

**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-BL-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	92	95	97	101
Total Lumens, 4' rail length (1219mm)	4710	4859	4958	5057
Lumens per foot (305mm)	1178	1215	1239	1264
Lumens per foot UP (305mm)	727	750	766	781
Lumens per foot DOWN (305mm)	450	464	474	483
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](http://vode.com).

\* R9: ~74 @ 3500K



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

Report No: L031805812



**Report No:** L031805812

**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-BL

**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:** 4/10/18 - 4/11/18

**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**

<b>Manufacturer:</b>	Vode Lighting
<b>Model Number:</b>	707-Z3-CC-Z-SO-359-U2S7-BL
<b>Driver Model Number:</b>	MEAN WELL HLG-40H-36A(2 DRIVERS)
<b>Total Lumens:</b>	4957.97
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	0.43
<b>Input Power (W):</b>	51.48
<b>Input Power Factor:</b>	0.99
<b>Current ATHD @ 120V(%):</b>	9%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	96
<b>Color Rendering Index (CRI):</b>	97
<b>Correlated Color Temperature (K):</b>	3422
<b>Chromaticity Coordinate x:</b>	0.4101
<b>Chromaticity Coordinate y:</b>	0.3938
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:30
<b>Total Operating Time (Hours):</b>	1:30

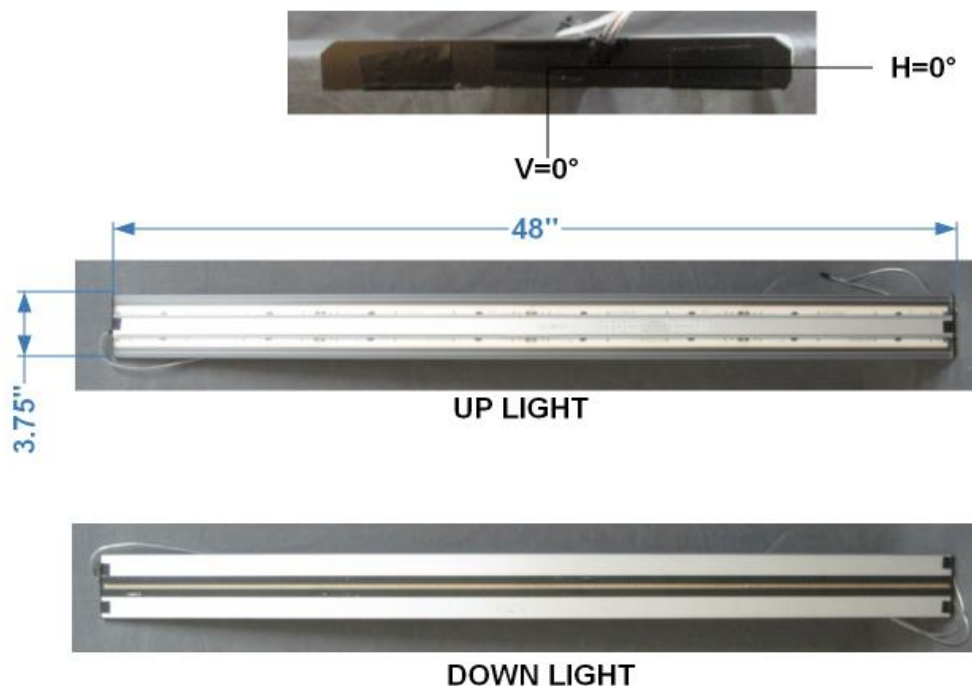
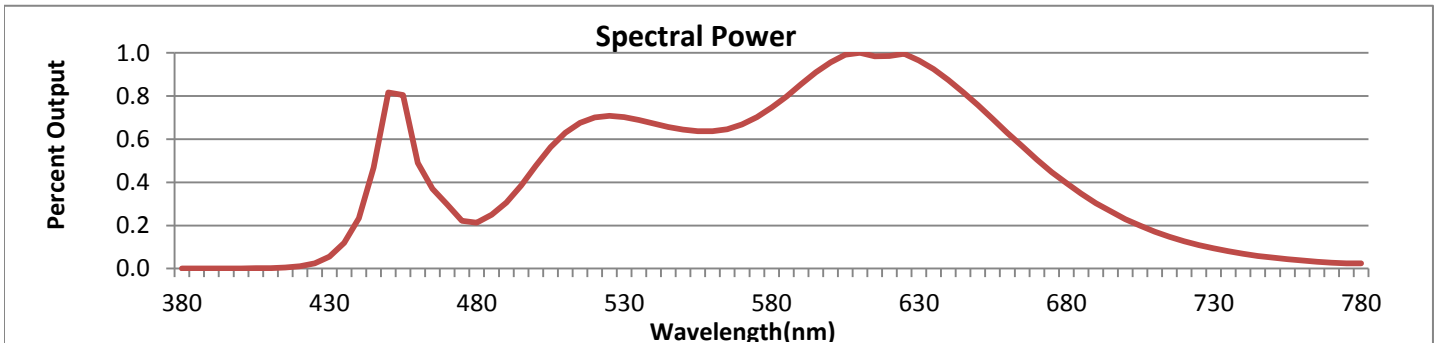


FIG. 1 LUMINAIRE

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



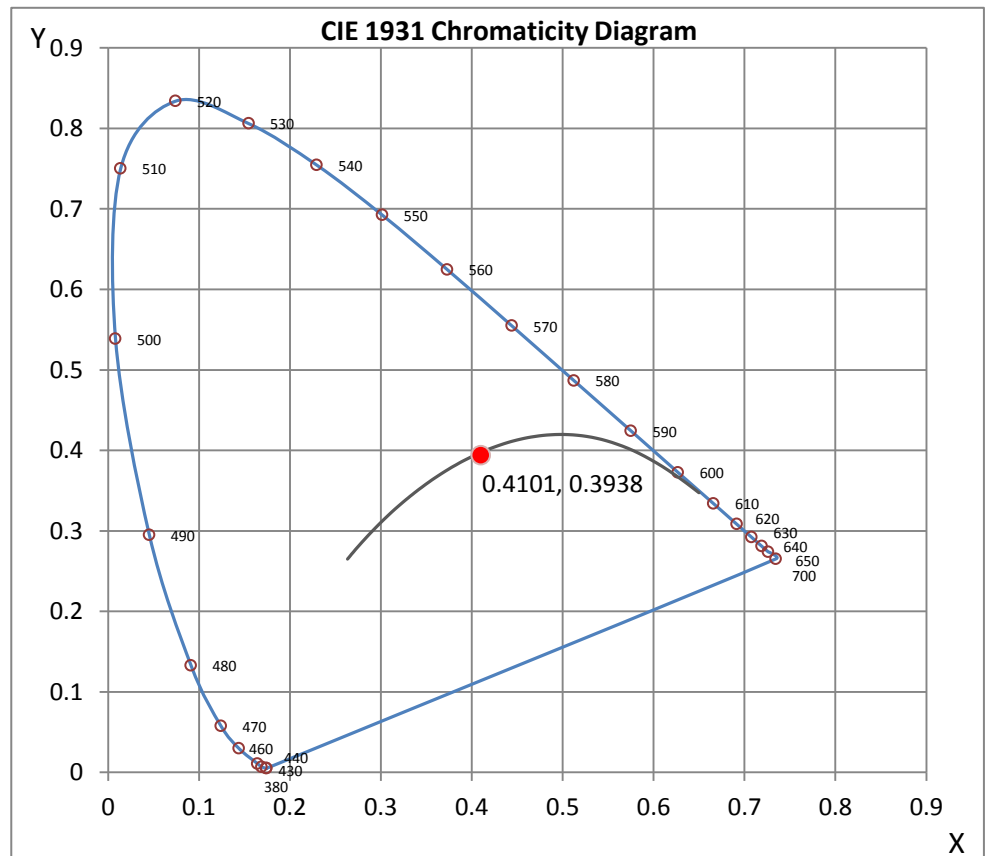
Wavelength	W/m <sup>2</sup> nm	440	0.2332	510	0.6304	580	0.7464	650	0.7585	720	0.1271
380	0.0009	450	0.8169	520	0.7012	590	0.8546	660	0.6302	730	0.0939
390	0.0009	460	0.4895	530	0.7024	600	0.9561	670	0.5050	740	0.0689
400	0.0012	470	0.2979	540	0.6728	610	1.0000	680	0.3964	750	0.0507
410	0.0024	480	0.2129	550	0.6440	620	0.9863	690	0.3031	760	0.0372
420	0.0105	490	0.3060	560	0.6366	630	0.9654	700	0.2293	770	0.0275
430	0.0554	500	0.4772	570	0.6681	640	0.8744	710	0.1716	780	0.0237

**CRI & CCT**

x	0.4101
y	0.3938
u'	0.2376
v'	0.5133
CRI	96.50
CCT	3422
Duv	0.00031

**R Values**

R1	98.77
R2	99.16
R3	97.51
R4	95.74
R5	99.36
R6	96.54
R7	95.40
R8	89.18
R9	72.51
R10	97.78
R11	89.43
R12	80.93
R13	98.84
R14	97.63



\*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 : L031805812.IES**

## DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
 [TEST] L031805812  
 [TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
 [ISSUEDATE] 4/12/2018  
 [MANUFAC] Vode Lighting  
 [LUMCAT] 707-Z3-CC-Z-SO-359-U2S7-BL  
 [LUMINAIRE] ZipThree Suspended, 48", 3500K, 90 CRI, zipper board,  
 [MORE] symmetric lens with edgeglow up/80° symmetric lens down, standard output, black 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, 51.48W  
 [TEST PROCEDURE] IESNA:LM-79-08

## CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4958
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	96
Total Luminaire Watts	51.48
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	5484	6740	6167
55	2554	3818	3461
65	1157	1903	1923
75	547	955	1148
85	194	367	586

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L031805812.IES**

**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>
<b>0.0</b>	1100	1100	1100	1100	1100	1100	1100	1100	1100	1100
<b>1.0</b>	1099	1100	1100	1100	1100	1100	1100	1100	1100	1100
<b>3.0</b>	1098	1098	1098	1098	1098	1098	1098	1098	1098	1098
<b>5.0</b>	1094	1094	1094	1094	1094	1094	1094	1094	1094	1094
<b>7.0</b>	1088	1088	1088	1088	1088	1088	1088	1088	1088	1088
<b>9.0</b>	1080	1080	1080	1080	1080	1080	1080	1080	1080	1079
<b>11.0</b>	1070	1070	1070	1070	1070	1070	1070	1069	1070	1069
<b>13.0</b>	1057	1058	1057	1057	1057	1057	1057	1057	1057	1057
<b>15.0</b>	1043	1043	1043	1043	1043	1043	1043	1042	1042	1042
<b>17.0</b>	1026	1026	1026	1026	1026	1026	1026	1025	1025	1025
<b>19.5</b>	1000	1000	1000	1000	1000	1001	1001	1001	1000	999
<b>22.5</b>	961	962	962	963	964	964	964	964	964	963
<b>25.5</b>	914	915	915	917	918	920	921	921	921	920
<b>29.0</b>	846	847	849	851	854	857	859	861	861	860
<b>33.0</b>	751	752	754	759	765	770	775	778	779	779
<b>37.5</b>	621	622	627	634	642	652	660	667	671	671
<b>42.5</b>	462	464	470	479	491	504	516	526	534	537
<b>47.5</b>	313	315	321	330	342	356	370	383	393	398
<b>55.0</b>	151	152	156	163	171	182	193	204	214	220
<b>65.0</b>	53	53	55	57	60	65	70	75	80	84
<b>75.0</b>	17	18	18	19	20	21	23	24	26	28
<b>85.0</b>	3	3	3	3	4	4	4	4	4	5
<b>90.0</b>	13	13	12	12	12	11	10	9	8	7
<b>95.0</b>	38	38	38	38	37	37	36	36	35	34
<b>100.0</b>	79	79	80	80	80	80	80	80	80	81
<b>105.0</b>	132	132	133	133	134	135	136	138	139	141
<b>110.0</b>	199	199	200	201	203	205	207	210	213	216
<b>115.0</b>	281	282	283	284	287	289	293	296	301	305
<b>120.0</b>	378	379	380	382	385	388	392	397	402	408
<b>125.0</b>	488	489	490	493	496	500	504	509	515	520
<b>130.0</b>	606	606	608	610	613	617	622	627	632	637
<b>135.0</b>	724	725	726	728	731	734	738	742	747	751
<b>140.0</b>	836	836	837	838	840	843	845	848	850	853
<b>145.0</b>	931	931	932	933	934	935	936	938	939	941
<b>150.0</b>	1009	1009	1010	1010	1011	1011	1012	1012	1013	1014
<b>155.0</b>	1071	1071	1071	1071	1071	1072	1072	1073	1074	1074
<b>160.0</b>	1120	1120	1120	1120	1121	1121	1121	1122	1122	1123
<b>165.0</b>	1158	1158	1158	1158	1158	1158	1159	1159	1159	1159
<b>170.0</b>	1184	1184	1184	1184	1184	1184	1184	1184	1184	1184
<b>175.0</b>	1198	1198	1198	1198	1198	1198	1198	1199	1198	1198
<b>180.0</b>	1203	1203	1203	1203	1203	1203	1203	1203	1203	1203

**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>
<b>0.0</b>	1100	1100	1100	1100	1100	1100	1100	1100	1100
<b>1.0</b>	1100	1100	1100	1100	1100	1100	1100	1100	1099
<b>3.0</b>	1098	1098	1098	1098	1098	1098	1098	1098	1098
<b>5.0</b>	1094	1094	1094	1094	1094	1094	1094	1094	1094
<b>7.0</b>	1088	1088	1087	1087	1087	1087	1087	1087	1087
<b>9.0</b>	1079	1079	1079	1079	1079	1079	1079	1079	1079
<b>11.0</b>	1069	1069	1068	1068	1068	1068	1068	1068	1067
<b>13.0</b>	1056	1056	1056	1055	1055	1055	1055	1054	1054
<b>15.0</b>	1041	1040	1040	1039	1039	1038	1038	1038	1038

**IES INDOOR REPORT  
PHOTOMETRIC FILENAME : L031805812.IES**

**CANDELA TABULATION - (Cont.)**

<b>17.0</b>	1023	1023	1022	1021	1020	1019	1018	1018	1018
<b>19.5</b>	998	997	995	994	993	991	991	990	990
<b>22.5</b>	961	959	957	955	952	951	949	948	948
<b>25.5</b>	918	915	911	908	904	902	899	898	898
<b>29.0</b>	857	853	848	843	838	834	831	829	828
<b>33.0</b>	775	770	763	756	749	742	738	735	734
<b>37.5</b>	668	661	653	643	633	625	619	615	613
<b>42.5</b>	534	527	518	506	495	486	478	473	472
<b>47.5</b>	398	392	383	372	362	352	345	340	339
<b>55.0</b>	222	220	215	208	201	194	189	186	185
<b>65.0</b>	86	86	86	84	82	79	77	76	76
<b>75.0</b>	29	30	30	30	29	29	29	28	28
<b>85.0</b>	5	5	5	5	5	5	5	5	5
<b>90.0</b>	6	5	5	4	3	2	2	1	1
<b>95.0</b>	33	33	32	31	31	30	29	29	28
<b>100.0</b>	81	81	81	81	81	81	81	81	80
<b>105.0</b>	142	144	145	147	147	148	148	148	148
<b>110.0</b>	219	222	224	226	228	229	230	230	230
<b>115.0</b>	309	313	317	320	323	324	325	326	326
<b>120.0</b>	413	418	422	426	429	431	432	433	433
<b>125.0</b>	526	531	536	539	542	545	546	547	548
<b>130.0</b>	643	647	651	654	657	659	660	661	662
<b>135.0</b>	754	758	760	763	765	767	768	768	769
<b>140.0</b>	855	857	859	861	862	863	864	865	865
<b>145.0</b>	942	943	945	946	947	947	948	948	948
<b>150.0</b>	1015	1016	1017	1018	1018	1018	1019	1019	1019
<b>155.0</b>	1075	1076	1076	1077	1077	1077	1077	1077	1077
<b>160.0</b>	1123	1123	1123	1123	1123	1123	1124	1124	1124
<b>165.0</b>	1159	1159	1159	1159	1159	1159	1159	1159	1159
<b>170.0</b>	1184	1184	1184	1184	1184	1184	1184	1184	1184
<b>175.0</b>	1198	1199	1198	1198	1199	1199	1199	1199	1199
<b>180.0</b>	1203	1203	1203	1203	1203	1203	1203	1203	1203



**IES INDOOR REPORT**  
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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	378.41	N.A.	7.60
0-30	773.60	N.A.	15.60
0-40	1155.04	N.A.	23.30
0-60	1700.11	N.A.	34.30
0-80	1876.67	N.A.	37.90
0-90	1895.75	N.A.	38.20
10-90	1811.44	N.A.	36.50
20-40	776.63	N.A.	15.70
20-50	1144.79	N.A.	23.10
40-70	670.95	N.A.	13.50
60-80	176.56	N.A.	3.60
70-80	50.69	N.A.	1.00
80-90	19.07	N.A.	0.40
90-110	194.46	N.A.	3.90
90-120	499.00	N.A.	10.10
90-130	964.11	N.A.	19.40
90-150	2126.71	N.A.	42.90
90-180	3062.22	N.A.	61.80
110-180	2867.76	N.A.	57.80
0-180	4957.97	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	84.31
10-20	294.10
20-30	395.18
30-40	381.45
40-50	368.16
50-60	176.91
60-70	125.87
70-80	50.69
80-90	19.07
90-100	42.30
100-110	152.16
110-120	304.54
120-130	465.11
130-140	575.86
140-150	586.75
150-160	494.64
160-170	326.94
170-180	113.93

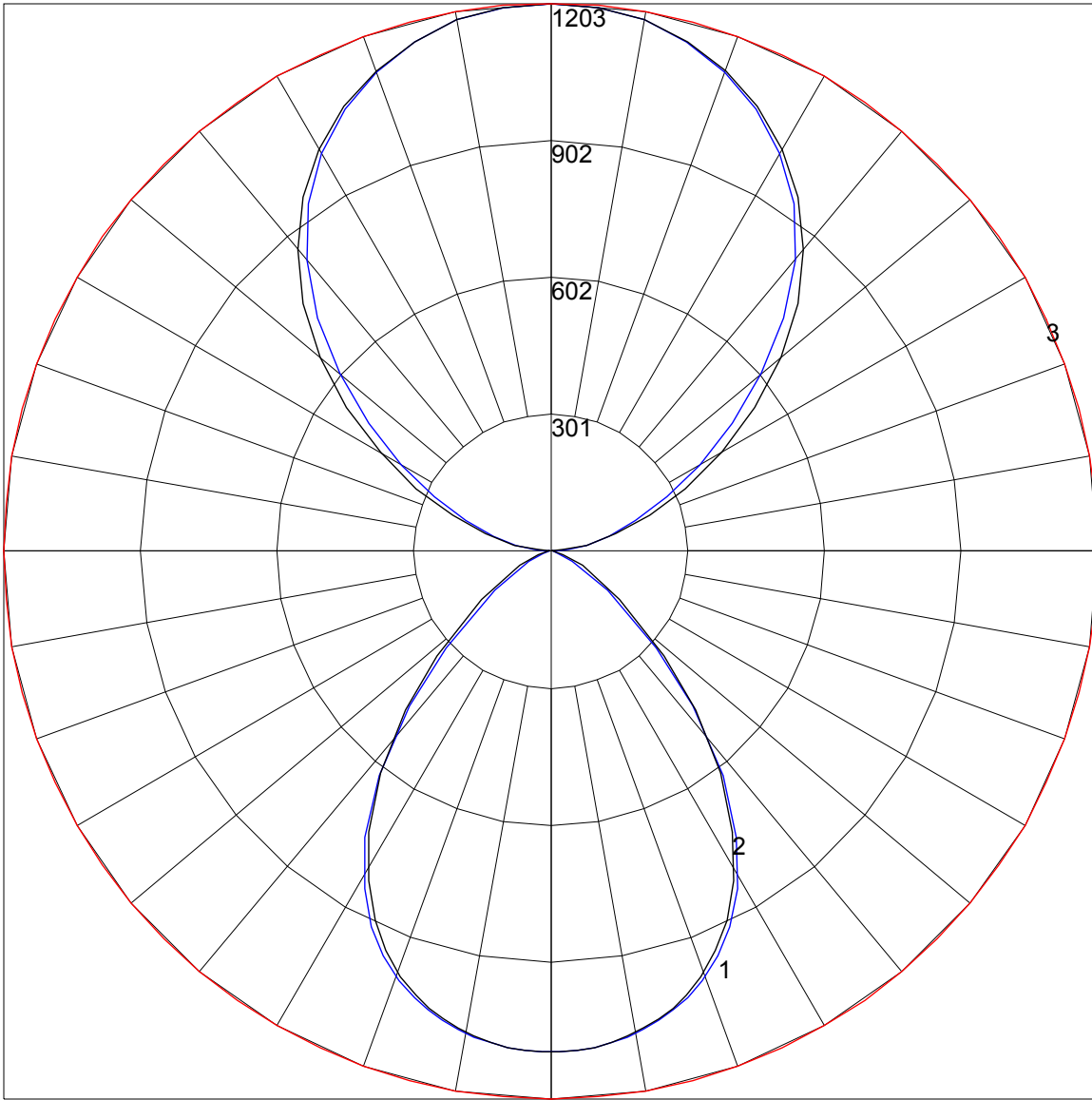
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	95	95	95	95	77	77	77	60	60	60	45	45	45	38	0
1	96	92	88	85	87	84	81	78	68	66	64	54	53	52	41	40	40	34	0
2	88	81	76	71	80	74	69	65	61	57	55	48	46	44	37	36	35	29	0
3	81	72	65	60	73	66	60	55	54	50	47	44	41	38	34	32	30	26	0
4	74	64	57	51	67	59	52	48	49	44	40	39	36	34	31	28	27	23	0
5	68	57	50	44	62	53	46	41	44	39	35	36	32	30	28	26	24	20	0
6	63	52	44	39	57	48	41	36	40	35	31	32	29	26	26	23	21	18	0
7	58	47	39	34	53	43	37	32	36	31	28	30	26	23	24	21	19	17	0
8	54	43	35	30	49	39	33	29	33	28	25	27	24	21	22	19	17	15	0
9	51	39	32	27	46	36	30	26	30	26	22	25	22	19	20	18	16	14	0
10	47	36	29	24	43	33	27	23	28	23	20	23	20	17	19	16	15	13	0

POLAR GRAPH



Maximum Candela = 1203 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.)