

IES Report

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

707-Z3-XX-4-48-CC-XX-XX-XX-X-0-Z-SO-359-U2S1-0-AL / WH-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	90	93	95	99
Total Lumens, 4' rail length (1219mm)	4600	4746	4843	4939
Lumens per foot (305mm)	1150	1186	1211	1235
Lumens per foot UP (305mm)	760	784	800	816
Lumens per foot DOWN (305mm)	390	402	410	419
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.



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

Report No: L031805802R01



Report No: L031805802R01

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-U2S1-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-U2S1-AL
Driver Model Number:	MEAN WELL HLG-40H-36A(2 DRIVERS)
Total Lumens:	4842.53
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.43
Input Power (W):	51.26
Input Power Factor:	0.99
Current ATHD @ 120V(%):	9%
Current ATHD @ 277V(%):	N/A
Efficacy:	94
Color Rendering Index (CRI):	96
Correlated Color Temperature (K):	3396
Chromaticity Coordinate x:	0.4112
Chromaticity Coordinate y:	0.3934
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:55
Total Operating Time (Hours):	1:55

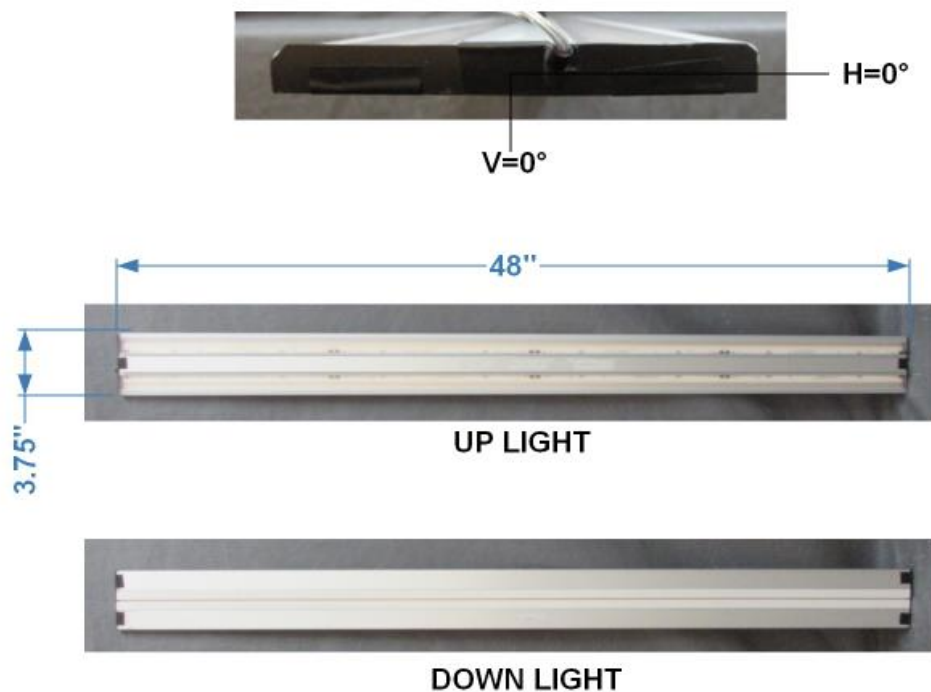
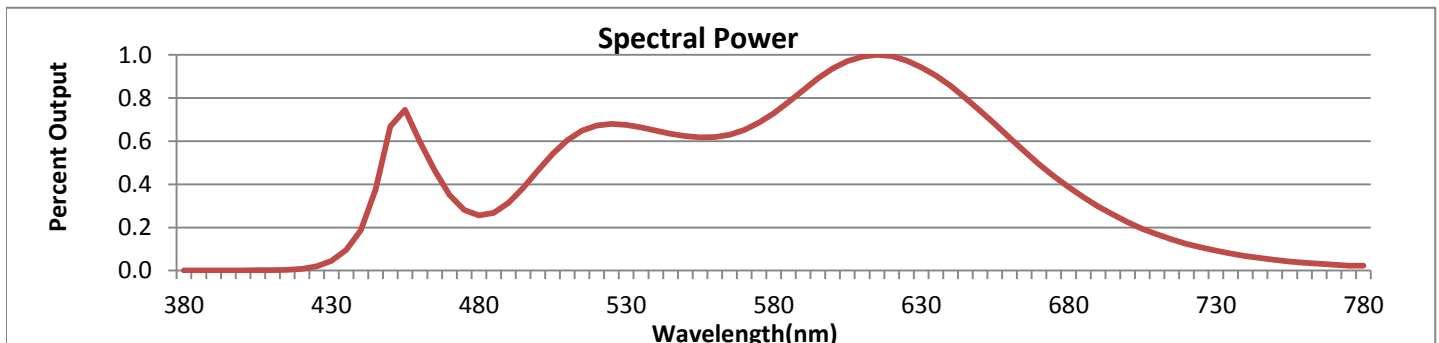


FIG. 1 LUMINAIRE



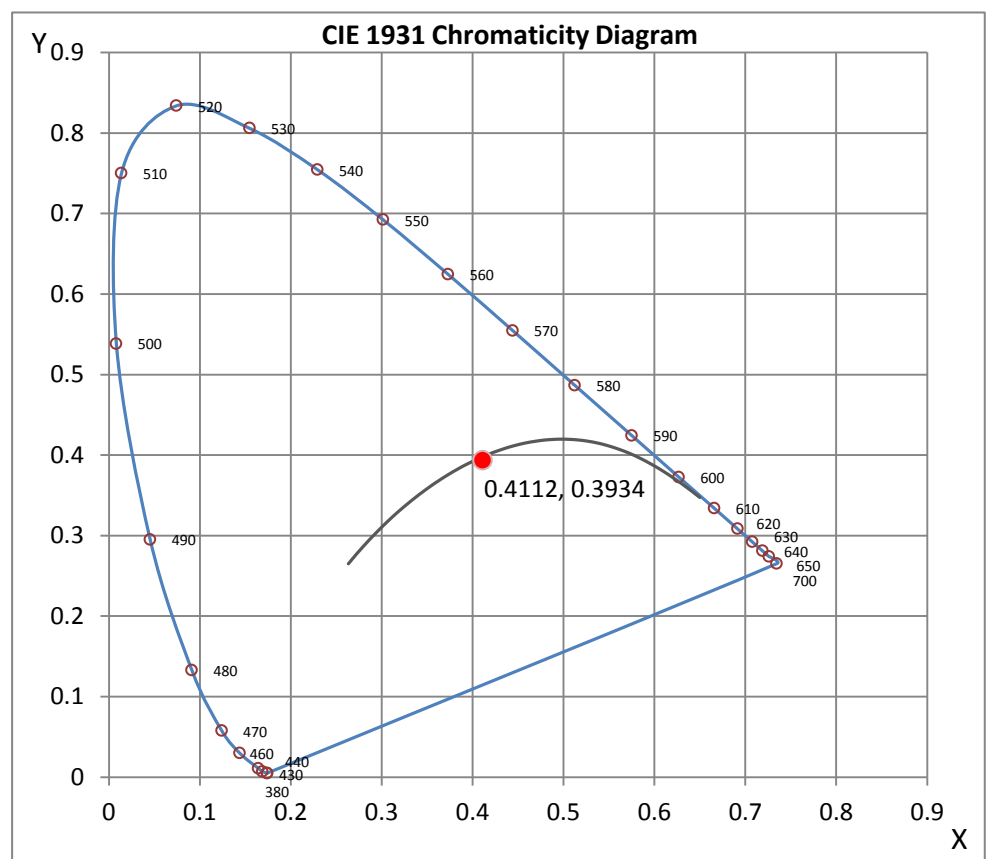
Wavelength	W/m ² nm	440	0.1875	510	0.6047	580	0.7297	650	0.7411	720	0.1241
380	0.0008	450	0.6683	520	0.6727	590	0.8364	660	0.6164	730	0.0919
390	0.0009	460	0.5955	530	0.6751	600	0.9363	670	0.4938	740	0.0674
400	0.0011	470	0.3504	540	0.6493	610	0.9924	680	0.3874	750	0.0497
410	0.0021	480	0.2551	550	0.6236	620	0.9947	690	0.2969	760	0.0365
420	0.0085	490	0.3132	560	0.6189	630	0.9434	700	0.2244	770	0.0269
430	0.0443	500	0.4630	570	0.6514	640	0.8560	710	0.1681	780	0.0232

CRI & CCT

x	0.4112
y	0.3934
u'	0.2384
v'	0.5132
CRI	96.10
CCT	3396
Duv	-0.00008

R Values

R1	97.86
R2	99.04
R3	99.21
R4	97.06
R5	98.03
R6	94.83
R7	94.28
R8	88.78
R9	73.55
R10	98.77
R11	90.66
R12	80.81
R13	97.57
R14	98.56





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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 Released by:

Jeff Ahn
Engineering Manager

Test Report Reviewed by:

Steve Kang
Quality Assurance

**Attached are photometric data reports. Total number of pages: 10*

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



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Photometric Test Report

IES INDOOR REPORT

PHOTOMETRIC FILENAME : L031805802R01.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002

[TEST] L031805802R01

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

[ISSUEDATE] 4/12/2018

[MANUFAC] Vode Lighting

[LUMCAT] 707-Z3-CC-Z-SO-359-U2S1-AL

[LUMINAIRE] ZipThree Suspended, 48", 3500K, 90 CRI, zipper board,

[MORE] symmetric lens with edgeglow 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, 51.26W

[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4843
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	94
Total Luminaire Watts	51.26
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	2236	3907	8174
55	1539	2481	5538
65	1222	1767	3669
75	965	1262	2500
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	1181	1181	1181	1181	1181	1181	1181	1181	1181	1181
1.0	1179	1179	1179	1179	1180	1180	1180	1180	1180	1180
3.0	1171	1171	1171	1172	1172	1173	1173	1174	1174	1175
5.0	1154	1154	1155	1156	1157	1158	1159	1161	1163	1165
7.0	1128	1129	1130	1131	1133	1136	1139	1142	1146	1149
9.0	1094	1095	1096	1099	1102	1106	1111	1117	1123	1129
11.0	1052	1053	1055	1059	1064	1070	1077	1085	1094	1102
13.0	1001	1002	1005	1011	1018	1026	1036	1047	1059	1071
15.0	944	945	949	956	965	976	989	1004	1019	1035
17.0	880	882	887	895	906	920	936	954	973	993
19.5	794	796	802	812	826	843	863	886	910	935
22.5	687	689	696	708	724	744	768	795	825	856
25.5	580	583	590	603	621	643	669	701	735	771
29.0	465	467	475	488	506	529	557	590	627	667
33.0	353	356	363	374	391	412	439	471	508	549
37.5	257	259	264	274	288	306	328	356	390	427
42.5	182	184	188	195	205	218	235	257	284	314
47.5	134	135	138	143	150	159	171	186	205	228
55.0	91	92	93	96	99	105	111	119	130	143
65.0	56	57	57	58	60	62	65	68	73	78
75.0	30	30	30	30	31	32	33	34	35	37
85.0	7	7	8	8	8	8	8	8	8	8
90.0	15	15	15	14	13	13	12	11	10	9
95.0	42	42	42	41	41	40	40	39	38	37
100.0	86	86	86	86	86	86	86	86	86	86
105.0	142	142	143	143	144	145	146	147	148	149
110.0	213	213	214	215	217	218	220	223	225	228
115.0	300	300	301	303	305	307	310	314	317	321
120.0	401	402	403	405	407	410	414	418	423	427
125.0	515	515	517	518	521	525	529	534	539	544
130.0	636	636	637	639	642	646	650	655	660	665
135.0	756	756	758	760	762	766	769	773	778	782
140.0	869	870	871	872	874	877	879	882	885	888
145.0	969	969	969	970	972	973	975	977	979	980
150.0	1051	1051	1051	1052	1052	1053	1054	1055	1055	1056
155.0	1116	1116	1116	1116	1116	1117	1117	1118	1118	1119
160.0	1167	1167	1167	1167	1167	1168	1168	1168	1169	1169
165.0	1205	1205	1205	1206	1206	1206	1206	1206	1206	1206
170.0	1233	1233	1233	1233	1233	1233	1233	1233	1233	1234
175.0	1250	1250	1250	1250	1250	1250	1250	1250	1250	1250
180.0	1256	1256	1256	1256	1256	1256	1256	1256	1256	1256

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	1181	1181	1181	1181	1181	1181	1181	1181	1181
1.0	1180	1180	1180	1180	1180	1180	1180	1180	1180
3.0	1176	1176	1177	1177	1178	1178	1178	1179	1179
5.0	1167	1168	1170	1171	1173	1174	1175	1175	1175
7.0	1153	1156	1160	1163	1165	1167	1169	1170	1170
9.0	1135	1140	1146	1151	1155	1158	1161	1162	1163
11.0	1111	1120	1128	1136	1142	1147	1151	1153	1153
13.0	1084	1095	1107	1117	1125	1132	1138	1141	1142
15.0	1051	1067	1081	1095	1106	1115	1122	1126	1128

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CANDELA TABULATION - (Cont.)

17.0	1014	1033	1052	1069	1083	1095	1104	1109	1111
19.5	961	986	1009	1032	1050	1065	1076	1083	1086
22.5	889	921	951	979	1003	1022	1037	1046	1049
25.5	810	848	884	918	947	972	990	1000	1004
29.0	710	754	797	838	873	902	924	937	941
33.0	594	643	690	736	776	810	835	851	856
37.5	471	517	565	613	655	693	721	738	744
42.5	351	391	433	478	519	556	583	601	606
47.5	256	287	321	357	392	424	448	463	469
55.0	159	178	198	221	243	264	281	291	296
65.0	85	93	102	112	121	131	139	144	145
75.0	40	42	46	49	52	56	58	60	61
85.0	9	9	9	10	10	10	10	11	11
90.0	7	6	5	4	3	3	2	1	1
95.0	36	35	34	33	32	31	31	30	30
100.0	86	86	86	86	85	85	85	84	84
105.0	151	152	153	154	154	155	155	155	155
110.0	230	233	235	237	239	240	240	240	241
115.0	325	328	332	335	337	339	340	340	340
120.0	432	437	441	445	448	450	451	453	453
125.0	549	554	559	563	566	568	570	572	572
130.0	670	675	679	682	685	687	689	690	691
135.0	786	790	793	795	798	800	801	803	803
140.0	891	893	895	898	899	901	902	903	903
145.0	982	983	985	986	987	988	989	990	991
150.0	1057	1059	1060	1061	1061	1062	1063	1064	1064
155.0	1120	1121	1121	1122	1122	1123	1124	1124	1124
160.0	1169	1170	1170	1171	1171	1172	1172	1172	1172
165.0	1207	1207	1207	1208	1208	1209	1209	1209	1209
170.0	1234	1234	1234	1234	1235	1235	1235	1235	1235
175.0	1250	1250	1250	1250	1250	1251	1251	1251	1251
180.0	1256	1256	1256	1256	1256	1256	1256	1256	1256

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	381.55	N.A.	7.90
0-30	726.60	N.A.	15.00
0-40	1017.76	N.A.	21.00
0-60	1420.72	N.A.	29.30
0-80	1609.57	N.A.	33.20
0-90	1641.19	N.A.	33.90
10-90	1551.86	N.A.	32.00
20-40	636.21	N.A.	13.10
20-50	900.63	N.A.	18.60
40-70	524.74	N.A.	10.80
60-80	188.84	N.A.	3.90
70-80	67.07	N.A.	1.40
80-90	31.62	N.A.	0.70
90-110	206.78	N.A.	4.30
90-120	527.47	N.A.	10.90
90-130	1014.51	N.A.	20.90
90-150	2226.47	N.A.	46.00
90-180	3201.34	N.A.	66.10
110-180	2994.57	N.A.	61.80
0-180	4842.53	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	89.33
10-20	292.23
20-30	345.04
30-40	291.16
40-50	264.43
50-60	138.54
60-70	121.78
70-80	67.07
80-90	31.62
90-100	45.52
100-110	161.26
110-120	320.69
120-130	487.04
130-140	600.63
140-150	611.33
150-160	515.46
160-170	340.60
170-180	118.82

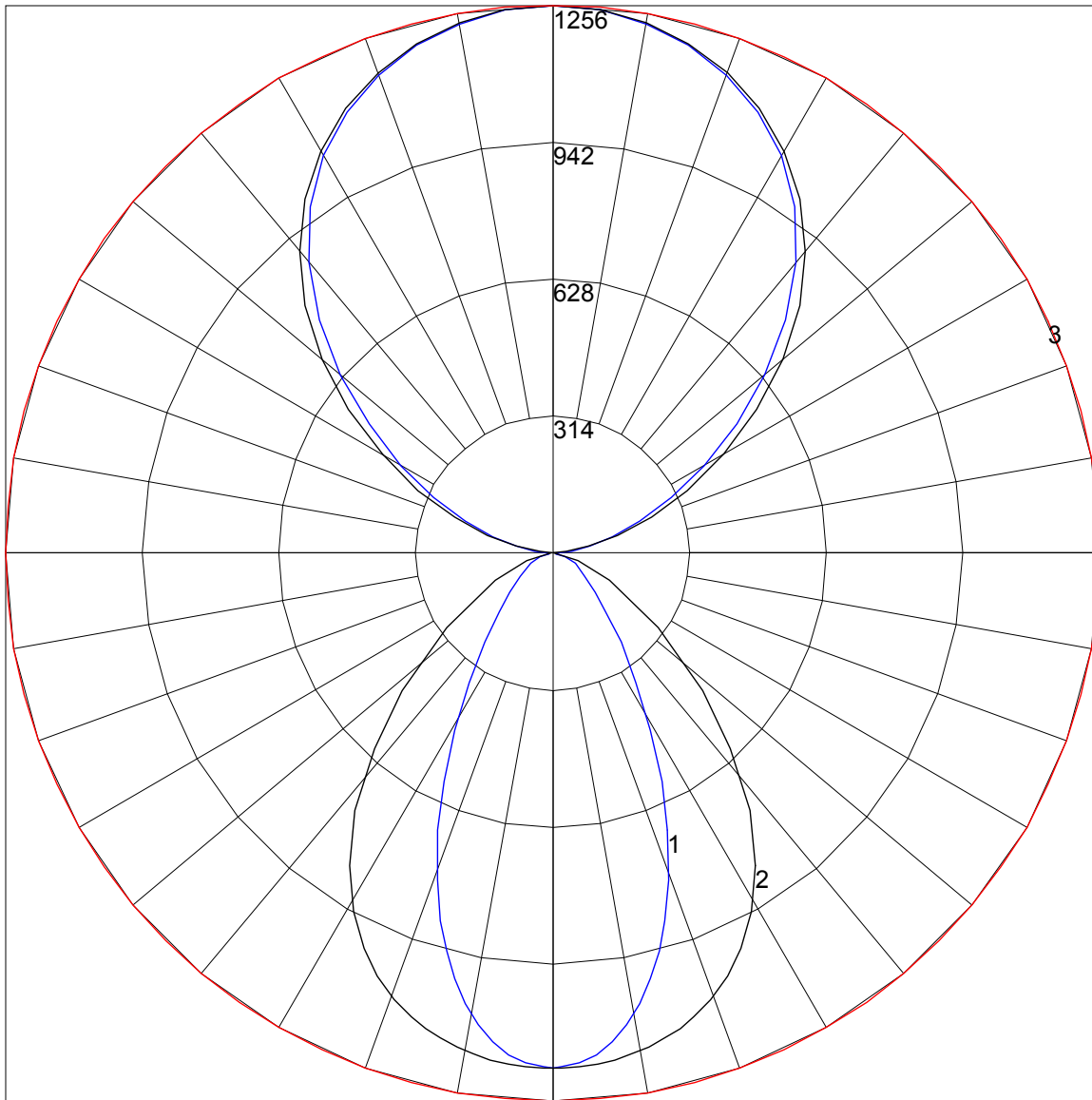
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	36	36	29
2	87	80	74	69	78	72	68	64	58	55	52	46	43	41	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 = 1256 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.)