

IES Report

ZipThree® | Ceiling Cable | 707 | Symmetric, up | 40° Symmetric, down | 90 CRI | SO

707-Z3-XX-4-48-CC-XX-XX-XX-X-0-Z-SO-359-U1S1-0-AL / WH-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	91	93	95	97
Total Lumens, 4' rail length (1219mm)	4631	4777	4875	4972
Lumens per foot (305mm)	1158	1194	1219	1243
Lumens per foot UP (305mm)	765	789	805	821
Lumens per foot DOWN (305mm)	393	406	414	422
Input Power (W), 4' rail length (1219mm)	51.5	51.5	51.5	51.5
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](#).



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

Report No: L031805801R01



Report No: L031805801R01

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-U1S1-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: 3/30/18 - 4/4/18

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-U1S1-AL
Driver Model Number:	MEAN WELL HLG-40H-36A(2 DRIVERS)
Total Lumens:	4874.99
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.43
Input Power (W):	51.45
Input Power Factor:	0.99
Current ATHD @ 120V(%):	9%
Current ATHD @ 277V(%):	N/A
Efficacy:	95
Color Rendering Index (CRI):	96
Correlated Color Temperature (K):	3384
Chromaticity Coordinate x:	0.4121
Chromaticity Coordinate y:	0.3942
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:45
Total Operating Time (Hours):	1:35

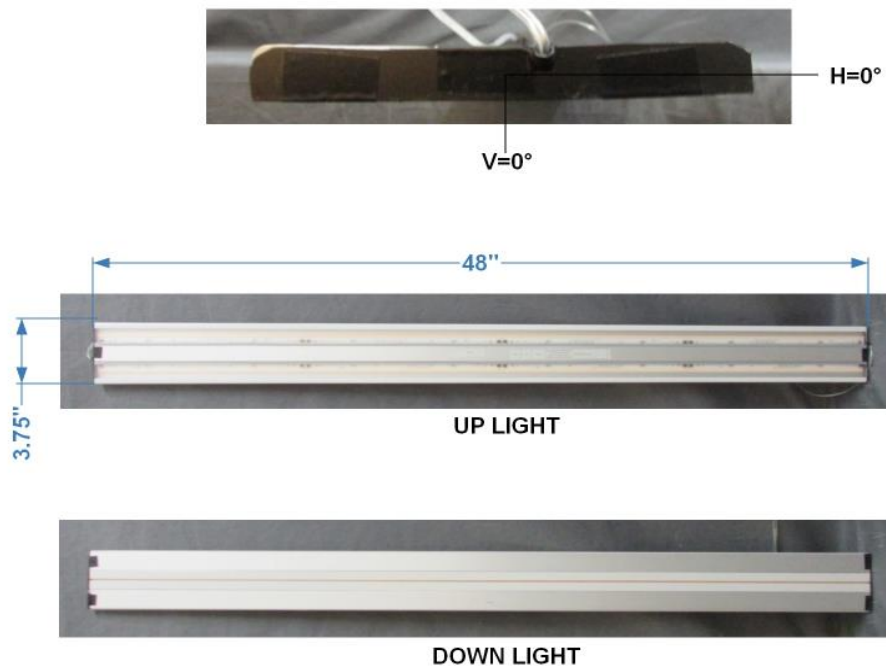
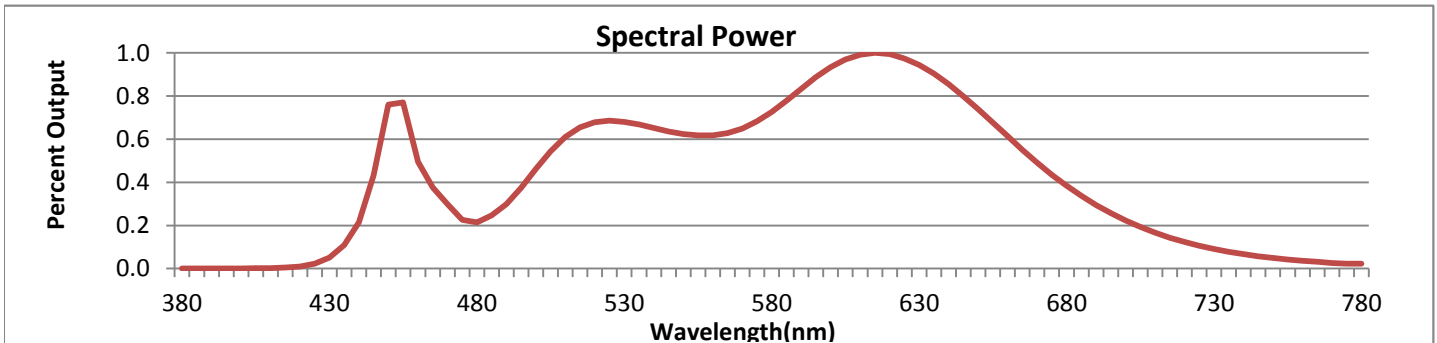


FIG. 1 LUMINAIRE

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



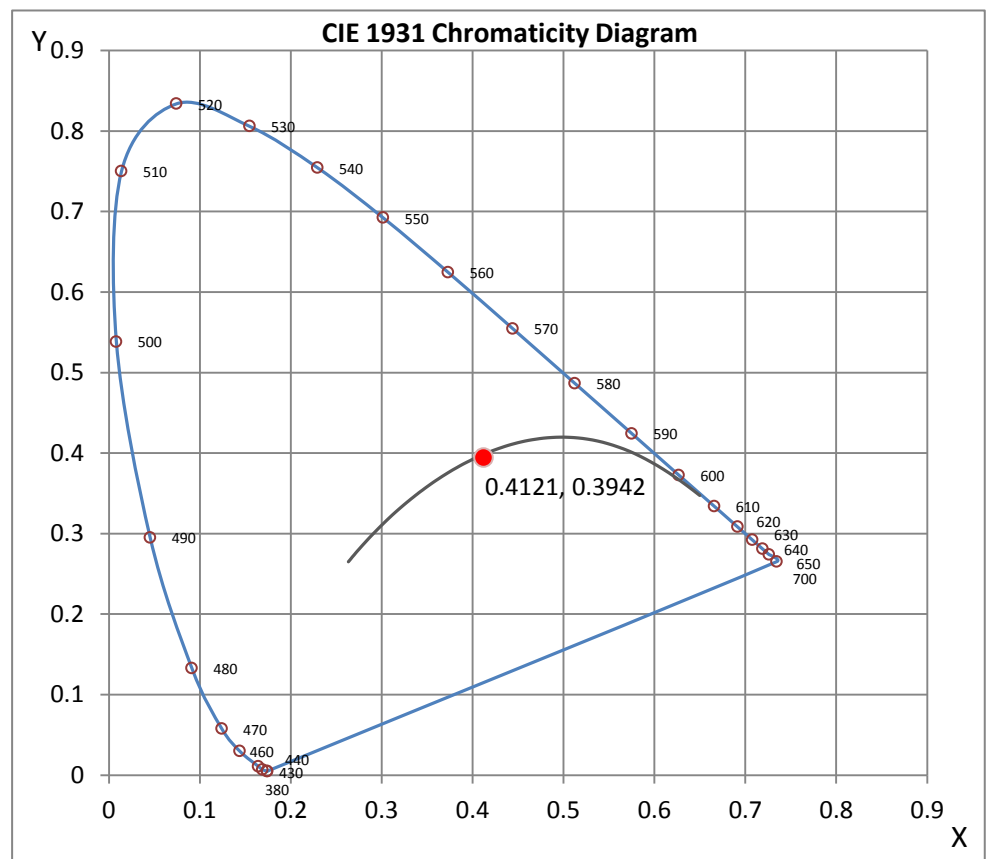
Wavelength	W/m ² nm	440	0.2145	510	0.6098	580	0.7268	650	0.7394	720	0.1231
380	0.0009	450	0.7609	520	0.6790	590	0.8334	660	0.6142	730	0.0907
390	0.0009	460	0.4951	530	0.6801	600	0.9341	670	0.4911	740	0.0666
400	0.0011	470	0.2992	540	0.6521	610	0.9918	680	0.3851	750	0.0490
410	0.0022	480	0.2139	550	0.6240	620	0.9947	690	0.2949	760	0.0361
420	0.0096	490	0.2995	560	0.6174	630	0.9439	700	0.2227	770	0.0264
430	0.0508	500	0.4624	570	0.6490	640	0.8547	710	0.1663	780	0.0229

CRI & CCT

x	0.4121
y	0.3942
u'	0.2387
v'	0.5137
CRI	96.30
CCT	3384
Duv	0.00008

R Values

R1	98.35
R2	99.55
R3	98.05
R4	95.77
R5	98.79
R6	95.93
R7	95.12
R8	89.02
R9	72.59
R10	98.95
R11	89.25
R12	81.55
R13	98.26
R14	97.86



*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
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Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L031805801R01.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L031805801R01
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 4/12/2018
[MANUFAC] Vode Lighting
[LUMCAT] 707-Z3-CC-Z-SO-359-U1S1-AL
[LUMINAIRE] ZipThree Suspended, 48", 3500K, 90 CRI, zipper board,
[MORE] symmetric lens up/40° 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, 51.45W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4875
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	95
Total Luminaire Watts	51.45
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	2257	3958	8357
55	1539	2516	5706
65	1244	1790	3820
75	965	1296	2582
85	453	588	1290

IES INDOOR REPORT
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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	1197	1197	1197	1197	1197	1197	1197	1197	1197	1197
1.0	1196	1196	1196	1196	1196	1196	1197	1197	1197	1197
3.0	1187	1187	1187	1187	1188	1188	1189	1190	1190	1191
5.0	1167	1168	1168	1169	1170	1172	1174	1175	1177	1179
7.0	1139	1140	1141	1143	1145	1148	1151	1155	1158	1162
9.0	1103	1103	1105	1108	1111	1116	1121	1127	1133	1139
11.0	1057	1058	1061	1065	1070	1077	1084	1093	1102	1112
13.0	1005	1006	1009	1015	1022	1031	1041	1053	1065	1078
15.0	946	947	951	958	967	979	992	1007	1024	1040
17.0	882	883	888	896	908	922	938	956	976	997
19.5	796	798	804	814	827	844	864	887	911	936
22.5	690	692	699	710	726	746	770	796	826	856
25.5	584	587	594	607	624	646	672	702	736	772
29.0	470	472	480	493	511	533	560	592	630	669
33.0	358	360	367	379	396	417	443	475	511	552
37.5	260	262	268	277	291	309	332	360	393	431
42.5	184	185	190	197	207	221	238	260	287	318
47.5	135	136	139	143	151	160	173	188	208	231
55.0	91	92	93	96	99	105	111	120	131	145
65.0	57	57	58	59	60	62	65	69	73	79
75.0	30	30	30	31	31	32	33	34	36	38
85.0	7	7	7	7	7	8	8	8	8	8
90.0	1	1	1	1	1	1	1	1	1	1
95.0	26	26	26	27	27	27	27	27	28	28
100.0	70	71	71	71	72	73	75	76	78	79
105.0	131	131	132	133	135	136	139	141	143	146
110.0	206	207	207	209	211	214	216	220	223	227
115.0	295	296	297	299	302	305	308	312	317	322
120.0	398	399	400	402	405	409	414	419	424	429
125.0	513	514	515	518	521	525	530	535	541	547
130.0	635	636	637	640	643	647	652	658	664	669
135.0	758	759	760	763	766	770	774	778	783	788
140.0	875	875	876	878	881	884	887	890	893	896
145.0	978	978	979	980	981	983	985	987	989	991
150.0	1063	1063	1063	1064	1064	1065	1066	1067	1068	1070
155.0	1130	1130	1131	1131	1131	1132	1132	1133	1134	1135
160.0	1184	1184	1184	1184	1184	1185	1185	1186	1186	1187
165.0	1225	1225	1225	1225	1225	1226	1226	1227	1227	1228
170.0	1255	1255	1256	1256	1256	1256	1257	1257	1257	1258
175.0	1276	1276	1276	1276	1276	1276	1276	1276	1277	1277
180.0	1283	1283	1283	1283	1283	1283	1283	1283	1283	1283

Vert. 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	1197	1197	1197	1197	1197	1197	1197	1197	1197
1.0	1197	1197	1197	1197	1197	1197	1197	1197	1197
3.0	1192	1193	1193	1194	1194	1195	1195	1195	1195
5.0	1181	1184	1186	1187	1189	1190	1191	1191	1191
7.0	1167	1170	1174	1177	1180	1183	1184	1186	1186
9.0	1146	1153	1159	1164	1169	1173	1176	1178	1178
11.0	1121	1131	1140	1148	1155	1161	1165	1167	1168
13.0	1092	1104	1117	1128	1137	1145	1151	1155	1156
15.0	1057	1074	1090	1104	1117	1127	1134	1139	1141

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CANDELA TABULATION - (Cont.)

17.0	1018	1039	1058	1077	1092	1106	1115	1121	1123
19.5	963	989	1014	1038	1057	1074	1087	1094	1097
22.5	890	922	954	983	1008	1030	1046	1056	1059
25.5	810	848	886	921	952	977	998	1010	1014
29.0	712	756	798	839	876	908	931	946	951
33.0	597	644	691	738	780	816	843	859	866
37.5	474	520	568	617	661	700	729	747	754
42.5	355	395	439	484	526	563	593	611	618
47.5	259	291	326	364	399	432	458	474	481
55.0	162	181	202	226	249	270	289	300	305
65.0	86	95	104	115	125	135	143	149	151
75.0	40	43	46	50	54	57	60	62	63
85.0	9	9	9	10	10	10	11	11	11
90.0	1	1	1	1	1	1	1	1	1
95.0	28	28	29	30	30	30	30	30	30
100.0	81	82	83	84	85	86	86	86	86
105.0	148	151	153	155	156	157	158	158	158
110.0	230	234	237	240	242	244	245	245	245
115.0	327	331	335	339	341	343	345	346	346
120.0	435	441	445	449	453	455	457	458	459
125.0	553	559	564	568	571	574	576	578	578
130.0	675	680	684	688	690	693	696	698	699
135.0	792	796	799	802	805	808	810	812	813
140.0	899	902	904	907	909	911	914	916	917
145.0	992	994	996	998	1000	1003	1005	1007	1008
150.0	1071	1072	1074	1076	1078	1080	1082	1083	1084
155.0	1136	1137	1138	1140	1142	1144	1145	1146	1147
160.0	1188	1189	1190	1192	1193	1195	1196	1197	1197
165.0	1229	1230	1231	1232	1233	1234	1235	1235	1235
170.0	1259	1259	1260	1260	1261	1262	1262	1262	1262
175.0	1277	1277	1277	1277	1278	1278	1278	1278	1278
180.0	1283	1283	1283	1283	1283	1283	1283	1283	1283

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	384.55	N.A.	7.90
0-30	731.18	N.A.	15.00
0-40	1024.53	N.A.	21.00
0-60	1433.1	N.A.	29.40
0-80	1625.49	N.A.	33.30
0-90	1655.39	N.A.	34.00
10-90	1564.98	N.A.	32.10
20-40	639.98	N.A.	13.10
20-50	907.73	N.A.	18.60
40-70	532.59	N.A.	10.90
60-80	192.39	N.A.	3.90
70-80	68.37	N.A.	1.40
80-90	29.90	N.A.	0.60
90-110	194.15	N.A.	4.00
90-120	515.31	N.A.	10.60
90-130	1004.73	N.A.	20.60
90-150	2228.29	N.A.	45.70
90-180	3219.61	N.A.	66.00
110-180	3025.46	N.A.	62.10
0-180	4874.99	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	90.40
10-20	294.15
20-30	346.63
30-40	293.35
40-50	267.75
50-60	140.82
60-70	124.02
70-80	68.37
80-90	29.90
90-100	37.00
100-110	157.15
110-120	321.16
120-130	489.42
130-140	605.11
140-150	618.45
150-160	523.22
160-170	346.81
170-180	121.30

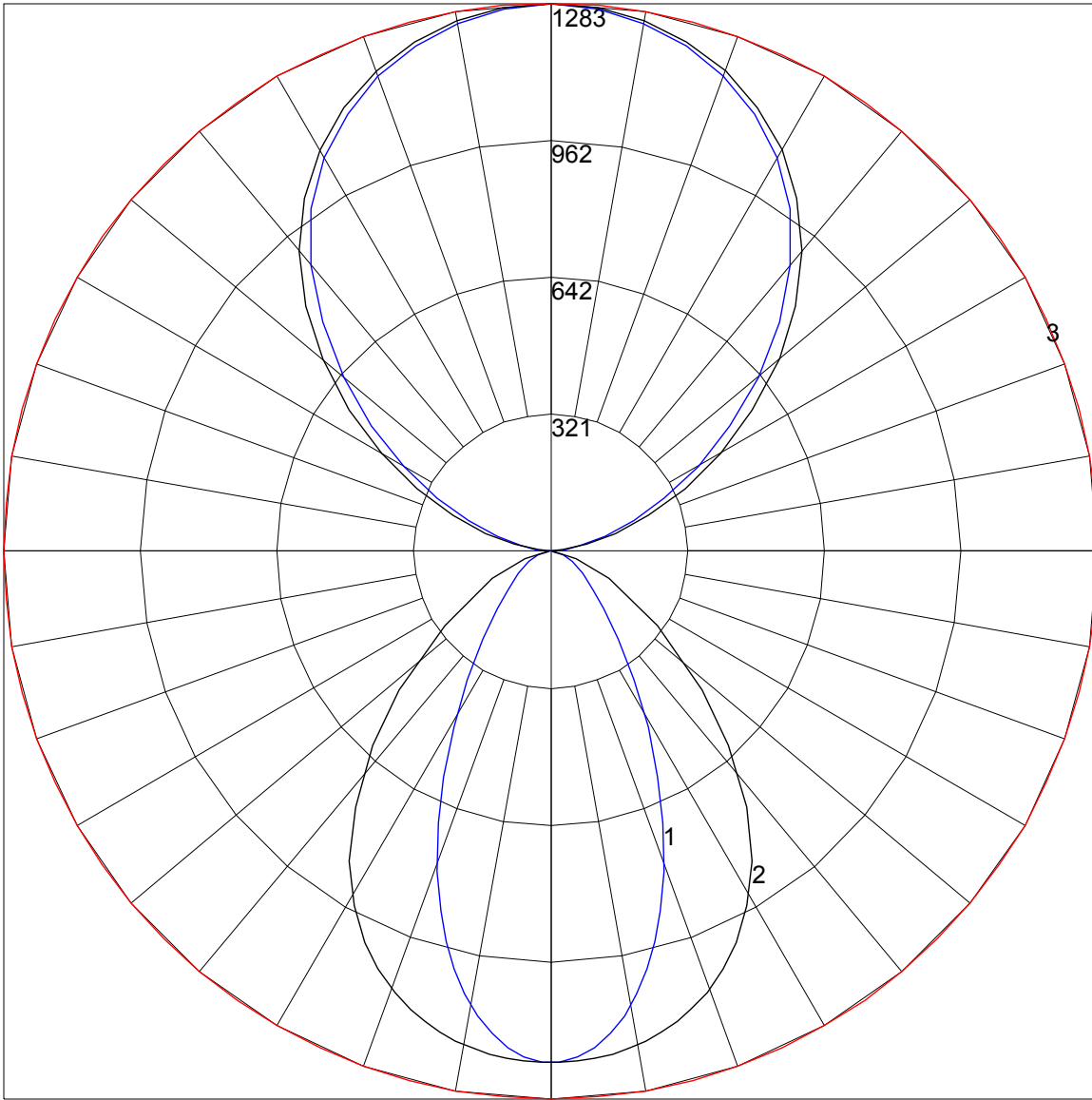
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	103	103	103	103	93	93	93	93	74	74	74	57	57	57	41	41	41	34
1	95	91	87	84	85	82	79	76	66	64	62	51	50	48	37	37	36	30
2	87	80	74	69	78	72	68	64	58	55	52	46	43	42	34	32	31	26
3	80	71	64	59	72	64	59	54	52	48	45	41	38	36	30	29	27	23
4	73	63	56	50	66	57	51	46	47	42	39	37	34	31	28	26	24	20
5	67	57	49	44	61	52	45	40	42	38	34	34	30	28	25	23	22	18
6	62	51	44	38	56	47	40	35	38	34	30	31	27	25	23	21	20	16
7	58	46	39	34	52	42	36	31	35	30	27	28	25	22	22	19	18	15
8	54	42	35	30	49	39	32	28	32	27	24	26	23	20	20	18	16	14
9	50	39	32	27	45	36	29	25	30	25	22	24	21	18	19	16	15	13
10	47	36	29	24	43	33	27	23	27	23	20	22	19	17	17	15	14	12

POLAR GRAPH



Maximum Candela = 1283 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.)