

**IES Report**

ZipThree® | Ceiling Cable | 707 | Symmetric with EdgeGlow, up | Soft Diffuse, down | 90 CRI | SO

707-Z3-XX-4-48-CC-XX-XX-XX-X-0-Z-SO-359-U2D2-0-BL-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	102	105	107	109
Total Lumens, 4' rail length (1219mm)	5205	5370	5479	5589
Lumens per foot (305mm)	1301	1342	1370	1397
Lumens per foot UP (305mm)	2936	3028	3090	3152
Lumens per foot DOWN (305mm)	2270	2341	2389	2437
Input Power (W), 4' rail length (1219mm)	51.4	51.4	51.4	51.4
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: L081800704



**Report No:** L081800704

**Issue Date:** 8/15/2018

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

**Model Number:** 707-Z3-CC-Z-SO-359-U2D2-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:** 8/9/18

**Date of Tests:** 8/14/18 - 8/15/18

**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-U2D2-BL
<b>Driver Model Number:</b>	MEAN WELL HLG-40H-36A(2 DRIVERS)
<b>Total Lumens:</b>	5479.10
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	0.43
<b>Input Power (W):</b>	51.35
<b>Input Power Factor:</b>	0.99
<b>Current ATHD @ 120V(%):</b>	9%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	106.70
<b>Color Rendering Index (CRI):</b>	96
<b>Correlated Color Temperature (K):</b>	3398
<b>Chromaticity Coordinate x:</b>	0.4107
<b>Chromaticity Coordinate y:</b>	0.3925
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:45
<b>Total Operating Time (Hours):</b>	2:30

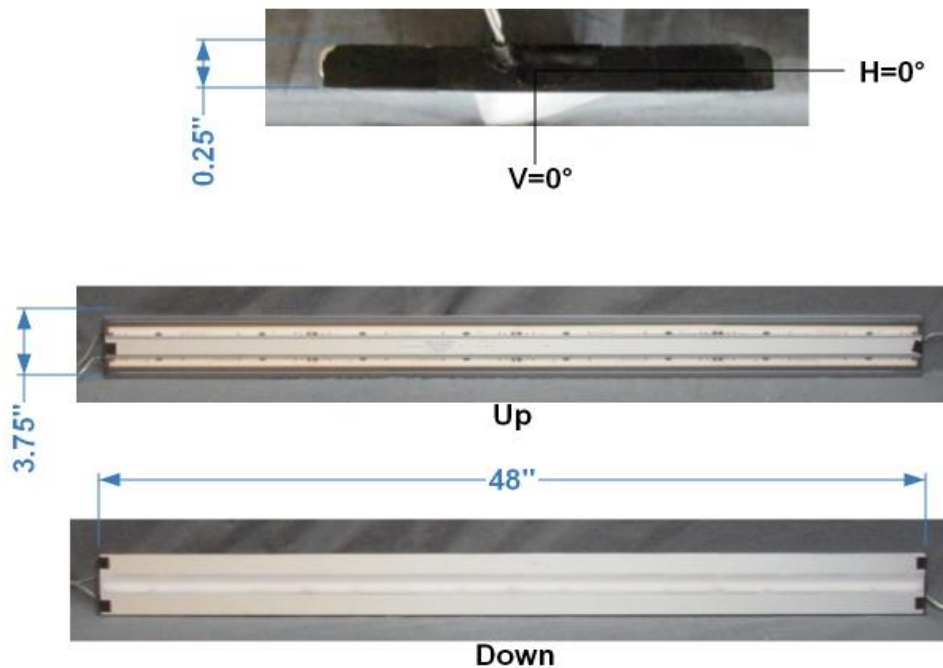
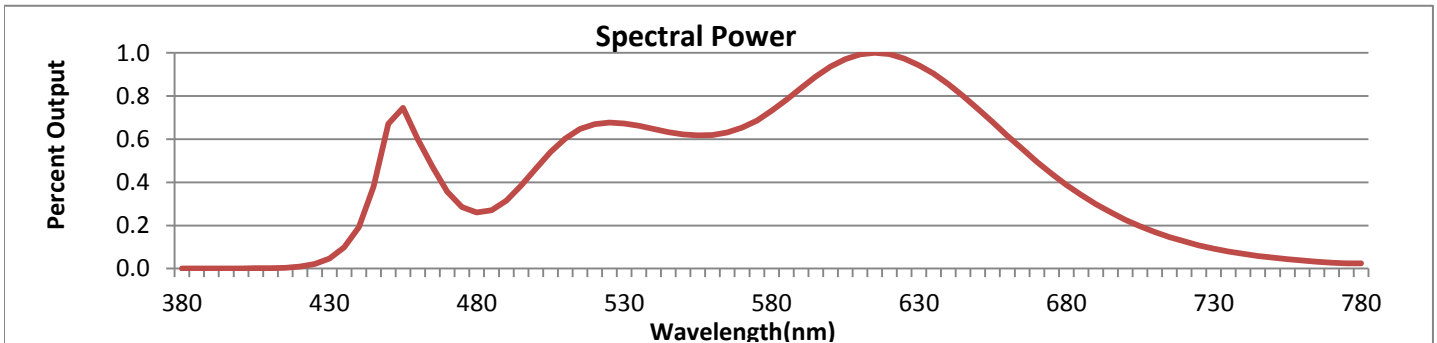


FIG. 1 LUMINAIRE

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



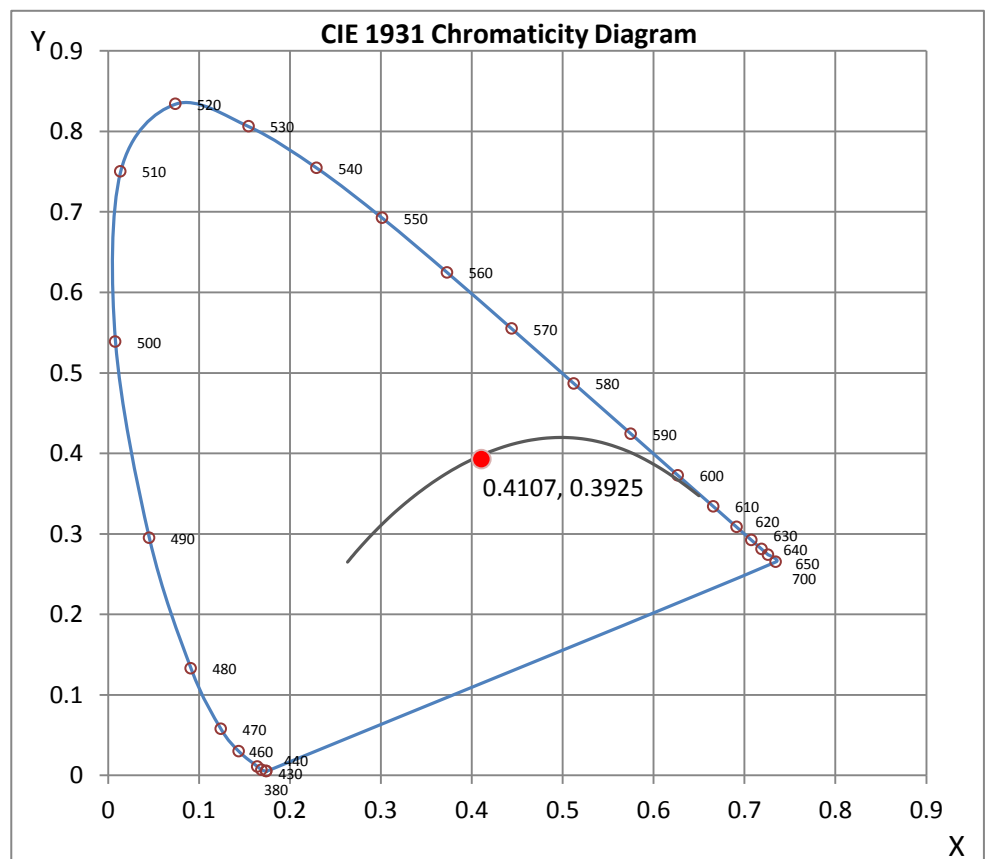
Wavelength	W/m <sup>2</sup> nm	440	0.1922	510	0.6033	580	0.7315	650	0.7406	720	0.1260
380	0.0010	450	0.6707	520	0.6703	590	0.8378	660	0.6166	730	0.0928
390	0.0009	460	0.6005	530	0.6723	600	0.9373	670	0.4949	740	0.0682
400	0.0012	470	0.3561	540	0.6477	610	0.9926	680	0.3880	750	0.0505
410	0.0023	480	0.2596	550	0.6224	620	0.9941	690	0.2986	760	0.0372
420	0.0090	490	0.3154	560	0.6188	630	0.9434	700	0.2259	770	0.0274
430	0.0461	500	0.4638	570	0.6531	640	0.8553	710	0.1695	780	0.0236

**CRI & CCT**

x	0.4107
y	0.3925
u'	0.2385
v'	0.5128
CRI	96.00
CCT	3398
Duv	-0.00037

**R Values**

R1	97.81
R2	98.86
R3	99.20
R4	97.16
R5	97.93
R6	94.59
R7	94.11
R8	88.70
R9	73.64
R10	98.40
R11	90.78
R12	81.02
R13	97.47
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*



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# Photometric Test Report

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L081800704.IES**

## DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L081800704  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 8/15/2018  
[MANUFAC] Vode Lighting  
[LUMCAT] 707-Z3-CC-Z-SO-359-U2D2-BL  
[LUMINAIRE] ZipThree Suspended, 48", 3500K, 90 CRI, zipper board,  
[MORE] symmetric lens with edgeglow up/soft diffuse 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, 51.35W  
[TEST PROCEDURE] IESNA:LM-79-08

## CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5479
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	107
Total Luminaire Watts	51.35
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)	4.00 ft
Luminous Height	0.02 ft

## LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	7759	7876	8262
55	7252	7407	7930
65	6581	6740	7402
75	5503	5701	6485
85	3351	3584	5019

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</b>	833	833	833	833	833	833	833	833	833	833
<b>5</b>	830	829	830	829	830	830	830	829	830	829
<b>10</b>	818	818	818	818	818	818	818	818	818	818
<b>15</b>	799	799	799	799	799	799	799	799	799	799
<b>20</b>	773	773	773	773	773	773	773	773	772	772
<b>25</b>	740	740	740	740	740	740	740	739	739	739
<b>30</b>	701	701	701	701	700	700	700	700	699	699
<b>35</b>	656	656	656	656	656	655	655	655	654	654
<b>40</b>	606	606	606	606	605	605	605	604	604	604
<b>45</b>	551	551	551	551	551	550	550	550	549	549
<b>50</b>	493	493	493	493	492	492	492	491	491	490
<b>55</b>	431	432	431	431	431	431	430	430	429	429
<b>60</b>	368	368	367	367	367	367	366	365	365	364
<b>65</b>	303	303	302	302	302	301	301	300	300	299
<b>70</b>	237	237	237	236	236	236	235	234	233	233
<b>75</b>	172	172	172	172	171	171	170	169	169	168
<b>80</b>	110	110	110	109	109	109	108	107	106	105
<b>85</b>	52	52	52	52	52	51	51	51	50	49
<b>90</b>	13	12	12	12	11	11	10	9	8	7
<b>95</b>	39	39	39	39	38	38	37	37	36	35
<b>100</b>	80	80	80	80	80	81	81	81	82	82
<b>105</b>	132	133	133	134	135	136	137	139	141	142
<b>110</b>	200	200	201	202	204	206	209	212	215	218
<b>115</b>	283	284	285	287	289	292	296	300	304	309
<b>120</b>	382	382	384	386	389	393	397	402	408	413
<b>125</b>	494	494	496	499	502	506	511	516	522	528
<b>130</b>	614	614	616	618	622	626	631	636	641	646
<b>135</b>	734	734	736	738	741	744	748	752	756	760
<b>140</b>	845	846	847	848	850	852	854	856	859	861
<b>145</b>	939	940	940	941	942	943	944	945	946	947
<b>150</b>	1016	1016	1016	1017	1017	1017	1018	1018	1019	1020
<b>155</b>	1076	1076	1076	1077	1077	1077	1077	1078	1079	1080
<b>160</b>	1125	1125	1125	1125	1125	1126	1126	1127	1127	1127
<b>165</b>	1162	1163	1163	1163	1163	1163	1163	1163	1163	1163
<b>170</b>	1188	1188	1188	1188	1188	1188	1188	1188	1188	1188
<b>175</b>	1202	1202	1202	1202	1202	1202	1202	1202	1202	1202
<b>180</b>	1207	1207	1207	1207	1207	1207	1207	1207	1207	1207

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</b>	833	833	833	833	833	833	833	833	833
<b>5</b>	829	829	829	829	829	829	829	829	829
<b>10</b>	818	818	818	818	818	818	818	818	817
<b>15</b>	799	799	799	799	798	798	798	798	798
<b>20</b>	772	772	772	772	771	771	771	771	771
<b>25</b>	739	738	738	738	738	738	738	738	737
<b>30</b>	699	698	698	698	698	697	697	697	697
<b>35</b>	654	653	653	653	653	652	652	652	652
<b>40</b>	603	603	602	602	602	601	601	601	601
<b>45</b>	548	548	548	547	547	546	546	546	546
<b>50</b>	490	489	489	489	488	488	488	488	488
<b>55</b>	428	427	427	427	426	426	426	426	426
<b>60</b>	364	363	362	362	362	361	361	361	361

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**CANDELA TABULATION - (Cont.)**

<b>65</b>	298	297	296	296	295	295	294	294	294
<b>70</b>	232	231	230	229	228	227	226	226	226
<b>75</b>	167	165	164	163	162	161	160	159	159
<b>80</b>	104	103	102	101	99	98	97	96	96
<b>85</b>	49	48	47	46	45	44	44	43	43
<b>90</b>	6	5	4	4	3	2	2	1	1
<b>95</b>	35	34	33	33	32	31	31	30	30
<b>100</b>	82	83	83	83	83	83	83	82	82
<b>105</b>	144	146	148	149	150	150	150	150	150
<b>110</b>	221	224	227	230	231	232	233	233	233
<b>115</b>	313	317	321	325	327	329	330	330	330
<b>120</b>	419	424	428	432	435	437	438	439	439
<b>125</b>	534	539	543	547	550	552	553	554	555
<b>130</b>	651	655	659	662	665	667	668	669	669
<b>135</b>	763	766	768	771	773	774	775	776	777
<b>140</b>	863	864	866	868	870	871	872	872	873
<b>145</b>	949	950	952	953	954	955	955	956	956
<b>150</b>	1021	1022	1023	1024	1024	1025	1025	1025	1026
<b>155</b>	1081	1081	1082	1082	1082	1082	1083	1083	1083
<b>160</b>	1128	1128	1128	1128	1128	1128	1129	1129	1129
<b>165</b>	1163	1164	1163	1164	1164	1164	1164	1164	1164
<b>170</b>	1188	1188	1188	1188	1188	1188	1188	1188	1188
<b>175</b>	1202	1202	1202	1202	1202	1202	1202	1202	1202
<b>180</b>	1207	1207	1207	1207	1207	1207	1207	1207	1207



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

Zone	Lumens	%Lamp	%Fixt
0-20	304.17	N.A.	5.60
0-30	644.62	N.A.	11.80
0-40	1053.69	N.A.	19.20
0-60	1860.08	N.A.	33.90
0-80	2332.28	N.A.	42.60
0-90	2388.99	N.A.	43.60
10-90	2310.19	N.A.	42.20
20-40	749.52	N.A.	13.70
20-50	1172.82	N.A.	21.40
40-70	1101.87	N.A.	20.10
60-80	472.20	N.A.	8.60
70-80	176.72	N.A.	3.20
80-90	56.71	N.A.	1.00
90-110	197.11	N.A.	3.60
90-120	505.22	N.A.	9.20
90-130	976.45	N.A.	17.80
90-150	2150.39	N.A.	39.20
90-180	3090.11	N.A.	56.40
110-180	2893.00	N.A.	52.80
0-180	5479.1	N.A.	100.00

Total Luminaire Efficiency = N.A.%

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	78.80
10-20	225.37
20-30	340.45
30-40	409.07
40-50	423.30
50-60	383.10
60-70	295.48
70-80	176.72
80-90	56.71
90-100	43.25
100-110	153.87
110-120	308.11
120-130	471.23
130-140	582.52
140-150	591.42
150-160	497.19
160-170	328.24
170-180	114.30

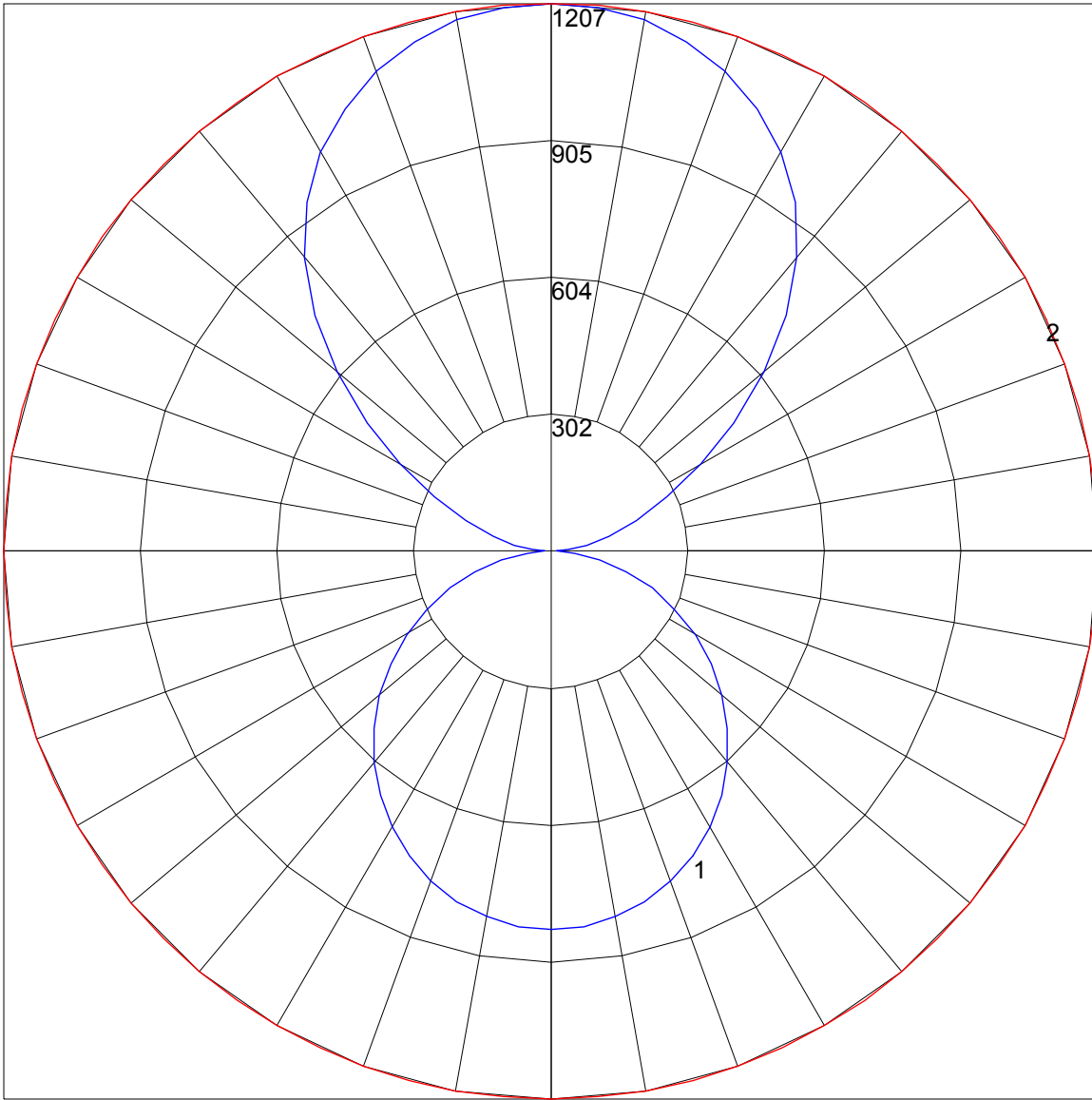
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	106	106	106	106	97	97	97	97	80	80	80	64	64	64	50	50	50	44
1	96	92	88	84	88	84	81	78	70	67	65	56	55	53	44	43	42	36
2	87	80	74	68	80	73	68	63	61	57	53	49	46	44	39	37	35	30
3	80	70	63	57	72	64	58	53	53	49	45	43	40	37	34	32	30	25
4	73	62	54	48	66	57	50	44	47	42	38	38	35	32	30	28	25	22
5	67	55	47	41	61	51	43	38	42	37	33	34	30	27	27	24	22	19
6	61	49	41	35	56	45	38	33	38	32	28	31	27	24	25	22	19	16
7	57	44	36	31	52	41	34	29	34	29	25	28	24	21	22	19	17	14
8	52	40	32	27	48	37	30	25	31	26	22	26	22	19	21	17	15	13
9	49	37	29	24	45	34	27	23	29	23	20	24	20	17	19	16	14	11
10	46	33	26	22	42	31	25	20	26	21	18	22	18	15	18	15	12	10

POLAR GRAPH



Maximum Candela = 1207 Located At Horizontal Angle = 0, Vertical Angle = 180  
# 1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)  
# 2 - Horizontal Cone Through Vertical Angle (180) (Through Max. Cd.)