

IES Report

ZipThree® | 707 | Symmetric with EdgeGlow™, upright only | 90 CRI | SO

707-Z3-4-48-XX-XX-X-0-Z-SO-359-U2-X-XX-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	120	124	126	129
Total Lumens, 4' rail length (1219mm)	3126	3225	3291	3357
Lumens per foot (305mm)	782	806	823	839
Input Power (W), 4' rail length (1219mm)	26.2	26.2	26.2	26.2
Watts per foot (305mm)	6.6	6.6	6.6	6.6
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: L091700109



Report No: L091700109

Issue Date: 9/21/2017

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

Model Number: 707-Z3-48-Z-SO-359-U2

Test: Electrical and Photometric tests

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: 9/15/17

Date of Tests: 9/18/17 - 9/20/17

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-S1	11/28/17
ITECH	IT6122	PS-DC03-S1	11/28/17
Fluke Digital Thermometer	52k/J	MT-TP02-GC	11/28/17
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-Z3-48-Z-SO-359-U2
Driver Model Number:	MEAN WELL HLG-40H-36A
Total Lumens:	3290.88
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.22
Input Power (W):	26.28
Input Power Factor:	0.99
Current ATHD @ 120V(%):	9%
Current ATHD @ 277V(%):	N/A
Efficacy:	125
Color Rendering Index (CRI):	96
Correlated Color Temperature (K):	3397
Chromaticity Coordinate x:	0.4100
Chromaticity Coordinate y:	0.3905
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	1:40

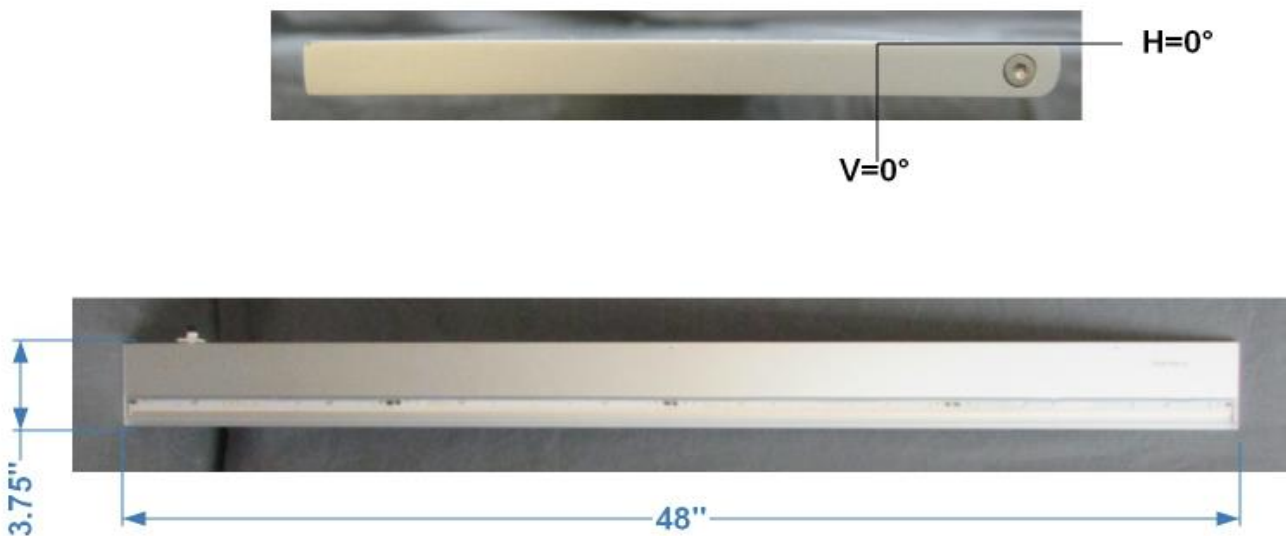
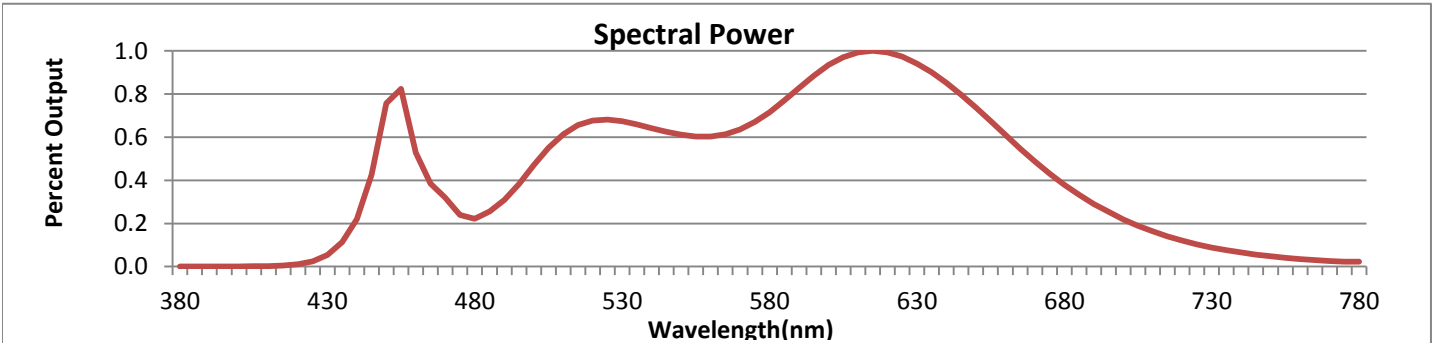


FIG. 1 LUMINAIRE

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



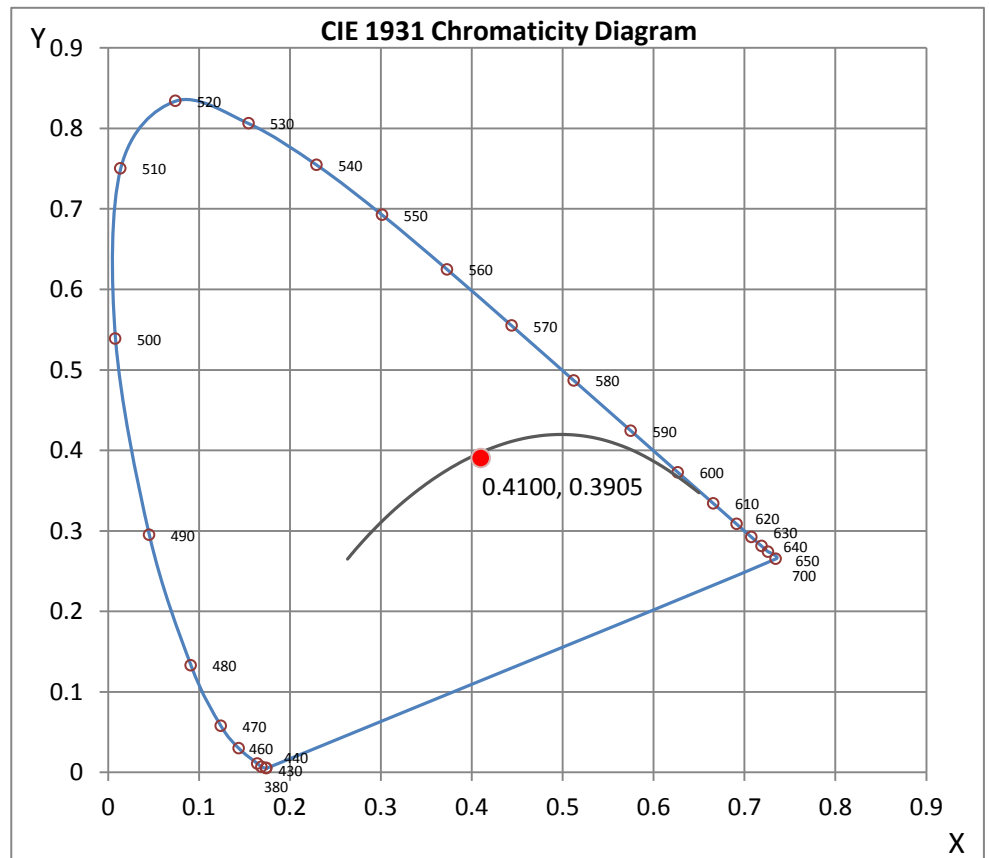
Wavelength	W/m ² nm	440	0.2196	510	0.6134	580	0.7164	650	0.7377	720	0.1205
380	0.0009	450	0.7571	520	0.6779	590	0.8292	660	0.6118	730	0.0888
390	0.0009	460	0.5288	530	0.6745	600	0.9348	670	0.4872	740	0.0651
400	0.0012	470	0.3191	540	0.6415	610	0.9934	680	0.3796	750	0.0478
410	0.0025	480	0.2213	550	0.6114	620	0.9930	690	0.2899	760	0.0352
420	0.0103	490	0.3096	560	0.6027	630	0.9418	700	0.2185	770	0.0260
430	0.0535	500	0.4702	570	0.6356	640	0.8526	710	0.1631	780	0.0225

CRI & CCT

x	0.4100
y	0.3905
u'	0.2389
v'	0.5119
CRI	95.70
CCT	3397
Duv	-0.00110

R Values

R1	97.00
R2	98.71
R3	98.74
R4	94.82
R5	97.17
R6	94.26
R7	94.85
R8	89.86
R9	75.47
R10	97.97
R11	87.68
R12	82.66
R13	96.69
R14	98.26



*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 : L091700109.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L091700109
 [TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
 [ISSUEDATE] 9/21/2017
 [MANUFAC] Vode Lighting
 [LUMCAT] 707-Z3-48-Z-SO-359-U2
 [LUMINAIRE] ZipThree LED, 48", 3500K, 90 CRI, zipper board,
 [MORE] symmetric w/edge glow up, standard output
 [BALLASTCAT] MEAN WELL HLG-40H-36A
 [OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
 [MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
 [INPUT] 120VAC, 26.28W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3291
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	125
Total Luminaire Watts	26.28
Ballast Factor	1.00
CIE Type	Indirect
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.08 ft
Luminous Width (90-270)	3.96 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	0	0	0
55	0	0	0
65	0	0	0
75	0	0	0
85	0	0	0

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	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0
75	0	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0	0
90	10	10	9	9	9	8	8	7	7	6
95	38	38	38	38	38	37	37	36	36	35
100	90	90	90	90	90	90	90	90	89	89
105	158	158	158	158	158	159	159	160	160	160
110	242	242	243	243	244	245	245	246	247	248
115	342	342	343	344	344	345	347	348	350	351
120	455	456	456	457	458	459	461	462	464	467
125	574	575	575	576	577	579	580	582	584	586
130	692	692	693	693	695	696	697	699	700	702
135	800	800	801	802	803	804	805	806	807	809
140	896	896	897	897	898	899	900	901	902	903
145	978	978	979	979	980	981	981	982	983	983
150	1048	1048	1048	1048	1049	1049	1050	1050	1050	1051
155	1104	1104	1104	1105	1105	1105	1106	1106	1106	1106
160	1149	1149	1149	1150	1150	1150	1150	1150	1150	1150
165	1183	1183	1183	1183	1183	1183	1183	1183	1183	1183
170	1207	1207	1207	1207	1206	1207	1207	1207	1207	1207
175	1220	1220	1220	1220	1220	1220	1220	1220	1220	1220
180	1224	1224	1224	1224	1224	1224	1224	1224	1224	1224

Vert. Horizontal Angles
 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	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0

IES INDOOR REPORT
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CANDELA TABULATION - (Cont.)

65	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0
75	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0
90	6	5	4	4	3	3	2	2	2
95	35	34	33	33	32	32	32	31	31
100	89	89	89	89	89	89	89	89	88
105	161	162	162	163	163	164	164	164	163
110	250	251	252	253	254	255	256	256	256
115	353	355	357	358	360	361	362	363	363
120	469	471	473	475	477	478	479	480	480
125	588	591	593	595	597	598	599	599	599
130	704	706	708	710	711	712	712	712	712
135	810	812	813	814	815	815	815	816	815
140	904	905	905	905	906	906	906	906	906
145	984	984	984	984	984	984	984	984	984
150	1051	1051	1051	1051	1051	1051	1051	1050	1050
155	1106	1106	1106	1106	1106	1106	1106	1105	1106
160	1150	1150	1150	1150	1150	1150	1150	1150	1150
165	1183	1183	1183	1183	1183	1183	1183	1183	1183
170	1207	1207	1207	1207	1207	1207	1207	1207	1207
175	1220	1220	1220	1220	1220	1220	1220	1220	1220
180	1224	1224	1224	1224	1224	1224	1224	1224	1224

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	0.00	N.A.	0.00
0-30	0.00	N.A.	0.00
0-40	0.00	N.A.	0.00
0-60	0.00	N.A.	0.00
0-80	0.00	N.A.	0.00
0-90	1.64	N.A.	0.00
10-90	1.64	N.A.	0.00
20-40	0.00	N.A.	0.00
20-50	0.00	N.A.	0.00
40-70	0.00	N.A.	0.00
60-80	0.00	N.A.	0.00
70-80	0.00	N.A.	0.00
80-90	1.64	N.A.	0.00
90-110	219.00	N.A.	6.70
90-120	570.27	N.A.	17.30
90-130	1094.17	N.A.	33.20
90-150	2329.85	N.A.	70.80
90-180	3289.23	N.A.	99.90
110-180	3070.24	N.A.	93.30
0-180	3290.88	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	0.00
10-20	0.00
20-30	0.00
30-40	0.00
40-50	0.00
50-60	0.00
60-70	0.00
70-80	0.00
80-90	1.64
90-100	45.01
100-110	173.99
110-120	351.27
120-130	523.91
130-140	622.06
140-150	613.61
150-160	509.32
160-170	334.03
170-180	116.04

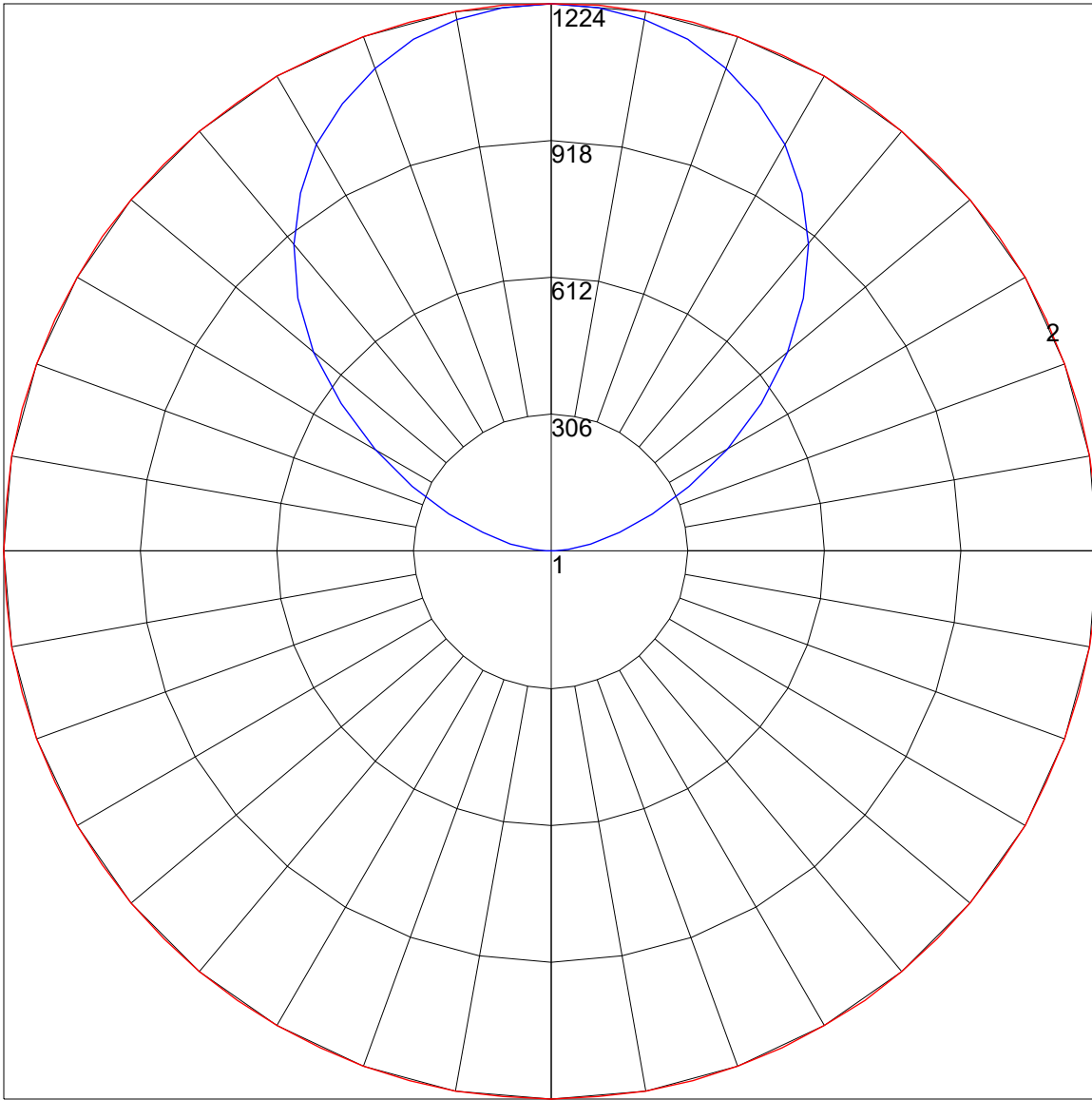
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	
0	95	95	95	95	81	81	81	81	56	56	56	32	32	32	10	10	10	0
1	87	83	79	76	74	71	68	65	48	47	45	28	27	26	9	9	8	0
2	79	72	66	62	67	62	57	53	42	40	37	24	23	22	8	7	7	0
3	72	63	56	51	61	54	49	44	37	34	31	21	20	18	7	6	6	0
4	65	56	48	43	56	48	42	37	33	29	26	19	17	16	6	6	5	0
5	60	49	42	36	51	42	36	32	29	25	22	17	15	13	5	5	4	0
6	55	44	36	31	47	38	32	27	26	22	19	15	13	11	5	4	4	0
7	50	39	32	27	43	34	28	23	23	19	17	14	11	10	4	4	3	0
8	47	35	28	23	40	30	24	20	21	17	14	12	10	9	4	3	3	0
9	43	32	25	20	37	27	22	18	19	15	13	11	9	8	4	3	3	0
10	40	29	22	18	34	25	19	16	17	14	11	10	8	7	3	3	2	0

POLAR GRAPH



Maximum Candela = 1224 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.)