

IES Report

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

707-Z3-XX-4-48-CC-XX-XX-XX-X-0-Z-SO-359-U1S2-0-AL / WH-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	95	98	100	104
Total Lumens, 4' rail length (1219mm)	4865	5018	5121	5223
Lumens per foot (305mm)	1216	1255	1280	1306
Lumens per foot UP (305mm)	750	774	790	805
Lumens per foot DOWN (305mm)	466	481	491	500
Input Power (W), 4' rail length (1219mm)	51.3	51.3	51.3	51.3
Watts per foot (305mm)	12.9	12.9	12.9	12.9
CRI*	96	96	96	96

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.

Report No: L031805803R01 **Issue Date:** 4/12/2018

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

Model Number: 707-Z3-CC-Z-SO-359-U1S2-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.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 3/29/18

Date of Tests: 4/2/18 - 4/5/18

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	1/9/19
BK PRECISION	1747	PS-DC04	1/10/19
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/19
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

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

Test Summary

Manufacturer:	Vode Lighting
Model Number:	707-Z3-CC-Z-SO-359-U1S2-AL
Driver Model Number:	MEAN WELL HLG-40H-36A(2 DRIVERS)
Total Lumens:	5120.60
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.43
Input Power (W):	51.29
Input Power Factor:	0.99
Current ATHD @ 120V(%):	9%
Current ATHD @ 277V(%):	N/A
Efficacy:	100
Color Rendering Index (CRI):	96
Correlated Color Temperature (K):	3385
Chromaticity Coordinate x:	0.4116
Chromaticity Coordinate y:	0.3931
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:40
Total Operating Time (Hours):	1:40

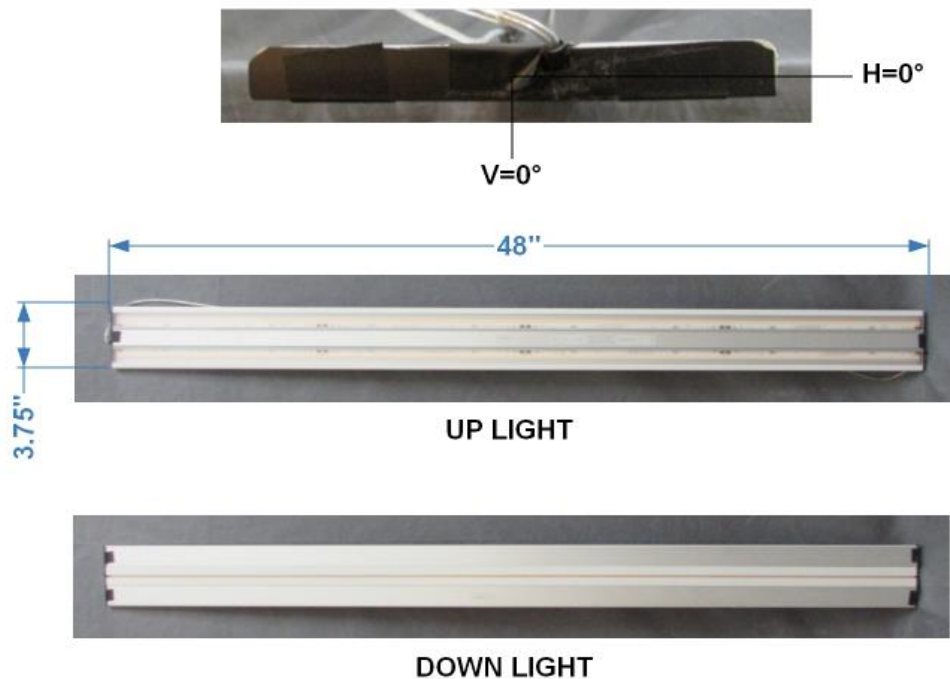
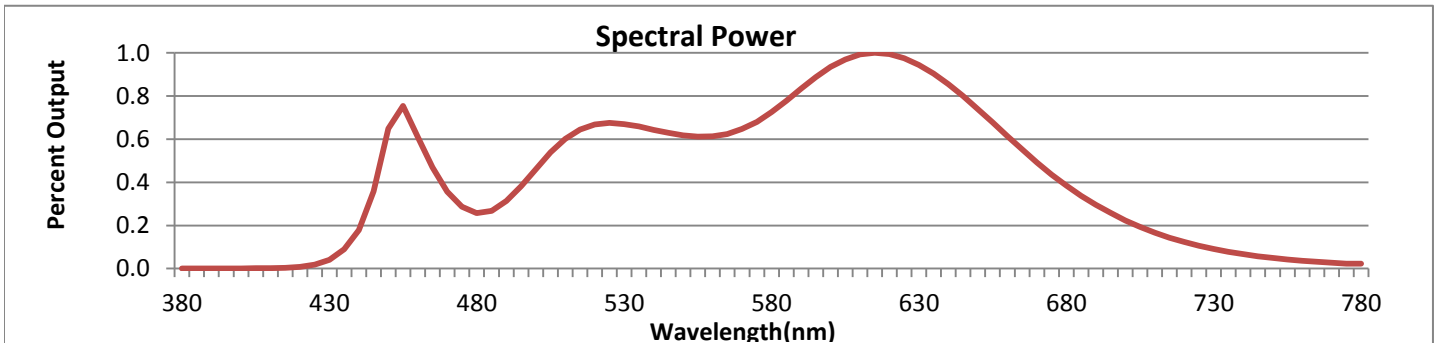


FIG. 1 LUMINAIRE

*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.



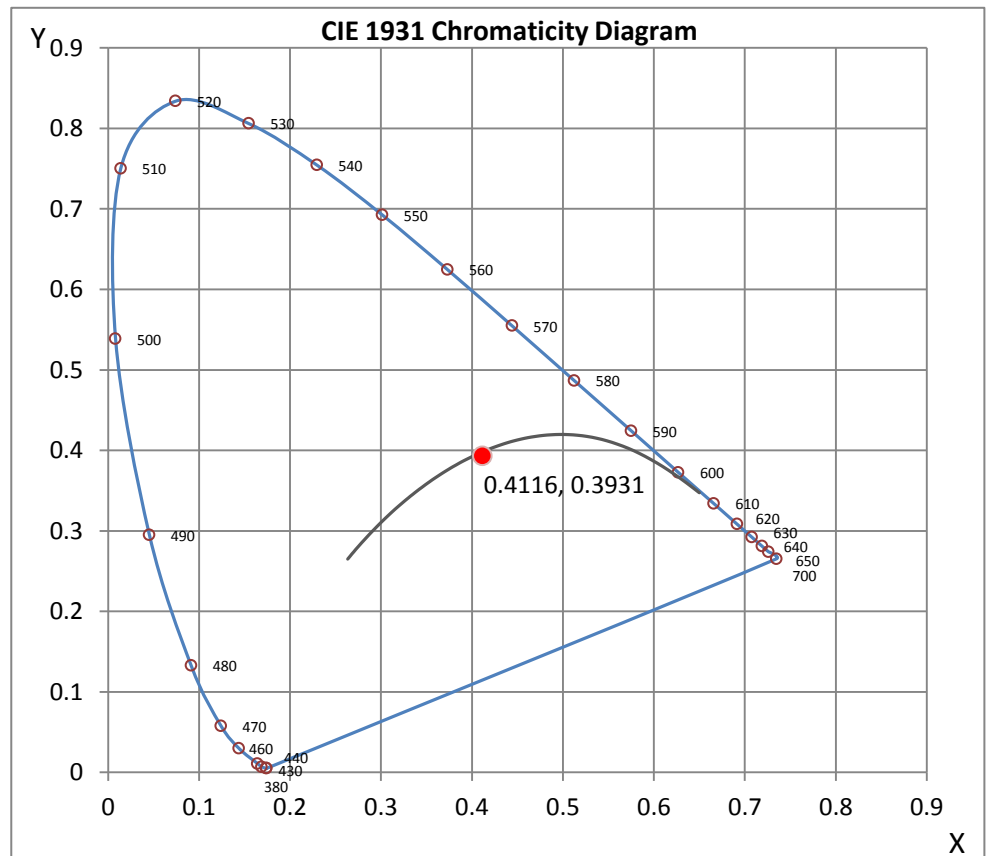
Wavelength	W/m ² nm	440	0.1782	510	0.6015	580	0.7257	650	0.7400	720	0.1234
380	0.0010	450	0.6496	520	0.6689	590	0.8339	660	0.6146	730	0.0909
390	0.0009	460	0.6109	530	0.6696	600	0.9351	670	0.4914	740	0.0668
400	0.0012	470	0.3570	540	0.6436	610	0.9930	680	0.3848	750	0.0491
410	0.0020	480	0.2576	550	0.6177	620	0.9953	690	0.2952	760	0.0362
420	0.0080	490	0.3129	560	0.6130	630	0.9448	700	0.2229	770	0.0268
430	0.0412	500	0.4607	570	0.6469	640	0.8552	710	0.1667	780	0.0228

CRI & CCT

x	0.4116
y	0.3931
u'	0.2388
v'	0.5132
CRI	95.90
CCT	3385
Duv	-0.00030

R Values

R1	97.52
R2	98.65
R3	99.18
R4	96.90
R5	97.61
R6	94.26
R7	94.06
R8	88.86
R9	74.16
R10	97.89
R11	90.41
R12	80.77
R13	97.14
R14	98.67



*All Results in accordance to IESNA LM-79-2008: Approved Method for the Electrical and Photometric Testing of Solid-State Lighting.

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 Released by:



Jeff Ahn
Engineering Manager

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 : L031805803R01.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L031805803R01
 [TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
 [ISSUEDATE] 4/12/2018
 [MANUFAC] Vode Lighting
 [LUMCAT] 707-Z3-CC-Z-SO-359-U1S2-AL
 [LUMINAIRE] ZipThree Suspended, 48", 3500K, 90 CRI, zipper board,
 [MORE] symmetric lens up/60° 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] 120VAC, 51.29W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5121
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	100
Total Luminaire Watts	51.29
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)	0.25 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	2830	5068	9536
55	1776	3019	6623
65	1375	2061	4504
75	1061	1432	3033
85	518	735	1525

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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	1292	1292	1292	1292	1292	1292	1292	1292	1292	1292
1.0	1291	1291	1291	1291	1291	1291	1291	1291	1291	1291
3.0	1285	1285	1285	1286	1286	1286	1286	1287	1287	1287
5.0	1274	1274	1274	1275	1276	1276	1277	1278	1279	1280
7.0	1257	1257	1257	1258	1260	1261	1263	1265	1267	1269
9.0	1232	1233	1234	1235	1238	1240	1243	1247	1250	1254
11.0	1201	1202	1204	1206	1209	1214	1218	1224	1229	1234
13.0	1162	1163	1165	1169	1174	1180	1187	1194	1202	1210
15.0	1116	1117	1120	1125	1132	1140	1149	1160	1170	1181
17.0	1061	1063	1067	1073	1082	1093	1105	1119	1133	1147
19.5	983	985	991	999	1011	1025	1041	1059	1079	1097
22.5	877	879	887	898	913	931	953	976	1001	1027
25.5	762	765	773	786	804	827	853	882	913	945
29.0	626	628	637	652	673	698	728	763	801	839
33.0	480	483	492	506	528	554	586	622	664	707
37.5	344	347	355	368	386	410	439	474	515	559
42.5	235	237	243	253	267	285	309	338	372	411
47.5	165	166	170	177	186	199	216	237	262	292
55.0	105	106	108	111	116	123	131	143	157	174
65.0	63	63	64	65	67	70	73	78	83	91
75.0	33	33	33	34	34	35	36	38	40	42
85.0	8	8	8	8	9	9	9	9	9	10
90.0	2	2	2	2	2	2	2	2	2	2
95.0	30	30	30	30	30	30	30	31	31	31
100.0	76	76	76	77	77	78	79	79	80	81
105.0	134	134	135	135	137	138	140	141	143	146
110.0	206	206	207	209	210	213	215	218	221	224
115.0	292	293	294	296	298	301	304	308	312	316
120.0	392	392	394	396	399	402	406	411	416	421
125.0	503	503	505	507	510	514	518	524	529	535
130.0	621	622	623	626	629	633	637	643	648	654
135.0	741	742	743	745	748	752	756	760	765	769
140.0	855	855	857	858	861	863	866	870	873	876
145.0	956	956	957	958	960	961	963	965	967	969
150.0	1040	1040	1040	1041	1042	1043	1043	1044	1045	1046
155.0	1107	1107	1107	1107	1108	1108	1109	1109	1110	1111
160.0	1160	1160	1160	1160	1160	1161	1161	1162	1162	1163
165.0	1200	1200	1200	1200	1201	1201	1202	1202	1203	1204
170.0	1231	1231	1231	1232	1232	1232	1233	1233	1234	1235
175.0	1253	1253	1253	1253	1253	1253	1253	1253	1254	1254
180.0	1261	1261	1261	1261	1261	1261	1261	1261	1261	1261

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	1292	1292	1292	1292	1292	1292	1292	1292	1292
1.0	1291	1291	1291	1291	1291	1291	1291	1291	1291
3.0	1288	1288	1289	1289	1289	1289	1289	1290	1289
5.0	1281	1282	1283	1284	1285	1285	1286	1286	1286
7.0	1271	1273	1275	1277	1278	1279	1280	1281	1281
9.0	1257	1261	1264	1267	1269	1271	1272	1273	1274
11.0	1240	1245	1250	1254	1258	1261	1263	1264	1264
13.0	1218	1225	1232	1238	1243	1248	1250	1252	1253
15.0	1192	1202	1212	1219	1226	1232	1236	1238	1239

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CANDELA TABULATION - (Cont.)

17.0	1161	1175	1187	1197	1206	1213	1218	1221	1222
19.5	1116	1134	1150	1164	1176	1185	1191	1195	1197
22.5	1052	1076	1098	1117	1132	1145	1153	1158	1160
25.5	978	1008	1036	1060	1080	1096	1107	1113	1115
29.0	879	917	951	982	1007	1027	1041	1049	1052
33.0	753	798	841	879	910	935	951	961	965
37.5	608	657	704	748	784	813	833	845	849
42.5	456	503	550	595	632	664	685	698	702
47.5	328	367	408	449	484	514	535	548	552
55.0	196	220	246	274	299	322	339	350	354
65.0	99	110	122	134	147	159	169	175	178
75.0	45	49	53	58	63	67	71	74	74
85.0	10	10	11	11	12	12	13	13	13
90.0	1	1	1	1	1	0	0	0	0
95.0	31	31	31	31	31	31	30	30	30
100.0	82	83	84	85	85	85	85	85	85
105.0	148	149	152	153	154	155	156	156	156
110.0	228	231	234	236	238	240	241	241	242
115.0	321	325	329	332	335	337	338	339	339
120.0	426	431	436	439	442	445	447	448	449
125.0	541	546	550	554	557	560	562	564	565
130.0	659	664	668	671	674	677	679	681	682
135.0	774	777	780	783	786	788	791	794	795
140.0	879	881	883	886	888	891	894	896	897
145.0	970	972	974	976	978	981	983	985	987
150.0	1048	1049	1050	1052	1055	1057	1060	1061	1062
155.0	1112	1113	1115	1117	1119	1121	1123	1124	1125
160.0	1164	1166	1167	1169	1170	1172	1173	1174	1175
165.0	1205	1206	1207	1209	1210	1211	1212	1213	1213
170.0	1235	1236	1237	1238	1238	1239	1240	1240	1240
175.0	1254	1254	1255	1255	1255	1255	1255	1255	1256
180.0	1261	1261	1261	1261	1261	1261	1261	1261	1261

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	431.17	N.A.	8.40
0-30	843.98	N.A.	16.50
0-40	1204.24	N.A.	23.50
0-60	1703.54	N.A.	33.30
0-80	1927.9	N.A.	37.60
0-90	1962.19	N.A.	38.30
10-90	1863.73	N.A.	36.40
20-40	773.07	N.A.	15.10
20-50	1102.49	N.A.	21.50
40-70	645.10	N.A.	12.60
60-80	224.37	N.A.	4.40
70-80	78.56	N.A.	1.50
80-90	34.29	N.A.	0.70
90-110	196.18	N.A.	3.80
90-120	512.20	N.A.	10.00
90-130	990.81	N.A.	19.30
90-150	2186.77	N.A.	42.70
90-180	3158.42	N.A.	61.70
110-180	2962.23	N.A.	57.80
0-180	5120.6	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	98.45
10-20	332.72
20-30	412.82
30-40	360.26
40-50	329.42
50-60	169.88
60-70	145.81
70-80	78.56
80-90	34.29
90-100	39.01
100-110	157.18
110-120	316.02
120-130	478.61
130-140	591.15
140-150	604.81
150-160	512.45
160-170	340.09
170-180	119.11

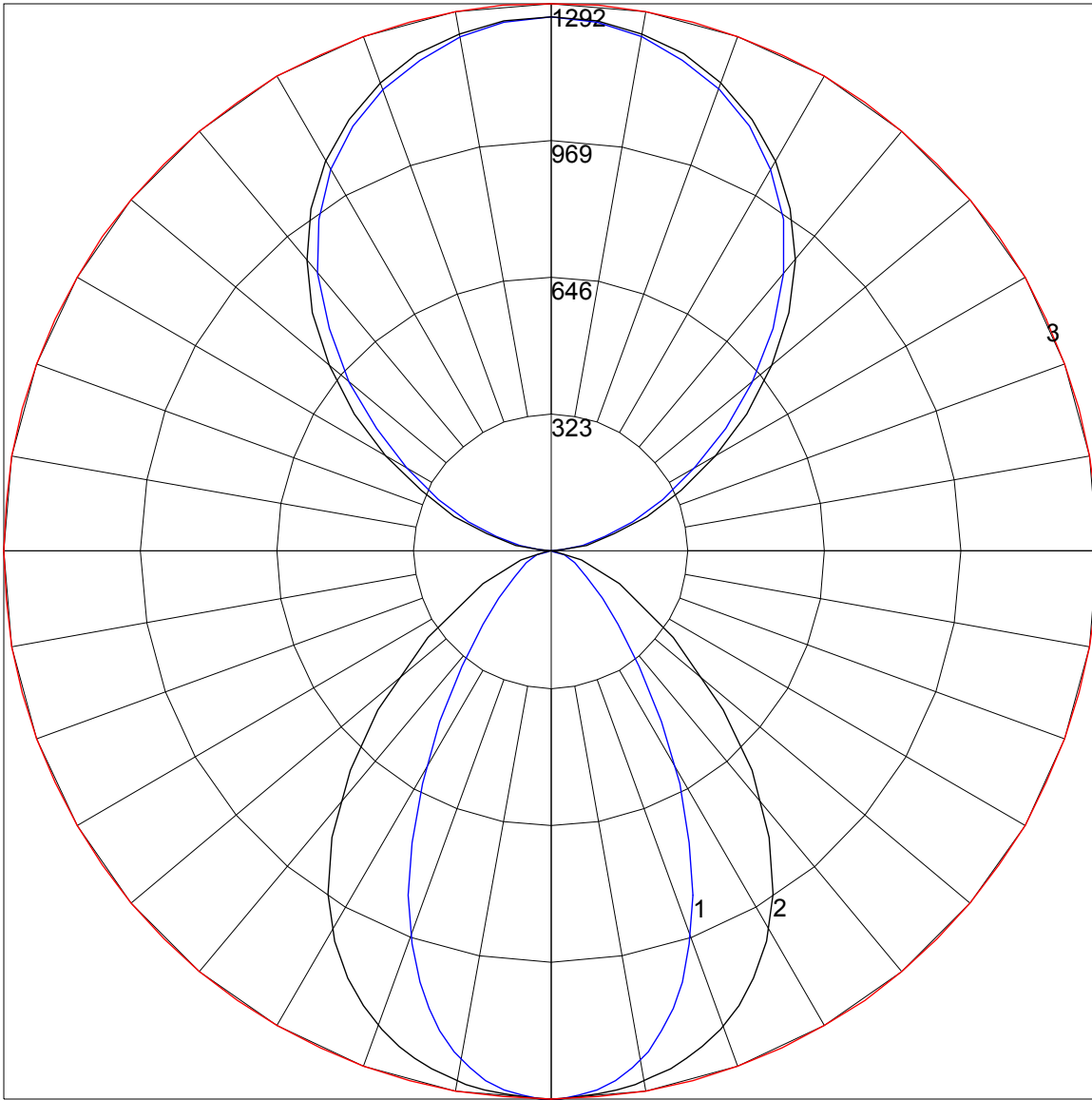
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	104	104	104	104	95	95	95	95	77	77	77	60	60	60	45	45	45	38
1	96	92	88	85	87	83	80	78	68	66	64	54	53	51	41	40	39	33
2	88	81	75	70	80	74	69	65	60	57	54	48	46	44	37	36	34	29
3	81	72	65	60	73	66	60	55	54	50	46	43	41	38	33	32	30	26
4	74	64	57	51	67	59	52	47	49	44	40	39	36	33	30	28	27	23
5	68	57	50	44	62	53	46	41	44	39	35	36	32	29	28	26	24	20
6	63	52	44	39	57	48	41	36	40	35	31	32	29	26	26	23	21	18
7	59	47	40	34	53	43	37	32	36	31	28	30	26	24	24	21	19	17
8	54	43	36	31	50	40	33	29	33	28	25	27	24	21	22	19	18	15
9	51	39	32	27	46	36	30	26	31	26	23	25	22	19	20	18	16	14
10	48	36	29	25	43	34	27	23	28	24	20	24	20	18	19	17	15	13

POLAR GRAPH



Maximum Candela = 1292 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.)