

IES Report

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

707-Z3-XX-4-48-CC-XX-XX-XX-X-0-Z-SO-359-U1D2-0-BL-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	98	101	105	105
Total Lumens, 4' rail length (1219mm)	5112	5274	5381	5489
Lumens per foot (305mm)	1278	1318	1345	1372
Lumens per foot UP (305mm)	2821	2910	2969	3028
Lumens per foot DOWN (305mm)	2292	2364	2412	2460
Input Power (W), 4' rail length (1219mm)	52.3	52.3	51.3	52.3
Watts per foot (305mm)	13.1	13.1	12.9	13.1
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.

* R9: ~74 @ 3500K



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

Report No: L081800703



Report No: L081800703

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-U1D2-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: 8/13/18 - 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

Manufacturer:	Vode Lighting
Model Number:	707-Z3-CC-Z-SO-359-U1D2-BL
Driver Model Number:	MEAN WELL HLG-40H-36A(2 DRIVERS)
Total Lumens:	5381.29
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.43
Input Power (W):	51.30
Input Power Factor:	0.99
Current ATHD @ 120V(%):	9%
Current ATHD @ 277V(%):	N/A
Efficacy:	104.89
Color Rendering Index (CRI):	96
Correlated Color Temperature (K):	3372
Chromaticity Coordinate x:	0.4122
Chromaticity Coordinate y:	0.3931
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:45
Total Operating Time (Hours):	2:30

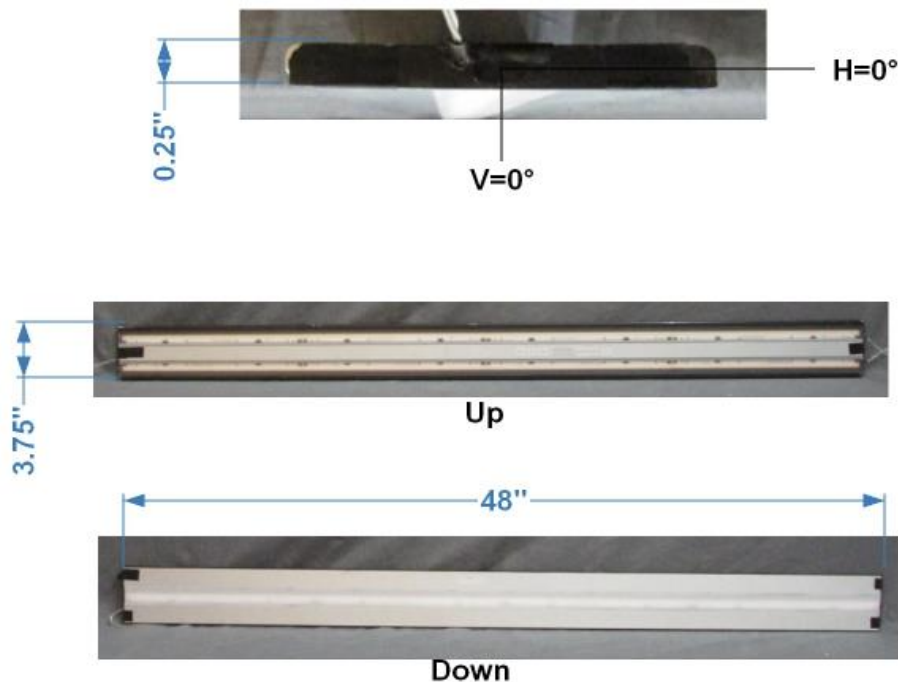
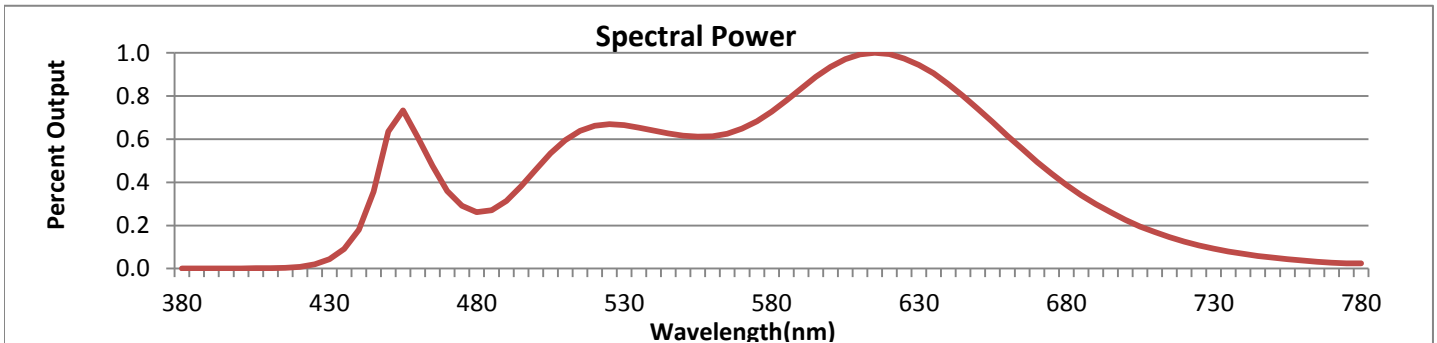


FIG. 1 LUMINAIRE

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



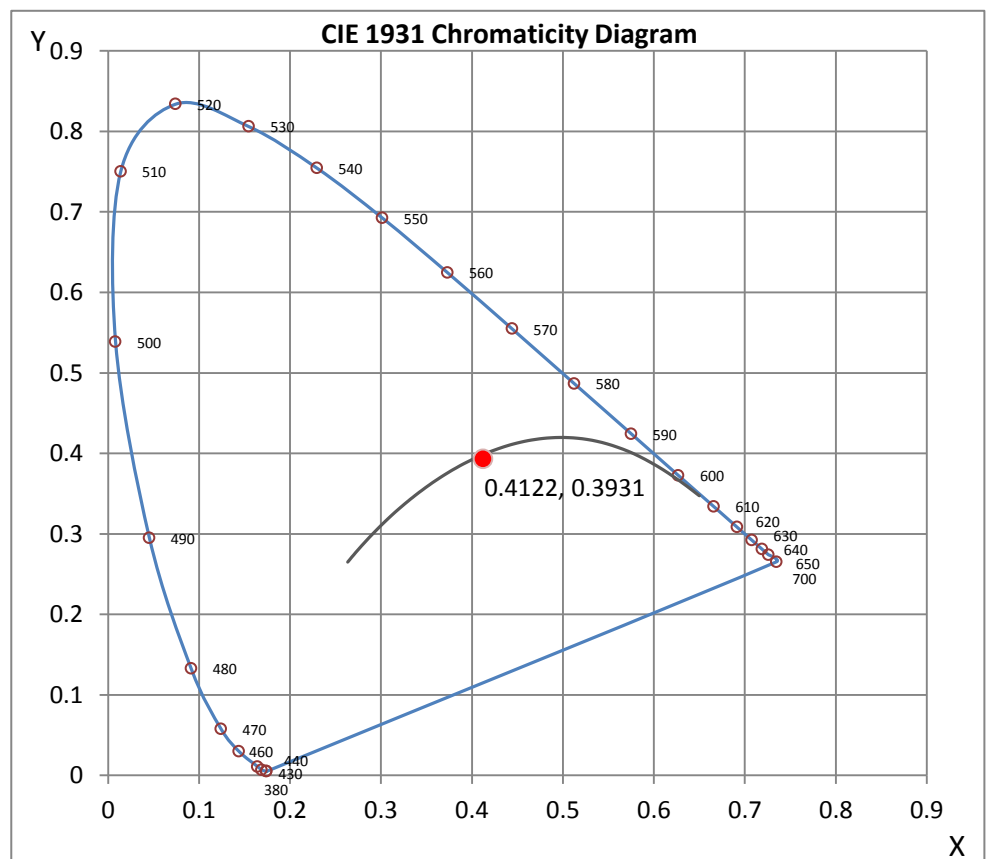
Wavelength	W/m ² nm	440	0.1798	510	0.5958	580	0.7278	650	0.7417	720	0.1255
380	0.0009	450	0.6359	520	0.6624	590	0.8349	660	0.6170	730	0.0928
390	0.0009	460	0.6092	530	0.6650	600	0.9353	670	0.4944	740	0.0685
400	0.0011	470	0.3600	540	0.6405	610	0.9931	680	0.3884	750	0.0503
410	0.0021	480	0.2622	550	0.6165	620	0.9952	690	0.2984	760	0.0372
420	0.0084	490	0.3137	560	0.6132	630	0.9447	700	0.2258	770	0.0275
430	0.0430	500	0.4588	570	0.6484	640	0.8559	710	0.1695	780	0.0236

CRI & CCT

x	0.4122
y	0.3931
u'	0.2392
v'	0.5133
CRI	95.80
CCT	3372
Duv	-0.00042

R Values

R1	97.64
R2	98.59
R3	99.09
R4	97.20
R5	97.67
R6	94.18
R7	93.84
R8	88.57
R9	73.74
R10	97.77
R11	90.82
R12	81.04
R13	97.23
R14	98.79



*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 : L081800703.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L081800703
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 8/15/2018
[MANUFAC] Vode Lighting
[LUMCAT] 707-Z3-CC-Z-SO-359-U1D2-BL
[LUMINAIRE] ZipThree Suspended, 48", 3500K, 90 CRI, zipper board,
[MORE] symmetric lens 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, 51.30W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5381
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	105
Total Luminaire Watts	51.3
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	7843	7962	8353
55	7336	7476	8005
65	6646	6807	7477
75	5567	5735	6526
85	3416	3657	5019

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L081800703.IES**

CANDELA TABULATION

	0	5	10	15	20	25	30	35	40	45
0	841	841	841	841	841	841	841	841	841	841
5	837	838	837	838	837	837	838	838	837	837
10	826	826	826	826	826	826	826	826	826	826
15	807	807	807	807	807	807	807	807	807	806
20	781	781	781	781	781	780	780	780	780	780
25	747	747	747	747	747	747	747	747	746	746
30	708	708	708	708	708	707	707	707	706	706
35	663	663	663	663	662	662	662	662	661	661
40	612	612	612	612	612	612	611	611	610	610
45	557	557	557	557	557	556	556	555	555	555
50	498	498	498	498	498	497	497	497	496	496
55	436	436	436	436	436	435	435	434	434	433
60	372	372	372	371	371	371	370	370	369	368
65	306	306	306	306	305	305	304	304	303	302
70	240	240	240	239	239	238	238	237	236	235
75	174	174	174	174	173	172	172	171	170	169
80	111	111	111	111	110	110	109	108	107	106
85	53	53	53	52	52	52	51	51	50	50
90	2	2	2	2	2	2	2	2	2	2
95	25	25	25	25	25	26	26	26	27	27
100	65	65	65	66	66	67	68	70	71	72
105	116	116	117	118	119	121	123	125	128	131
110	181	181	182	184	186	189	192	195	199	203
115	261	261	262	264	267	271	275	279	284	289
120	354	355	356	359	362	366	371	376	382	388
125	461	461	463	465	469	473	479	484	491	498
130	575	576	577	580	584	588	593	599	606	612
135	692	693	694	697	700	704	709	714	719	725
140	805	805	806	808	811	814	817	821	825	829
145	904	904	905	906	908	910	913	915	918	920
150	988	988	988	989	990	991	993	994	996	997
155	1054	1054	1055	1055	1056	1057	1057	1058	1059	1060
160	1107	1107	1107	1107	1108	1108	1109	1109	1110	1111
165	1147	1147	1147	1147	1147	1148	1148	1149	1150	1150
170	1176	1176	1177	1177	1177	1177	1177	1178	1178	1179
175	1195	1195	1195	1195	1195	1195	1195	1195	1196	1196
180	1201	1201	1201	1201	1201	1201	1201	1201	1201	1201

Vert. Horizontal Angles

	50	55	60	65	70	75	80	85	90
0	841	841	841	841	841	841	841	841	841
5	837	837	837	837	838	837	837	837	837
10	826	826	826	826	826	826	826	826	826
15	806	806	806	806	806	806	806	806	806
20	780	780	779	779	779	779	779	779	779
25	746	746	745	745	745	745	745	745	745
30	706	705	705	705	705	705	704	704	704
35	660	660	660	659	659	659	659	659	659
40	610	609	609	608	608	608	608	608	607
45	554	554	553	553	552	552	552	552	552
50	495	495	494	494	493	493	493	493	493
55	433	432	432	431	431	430	430	430	430
60	368	367	366	366	365	365	365	365	364

**IES INDOOR REPORT
 PHOTOMETRIC FILENAME : L081800703.IES**

CANDELA TABULATION - (Cont.)

65	301	300	300	299	298	298	297	297	297
70	234	233	232	231	230	229	229	228	228
75	168	167	166	164	163	162	161	161	160
80	105	104	103	101	100	99	98	97	97
85	49	48	47	46	45	44	44	43	43
90	2	2	2	2	2	2	2	2	2
95	28	28	28	29	29	29	29	29	29
100	74	75	77	78	79	79	80	80	80
105	133	136	139	141	143	144	145	145	145
110	207	211	215	218	221	223	224	225	225
115	295	300	304	309	312	314	316	317	317
120	394	400	406	410	414	417	419	420	421
125	504	510	516	521	524	527	530	532	532
130	618	624	629	633	637	640	642	644	645
135	730	734	738	742	745	748	750	752	753
140	833	836	839	842	844	847	849	851	852
145	922	925	927	929	931	934	936	937	938
150	999	1000	1002	1004	1006	1008	1009	1011	1011
155	1061	1063	1064	1066	1067	1069	1070	1071	1071
160	1112	1113	1114	1115	1116	1118	1119	1119	1120
165	1151	1152	1153	1153	1154	1155	1156	1156	1156
170	1179	1180	1180	1181	1181	1181	1182	1182	1182
175	1196	1196	1196	1196	1196	1196	1197	1197	1197
180	1201	1201	1201	1201	1201	1201	1201	1201	1201

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	307.14	N.A.	5.70
0-30	650.96	N.A.	12.10
0-40	1064.27	N.A.	19.80
0-60	1879.27	N.A.	34.90
0-80	2356.43	N.A.	43.80
0-90	2412.18	N.A.	44.80
10-90	2332.61	N.A.	43.30
20-40	757.13	N.A.	14.10
20-50	1184.94	N.A.	22.00
40-70	1113.71	N.A.	20.70
60-80	477.15	N.A.	8.90
70-80	178.45	N.A.	3.30
80-90	55.75	N.A.	1.00
90-110	176.73	N.A.	3.30
90-120	466.09	N.A.	8.70
90-130	911.42	N.A.	16.90
90-150	2042.27	N.A.	38.00
90-180	2969.11	N.A.	55.20
110-180	2792.38	N.A.	51.90
0-180	5381.29	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

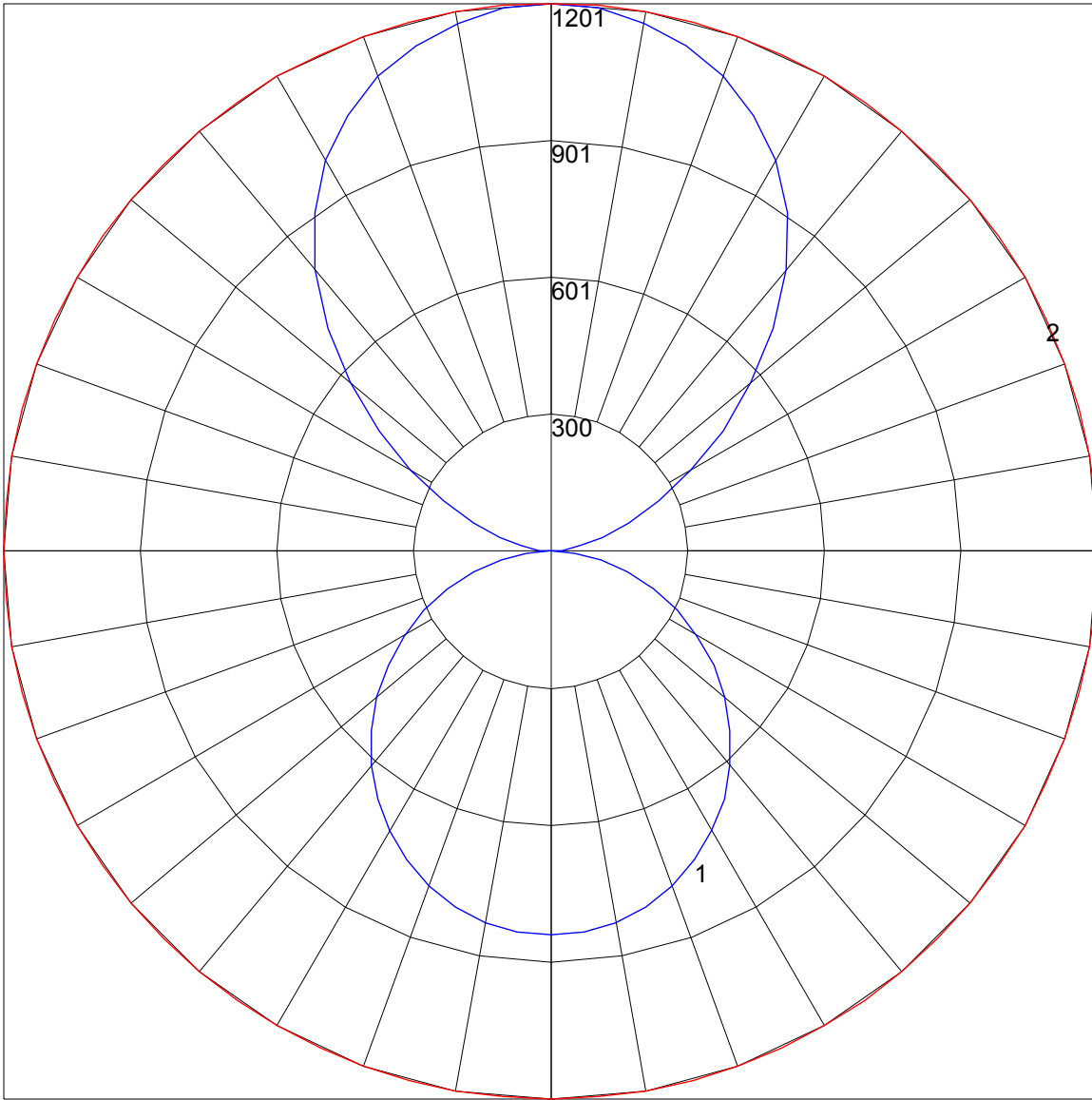
Zone	Lumens
0-10	79.56
10-20	227.58
20-30	343.82
30-40	413.32
40-50	427.81
50-60	387.19
60-70	298.71
70-80	178.45
80-90	55.75
90-100	35.03
100-110	141.70
110-120	289.36
120-130	445.33
130-140	556.74
140-150	574.11
150-160	488.56
160-170	324.68
170-180	113.60

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	65	65	65	51	51	51	45
1	96	92	88	84	88	84	81	78	70	68	66	57	55	54	45	44	43	37
2	88	80	74	69	80	74	68	64	61	57	54	50	47	45	39	37	36	31
3	80	70	63	57	73	65	58	53	54	49	45	44	40	38	35	32	30	26
4	73	62	54	48	66	57	50	45	48	42	38	39	35	32	31	28	26	22
5	67	55	47	41	61	51	44	38	43	37	33	35	31	28	28	25	22	19
6	61	49	41	35	56	46	38	33	38	33	29	31	27	24	25	22	20	17
7	57	44	36	31	52	41	34	29	35	29	25	29	24	21	23	20	17	15
8	53	40	33	27	48	37	30	26	31	26	22	26	22	19	21	18	16	13
9	49	37	29	24	45	34	27	23	29	23	20	24	20	17	19	16	14	12
10	46	34	26	22	42	31	25	20	27	21	18	22	18	15	18	15	13	11

POLAR GRAPH



Maximum Candela = 1201 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.)