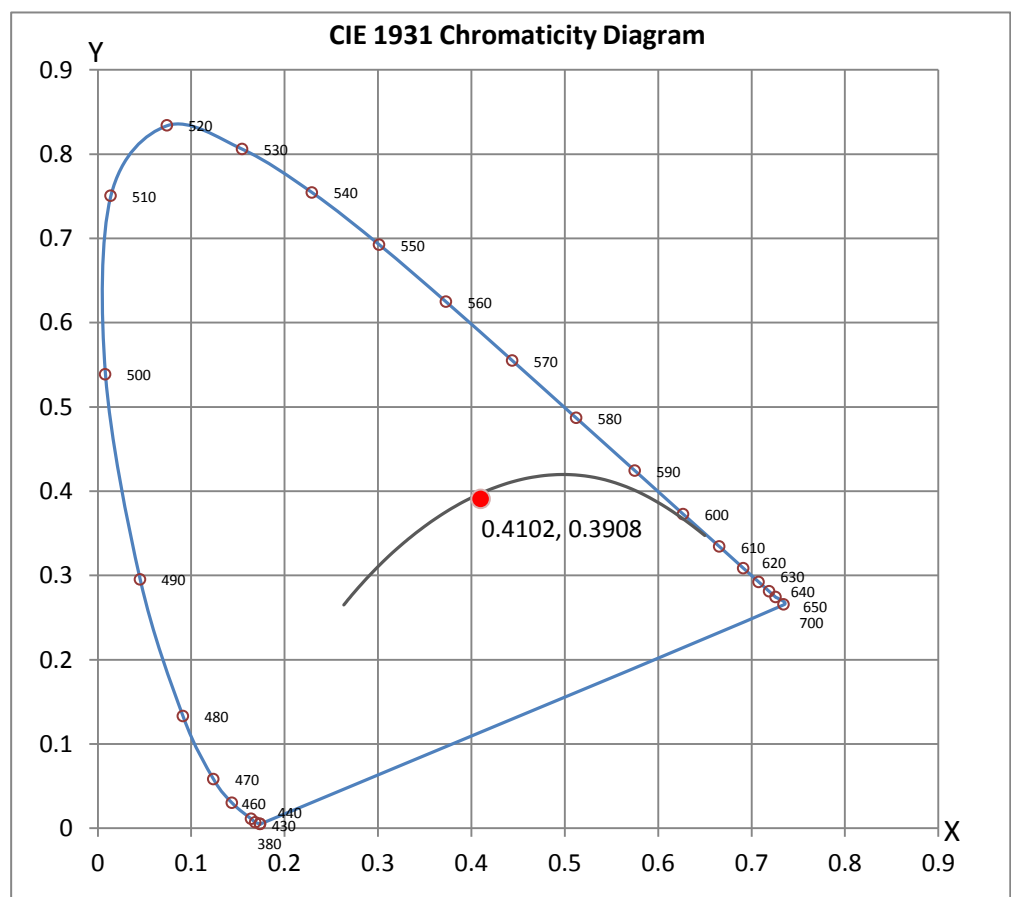


CRI & CCT

x	0.4102
y	0.3908
u'	0.2389
v'	0.5120
CRI	94.20
CCT	3396
Duv	-0.00101

R Values

R1	96.24
R2	98.97
R3	98.02
R4	96.61
R5	96.38
R6	95.66
R7	90.49
R8	81.04
R9	57.48
R10	97.40
R11	97.65
R12	77.47
R13	97.89
R14	99.59
R15	90.49



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
www.lightlaboratory.com

Photometric Test Report

IES INDOOR REPORT

PHOTOMETRIC FILENAME : L121911553.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L121911553
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 1/21/2020
[MANUFAC] VODE LIGHTING
[LUMCAT] 707-Z3-48-Z-CC-SO-359-U2S2-AL
[LUMINAIRE] ZipThree LED Suspended, 48", 3500K, 90 CRI, zipper board, symmetric lens with edgeglow up/60°
[MORE] symmetric lens down, standard output, clear 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] 120.02VAC, 51.84W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5747
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	111
Total Luminaire Watts	51.84
Ballast Factor	1.00
CIE Type	Semi-Indirect
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Rectangular w/Sides
Luminous Length (0-180)	0.26 ft
Luminous Width (90-270)	3.98 ft
Luminous Height	0.02 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	3835	6029	7721
55	2253	3631	5289
65	1646	2428	3941
75	1248	1717	2917
85	698	932	1804

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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	1333	1333	1333	1333	1333	1333	1333	1333	1333	1333
1.0	1333	1333	1333	1333	1333	1333	1333	1333	1333	1333
3.0	1330	1330	1330	1330	1331	1331	1331	1331	1331	1331
5.0	1323	1323	1323	1323	1324	1324	1325	1325	1326	1326
7.0	1311	1311	1312	1312	1313	1314	1315	1316	1317	1318
9.0	1294	1294	1295	1296	1297	1298	1300	1302	1304	1305
11.0	1272	1272	1273	1275	1277	1279	1281	1284	1287	1290
13.0	1245	1245	1246	1248	1251	1254	1258	1262	1266	1270
15.0	1211	1212	1214	1217	1220	1225	1230	1236	1241	1247
17.0	1171	1172	1175	1179	1184	1190	1197	1204	1212	1219
19.5	1112	1114	1117	1123	1130	1139	1148	1158	1168	1178
22.5	1027	1028	1033	1041	1051	1063	1076	1090	1104	1117
25.5	927	929	935	945	959	975	992	1010	1028	1045
29.0	798	800	808	821	838	858	880	903	926	948
33.0	643	646	655	670	689	713	739	767	795	821
37.5	479	483	492	507	527	551	579	609	640	669
42.5	333	335	343	356	373	395	419	447	476	504
47.5	229	231	237	246	259	276	295	317	341	364
55.0	138	139	142	147	154	164	175	188	202	217
65.0	78	78	79	82	84	88	93	98	105	111
75.0	40	40	41	42	43	44	46	48	50	52
85.0	11	11	11	11	11	11	12	12	12	13
90.0	21	21	21	20	19	18	17	16	14	13
95.0	49	49	49	48	48	47	46	45	44	42
100.0	88	88	88	89	89	89	90	91	92	94
105.0	150	151	152	153	155	158	161	164	167	170
110.0	237	237	238	240	243	246	250	253	257	262
115.0	341	342	343	345	348	352	357	363	368	373
120.0	466	467	469	471	475	479	483	488	494	500
125.0	603	603	605	607	610	614	619	625	632	638
130.0	742	742	744	746	750	755	759	764	768	772
135.0	877	877	878	880	882	884	886	889	891	894
140.0	992	992	992	993	994	996	997	998	1000	1001
145.0	1087	1087	1087	1088	1088	1089	1090	1090	1091	1092
150.0	1165	1165	1165	1166	1166	1166	1167	1167	1167	1168
155.0	1229	1229	1228	1228	1229	1229	1229	1229	1229	1230
160.0	1278	1279	1279	1279	1279	1279	1279	1279	1279	1280
165.0	1317	1317	1316	1317	1317	1317	1317	1317	1317	1317
170.0	1343	1343	1343	1343	1343	1343	1344	1344	1344	1344
175.0	1358	1358	1358	1358	1359	1359	1358	1358	1359	1358
180.0	1362	1362	1362	1362	1362	1362	1362	1362	1362	1362

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	1333	1333	1333	1333	1333	1333	1333	1333	1333
1.0	1333	1333	1333	1333	1333	1333	1333	1333	1333
3.0	1331	1332	1332	1332	1332	1332	1332	1332	1332
5.0	1327	1327	1328	1328	1328	1329	1329	1329	1329
7.0	1319	1320	1321	1322	1323	1323	1324	1324	1324
9.0	1308	1309	1311	1313	1314	1315	1316	1316	1316
11.0	1293	1295	1298	1300	1302	1304	1305	1305	1306
13.0	1275	1278	1282	1285	1287	1289	1291	1292	1292
15.0	1252	1257	1262	1266	1269	1272	1273	1274	1275

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CANDELA TABULATION - (Cont.)

17.0	1226	1232	1238	1243	1247	1250	1252	1253	1254
19.5	1187	1195	1202	1208	1213	1217	1220	1221	1221
22.5	1129	1140	1149	1157	1163	1167	1170	1173	1173
25.5	1061	1074	1085	1094	1101	1107	1110	1112	1113
29.0	967	984	998	1009	1017	1022	1026	1028	1028
33.0	845	866	882	894	902	908	911	913	913
37.5	696	718	736	748	757	762	765	766	767
42.5	531	553	570	582	590	596	599	600	601
47.5	387	406	421	433	442	448	452	454	455
55.0	232	245	257	267	276	284	289	292	294
65.0	118	126	133	140	147	153	158	161	162
75.0	55	58	61	64	67	70	72	74	74
85.0	13	14	14	15	15	15	16	16	16
90.0	11	10	8	7	6	5	4	3	3
95.0	41	41	40	40	40	40	40	40	40
100.0	96	98	99	100	101	101	103	103	103
105.0	172	175	177	179	182	184	185	185	185
110.0	266	270	274	279	282	284	285	285	285
115.0	378	384	390	395	397	399	400	401	401
120.0	508	514	518	522	525	527	528	529	529
125.0	644	648	652	654	657	659	659	660	661
130.0	775	778	781	783	785	786	787	787	787
135.0	896	898	899	901	902	903	903	904	904
140.0	1002	1003	1004	1005	1005	1006	1006	1007	1007
145.0	1092	1093	1093	1094	1094	1095	1095	1095	1095
150.0	1168	1168	1169	1169	1169	1170	1170	1170	1170
155.0	1230	1230	1230	1231	1231	1231	1231	1231	1231
160.0	1280	1280	1280	1280	1280	1280	1280	1280	1281
165.0	1317	1317	1317	1318	1318	1318	1317	1317	1318
170.0	1343	1344	1344	1344	1344	1344	1344	1344	1344
175.0	1358	1358	1358	1359	1358	1359	1359	1359	1359
180.0	1362	1362	1362	1362	1362	1362	1362	1362	1362

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	453.48	N.A.	7.90
0-30	903.57	N.A.	15.70
0-40	1304.76	N.A.	22.70
0-60	1848.77	N.A.	32.20
0-80	2093.22	N.A.	36.40
0-90	2136.76	N.A.	37.20
10-90	2034.63	N.A.	35.40
20-40	851.28	N.A.	14.80
20-50	1213.02	N.A.	21.10
40-70	701.03	N.A.	12.20
60-80	244.45	N.A.	4.30
70-80	87.42	N.A.	1.50
80-90	43.54	N.A.	0.80
90-110	236.01	N.A.	4.10
90-120	608.68	N.A.	10.60
90-130	1175.75	N.A.	20.50
90-150	2543.14	N.A.	44.20
90-180	3610.72	N.A.	62.80
110-180	3374.71	N.A.	58.70
0-180	5747.48	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	102.14
10-20	351.34
20-30	450.08
30-40	401.20
40-50	361.74
50-60	182.27
60-70	157.03
70-80	87.42
80-90	43.54
90-100	52.96
100-110	183.05
110-120	372.66
120-130	567.07
130-140	685.81
140-150	681.58
150-160	566.56
160-170	371.84
170-180	129.18

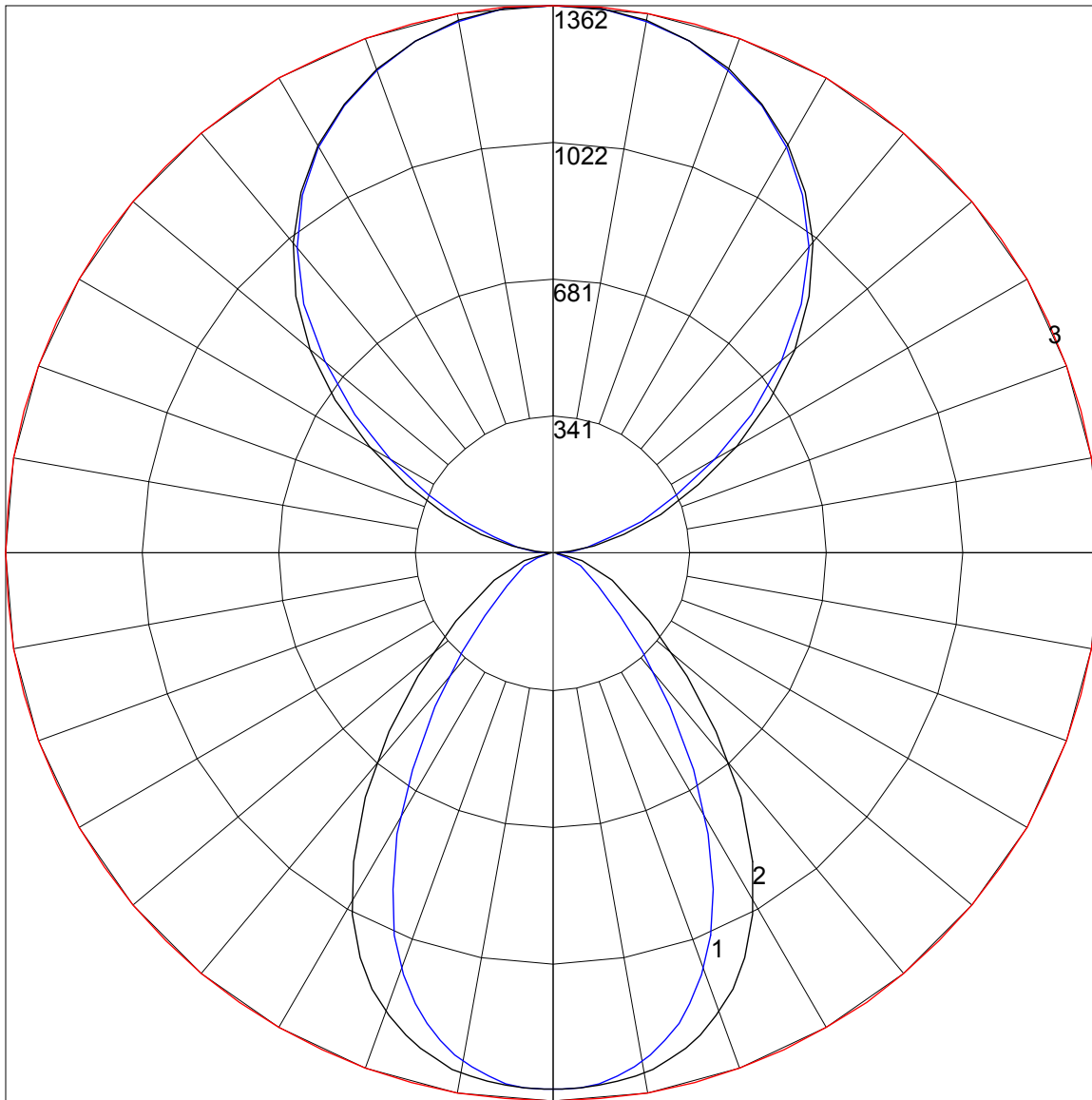
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	104	104	104	104	94	94	94	94	76	76	76	60	60	60	44	44	44	37
1	95	91	88	84	86	83	80	77	67	65	63	53	52	51	40	39	38	32
2	87	81	75	70	79	73	69	64	60	56	54	47	45	43	36	35	33	28
3	80	71	65	59	73	65	59	55	53	49	46	43	40	37	33	31	29	25
4	74	64	56	51	67	58	52	47	48	43	40	38	35	33	30	28	26	22
5	68	57	50	44	62	52	46	41	43	38	35	35	32	29	27	25	23	20
6	63	51	44	38	57	47	41	36	39	34	31	32	28	26	25	23	21	18
7	58	47	39	34	53	43	36	32	36	31	27	29	26	23	23	21	19	16
8	54	43	35	30	49	39	33	28	33	28	25	27	23	21	21	19	17	15
9	50	39	32	27	46	36	30	25	30	25	22	25	21	19	20	17	16	13
10	47	36	29	24	43	33	27	23	28	23	20	23	20	17	18	16	14	12

POLAR GRAPH



Maximum Candela = 1362 Located At Horizontal Angle = 0, Vertical Angle = 180
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 (180) (Through Max. Cd.)