

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-AL / WH-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	105	108	110	114
Total Lumens, 4' rail length (1219mm)	5332	5500	5613	5725
Lumens per foot (305mm)	1333	1375	1403	1431
Lumens per foot UP (305mm)	760	784	800	816
Lumens per foot DOWN (305mm)	573	591	603	615
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: L031805806R01 **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-U2S7-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: 4/5/18 - 4/6/18

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-U2S7-AL
Driver Model Number:	MEAN WELL HLG-40H-36A(2 DRIVERS)
Total Lumens:	5612.64
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.43
Input Power (W):	51.25
Input Power Factor:	0.99
Current ATHD @ 120V(%):	9%
Current ATHD @ 277V(%):	N/A
Efficacy:	110
Color Rendering Index (CRI):	96
Correlated Color Temperature (K):	3390
Chromaticity Coordinate x:	0.4117
Chromaticity Coordinate y:	0.3940
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	1:40

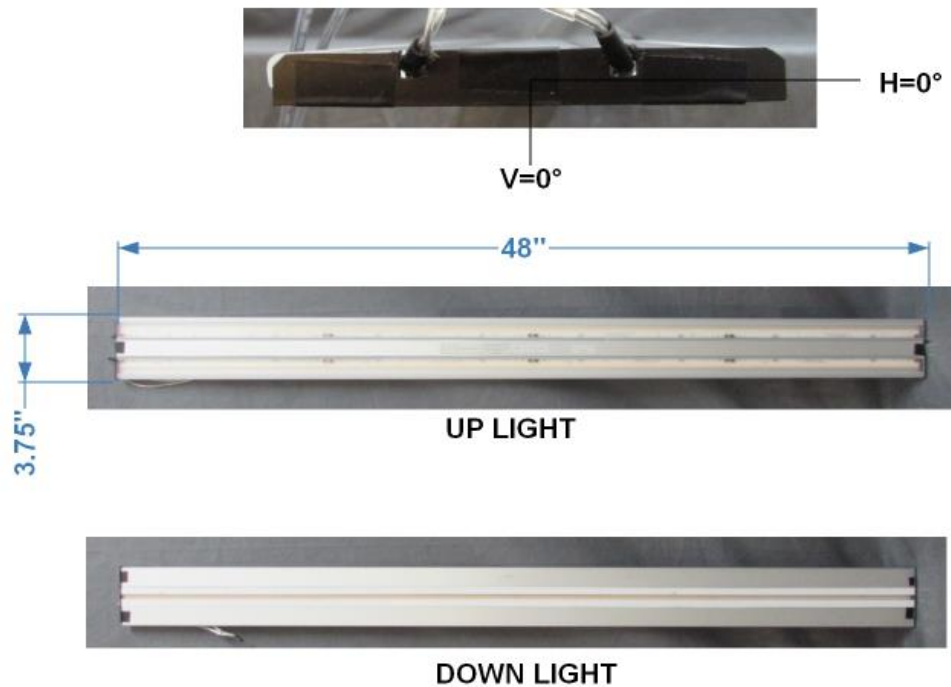
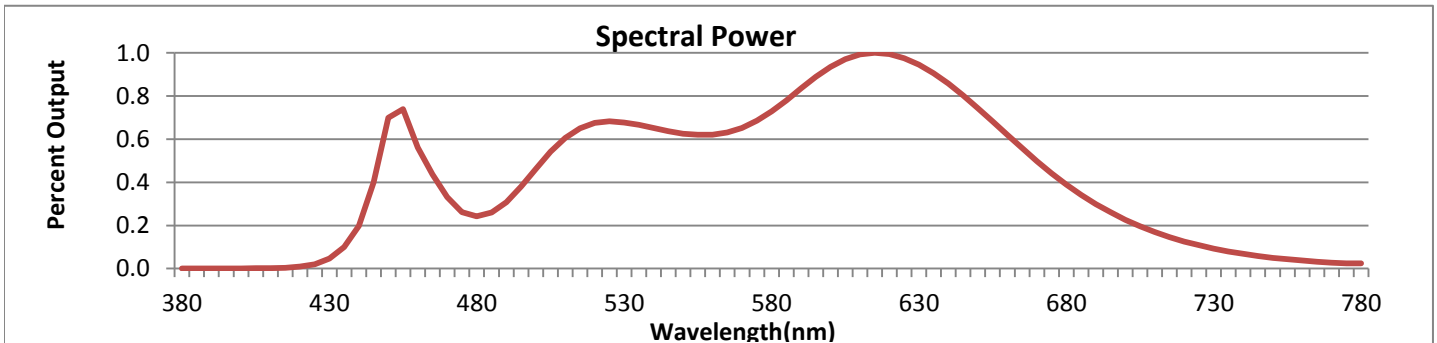


FIG. 1 LUMINAIRE

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



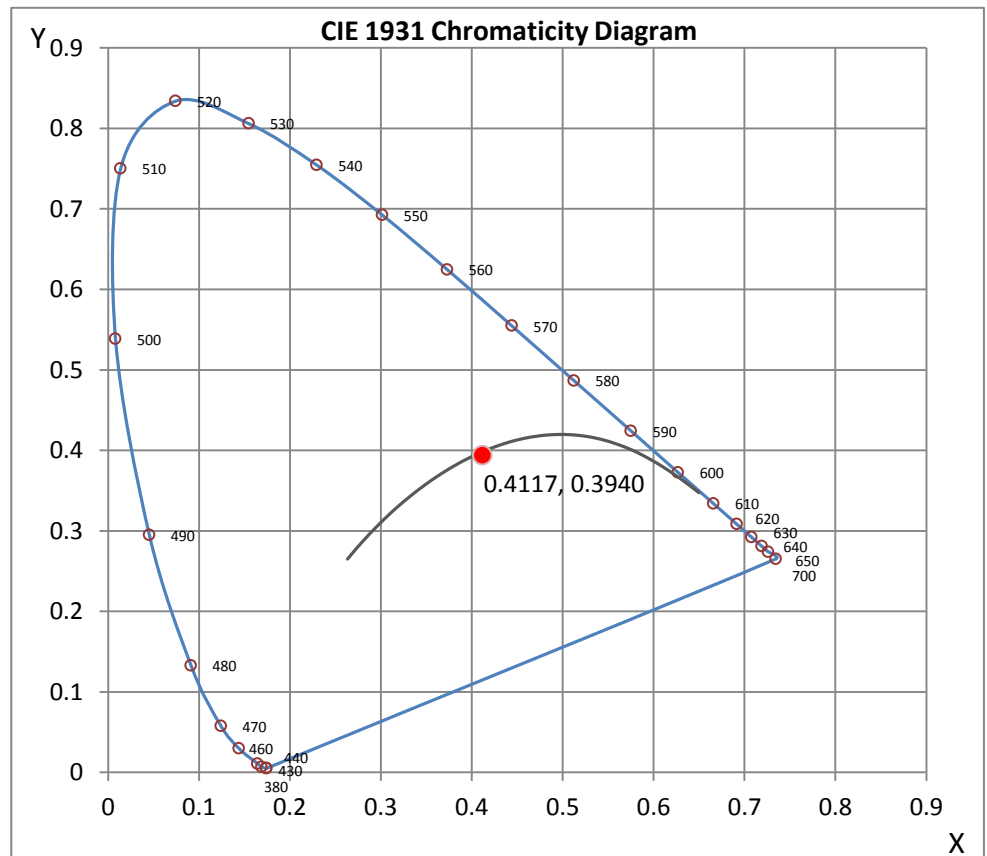
Wavelength	W/m ² nm	440	0.1974	510	0.6064	580	0.7293	650	0.7446	720	0.1254
380	0.0009	450	0.6997	520	0.6758	590	0.8359	660	0.6202	730	0.0926
390	0.0010	460	0.5607	530	0.6775	600	0.9355	670	0.4976	740	0.0683
400	0.0011	470	0.3316	540	0.6521	610	0.9931	680	0.3897	750	0.0502
410	0.0022	480	0.2423	550	0.6258	620	0.9955	690	0.2994	760	0.0371
420	0.0088	490	0.3075	560	0.6207	630	0.9455	700	0.2266	770	0.0273
430	0.0463	500	0.4626	570	0.6525	640	0.8578	710	0.1697	780	0.0236

CRI & CCT

x	0.4117
y	0.3940
u'	0.2385
v'	0.5136
CRI	96.30
CCT	3390
Duv	0.00007

R Values

R1	98.09
R2	99.43
R3	98.86
R4	96.72
R5	98.38
R6	95.35
R7	94.71
R8	88.98
R9	73.40
R10	99.63
R11	90.29
R12	81.09
R13	97.88
R14	98.29



*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 : L031805806R01.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L031805806R01
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 4/12/2018
[MANUFAC] Vode Lighting
[LUMCAT] 707-Z3-CC-Z-SO-359-U2S7-AL
[LUMINAIRE] ZipThree Suspended, 48", 3500K, 90 CRI, zipper board,
[MORE] symmetric lens with edgeglow up/80° 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, 51.25W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5613
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	110
Total Luminaire Watts	51.25
Ballast Factor	1.00
CIE Type	General Diffuse
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	6538	8701	9041
55	3484	5605	6380
65	2008	3330	4402
75	1254	1978	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	1223	1223	1223	1223	1223	1223	1223	1223	1223	1223
1.0	1223	1223	1223	1223	1223	1223	1223	1223	1223	1223
3.0	1221	1221	1221	1221	1221	1221	1221	1221	1221	1221
5.0	1217	1217	1217	1217	1218	1218	1218	1218	1218	1218
7.0	1212	1212	1212	1212	1212	1212	1213	1213	1213	1213
9.0	1204	1204	1204	1205	1205	1205	1205	1206	1206	1206
11.0	1195	1195	1195	1195	1196	1196	1196	1197	1197	1198
13.0	1183	1183	1183	1183	1184	1185	1185	1186	1186	1187
15.0	1168	1169	1169	1169	1170	1171	1172	1173	1173	1174
17.0	1151	1152	1152	1153	1154	1155	1156	1157	1158	1159
19.5	1126	1126	1127	1128	1129	1131	1133	1134	1135	1136
22.5	1087	1088	1089	1091	1093	1096	1098	1100	1102	1104
25.5	1039	1040	1042	1044	1048	1052	1056	1059	1062	1064
29.0	967	968	971	976	982	988	994	1000	1004	1007
33.0	863	865	870	877	887	897	907	916	923	928
37.5	720	723	730	740	754	769	785	800	811	820
42.5	544	547	556	569	586	606	627	648	666	679
47.5	380	383	391	404	422	443	465	489	511	528
55.0	206	207	213	222	234	249	267	286	306	323
65.0	92	93	95	98	103	110	118	127	137	147
75.0	39	40	40	41	43	45	47	50	54	58
85.0	8	8	8	8	8	9	9	9	10	10
90.0	15	15	15	14	14	13	12	11	10	9
95.0	41	41	41	41	40	40	39	38	38	37
100.0	86	86	86	86	86	86	86	86	86	86
105.0	141	142	142	143	143	144	145	146	148	149
110.0	212	213	213	214	216	218	220	222	225	227
115.0	299	299	300	302	304	307	310	313	317	321
120.0	400	401	402	404	406	410	413	418	423	427
125.0	514	515	516	518	521	525	529	534	539	545
130.0	636	636	638	640	643	647	651	656	661	666
135.0	757	758	759	761	764	767	771	775	779	783
140.0	871	872	873	874	876	878	881	884	887	889
145.0	971	971	971	972	973	975	976	978	979	981
150.0	1052	1052	1052	1053	1053	1054	1055	1055	1056	1057
155.0	1116	1116	1117	1117	1117	1117	1118	1118	1119	1119
160.0	1167	1167	1167	1167	1168	1168	1169	1169	1169	1170
165.0	1206	1206	1206	1206	1206	1206	1206	1206	1207	1207
170.0	1233	1232	1233	1233	1233	1233	1233	1233	1233	1233
175.0	1248	1248	1248	1248	1248	1249	1248	1249	1249	1249
180.0	1254	1254	1254	1254	1254	1254	1254	1254	1254	1254

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	1223	1223	1223	1223	1223	1223	1223	1223	1223
1.0	1223	1223	1223	1223	1223	1223	1223	1223	1223
3.0	1221	1221	1221	1221	1221	1221	1222	1222	1222
5.0	1218	1218	1218	1218	1218	1218	1218	1218	1218
7.0	1213	1213	1213	1213	1214	1214	1214	1214	1214
9.0	1206	1207	1207	1207	1207	1207	1207	1207	1207
11.0	1198	1198	1198	1199	1199	1199	1199	1199	1199
13.0	1187	1188	1188	1188	1188	1188	1188	1188	1189
15.0	1174	1175	1175	1176	1176	1176	1176	1176	1176

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CANDELA TABULATION - (Cont.)

17.0	1159	1160	1160	1160	1160	1160	1160	1160	1160
19.5	1137	1137	1138	1138	1137	1137	1137	1137	1137
22.5	1104	1105	1105	1104	1104	1103	1102	1102	1102
25.5	1065	1065	1065	1064	1062	1061	1060	1059	1059
29.0	1009	1009	1008	1006	1004	1002	1000	999	999
33.0	931	931	930	927	924	920	918	916	915
37.5	825	826	825	821	816	811	807	805	803
42.5	688	691	690	686	680	675	670	666	665
47.5	541	547	547	544	539	533	529	525	524
55.0	337	346	350	351	349	346	343	341	341
65.0	156	163	169	172	174	175	175	174	174
75.0	62	65	68	71	72	73	74	74	74
85.0	11	11	12	13	13	13	13	13	13
90.0	8	7	6	4	4	3	2	1	1
95.0	36	35	34	33	32	31	31	30	29
100.0	86	86	86	85	85	85	84	84	84
105.0	150	152	153	154	154	155	155	155	155
110.0	230	233	235	237	239	239	240	240	240
115.0	325	328	332	335	337	338	339	340	340
120.0	432	437	441	445	448	450	451	452	452
125.0	550	555	559	563	566	568	570	570	571
130.0	671	675	679	682	685	687	688	689	689
135.0	787	790	793	795	798	799	800	801	801
140.0	892	893	895	897	899	900	901	901	902
145.0	982	983	985	986	987	987	988	989	989
150.0	1058	1059	1060	1060	1061	1061	1062	1062	1062
155.0	1120	1121	1121	1121	1122	1122	1123	1123	1123
160.0	1170	1170	1170	1170	1170	1171	1171	1171	1171
165.0	1207	1207	1207	1207	1207	1207	1207	1208	1208
170.0	1233	1233	1233	1233	1233	1233	1233	1234	1234
175.0	1249	1249	1249	1249	1249	1249	1249	1249	1249
180.0	1254	1254	1254	1254	1254	1254	1254	1254	1254

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	425.42	N.A.	7.60
0-30	881.48	N.A.	15.70
0-40	1338.39	N.A.	23.80
0-60	2061.1	N.A.	36.70
0-80	2369.81	N.A.	42.20
0-90	2411.67	N.A.	43.00
10-90	2317.71	N.A.	41.30
20-40	912.97	N.A.	16.30
20-50	1383.98	N.A.	24.70
40-70	929.86	N.A.	16.60
60-80	308.71	N.A.	5.50
70-80	101.56	N.A.	1.80
80-90	41.85	N.A.	0.70
90-110	206.32	N.A.	3.70
90-120	526.61	N.A.	9.40
90-130	1013.61	N.A.	18.10
90-150	2226.27	N.A.	39.70
90-180	3200.98	N.A.	57.00
110-180	2994.66	N.A.	53.40
0-180	5612.64	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	93.96
10-20	331.47
20-30	456.06
30-40	456.91
40-50	471.01
50-60	251.70
60-70	207.15
70-80	101.56
80-90	41.85
90-100	45.38
100-110	160.94
110-120	320.29
120-130	487.00
130-140	601.03
140-150	611.63
150-160	515.48
160-170	340.53
170-180	118.70

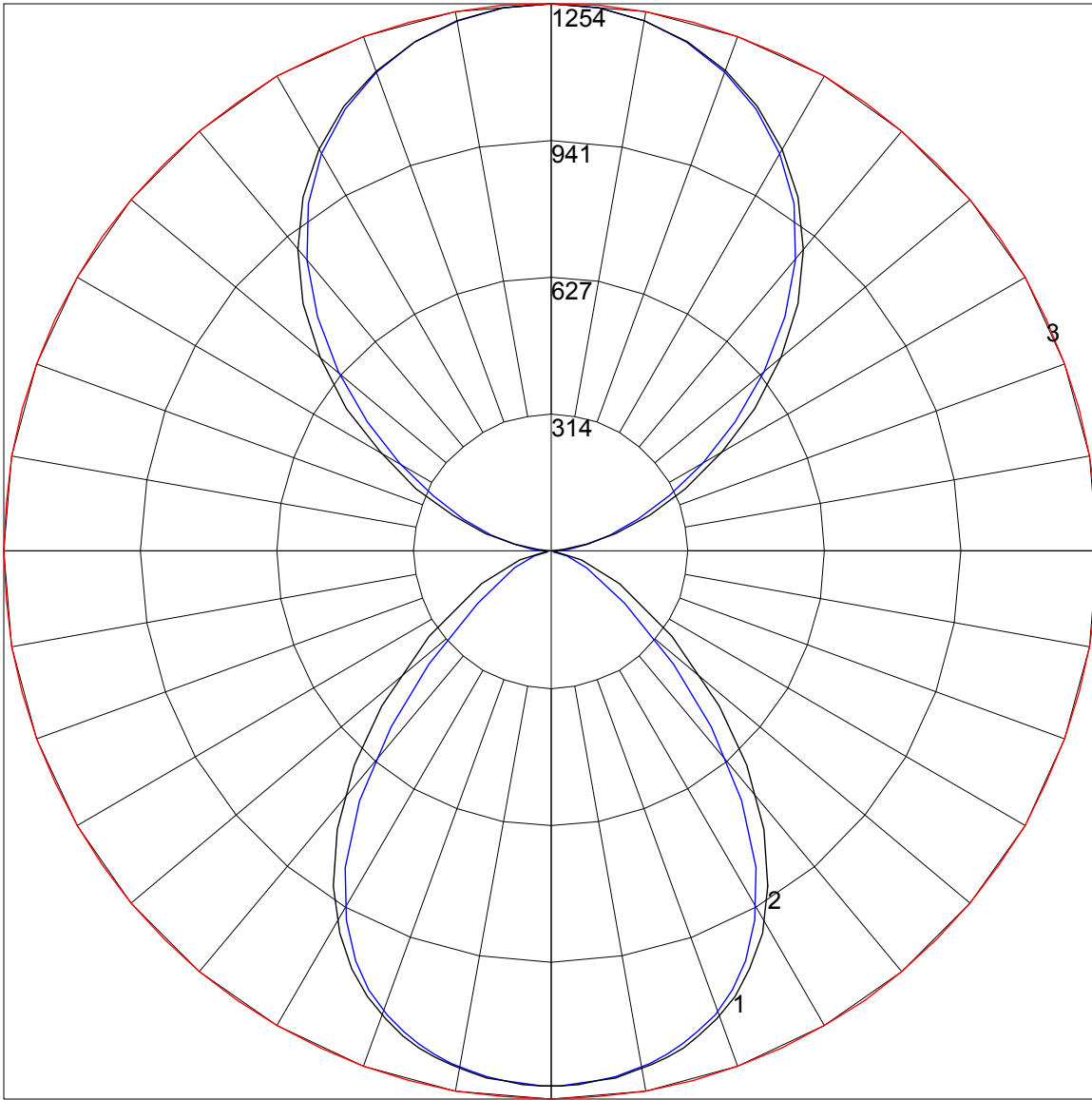
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	105	105	105	105	96	96	96	96	79	79	79	64	64	64	50	50	50	43	0
1	97	93	89	86	88	85	82	79	70	68	66	57	55	54	45	44	43	37	0
2	88	81	76	71	81	75	70	66	62	59	56	51	48	46	40	38	37	32	0
3	81	72	65	60	74	66	60	55	55	51	47	45	42	40	36	34	32	28	0
4	74	64	57	51	68	59	52	47	49	45	41	41	37	34	32	30	28	24	0
5	68	57	50	44	62	53	46	41	45	39	36	37	33	30	29	27	25	21	0
6	63	52	44	38	58	48	41	36	40	35	31	33	30	27	27	24	22	19	0
7	59	47	39	34	53	43	36	32	37	31	28	30	27	24	25	22	20	17	0
8	54	42	35	30	50	39	33	28	34	28	25	28	24	21	23	20	18	16	0
9	51	39	32	27	46	36	30	25	31	26	22	26	22	19	21	18	16	14	0
10	47	36	29	24	43	33	27	23	28	23	20	24	20	17	20	17	15	13	0

POLAR GRAPH



Maximum Candela = 1254 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.)