

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-AL / WH-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	112	116	119	119
Total Lumens, 4' rail length (1219mm)	5842	6027	6150	6211
Lumens per foot (305mm)	1461	1507	1537	1553
Lumens per foot UP (305mm)	823	849	867	875
Lumens per foot DOWN (305mm)	637	657	671	677
Input Power (W), 4' rail length (1219mm)	52.2	52.2	51.7	52.2
Watts per foot (305mm)	13.1	13.1	13.0	13.1
CRI	94	94	94	94

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: L121911551



Report No: L121911551

Issue Date: 1/21/2020

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

Model Number: 707-Z3-48-Z-CC-SO-359-U1D2-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.

Special Test Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 12/16/19

Date of Tests: 1/10/20 - 1/21/20

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	1/9/21
BK PRECISION	1747	PS-DC04	1/10/21
Fluke Digital Thermometer	52K/J	MT-TP05	1/10/21
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

General Information

Manufacturer:	Vode Lighting
Model Number:	707-Z3-48-Z-CC-SO-359-U1D2-AL
Driver Model Number:	MEAN WELL HLG-40H-36A (2 DRIVERS)

Test Summary

Total Lumens:	6149.65
Efficacy:	118.95
Color Redering Index:	94.2
Correlated Color Temperature:	3368
Input Voltage (VAC/60Hz):	120.01
Input Current (Amp):	0.4337
Input Power (W):	51.70
Input Power Factor:	0.9936
Current ATHD (%):	8.0%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	2:30

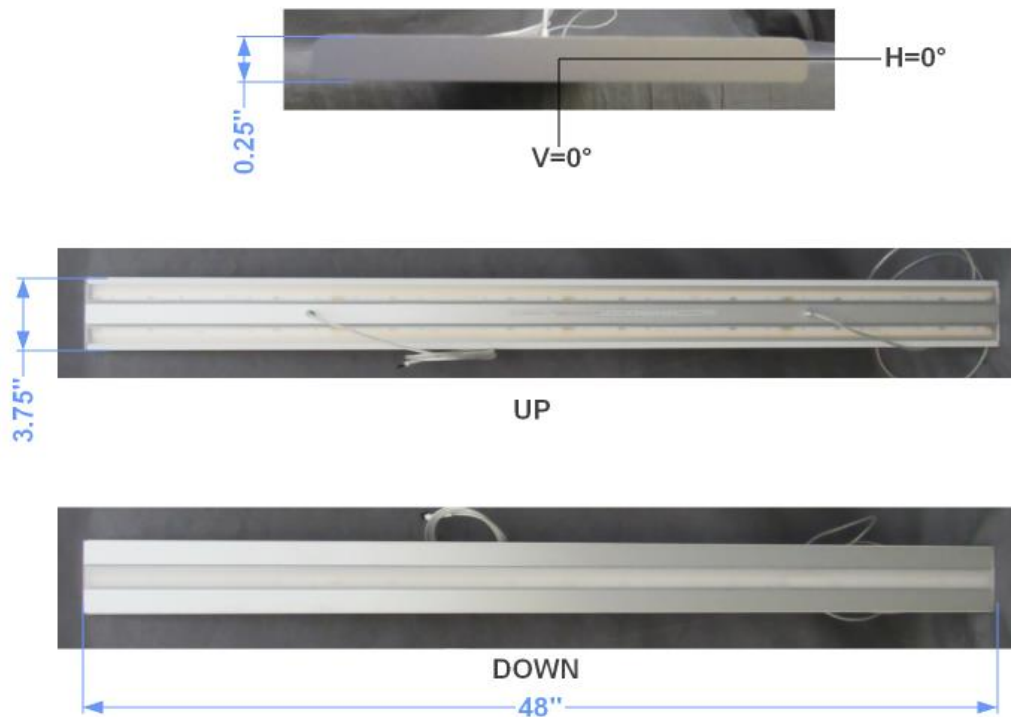
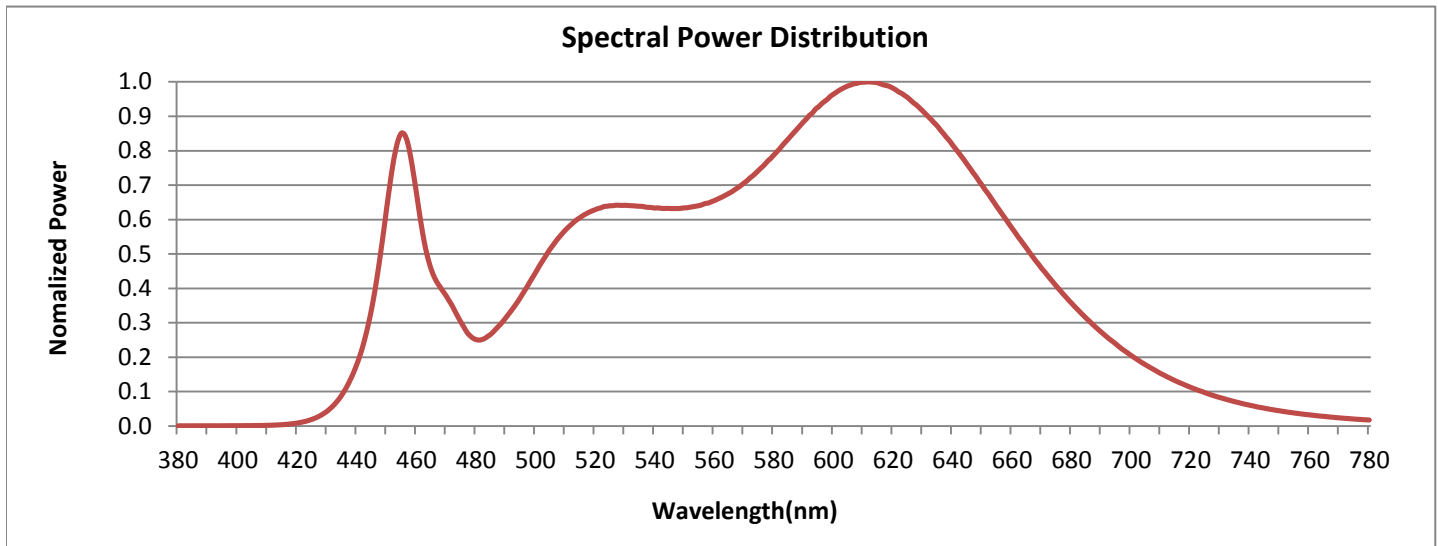


FIG. 1 LUMINAIRE

Colorimetry Test Results

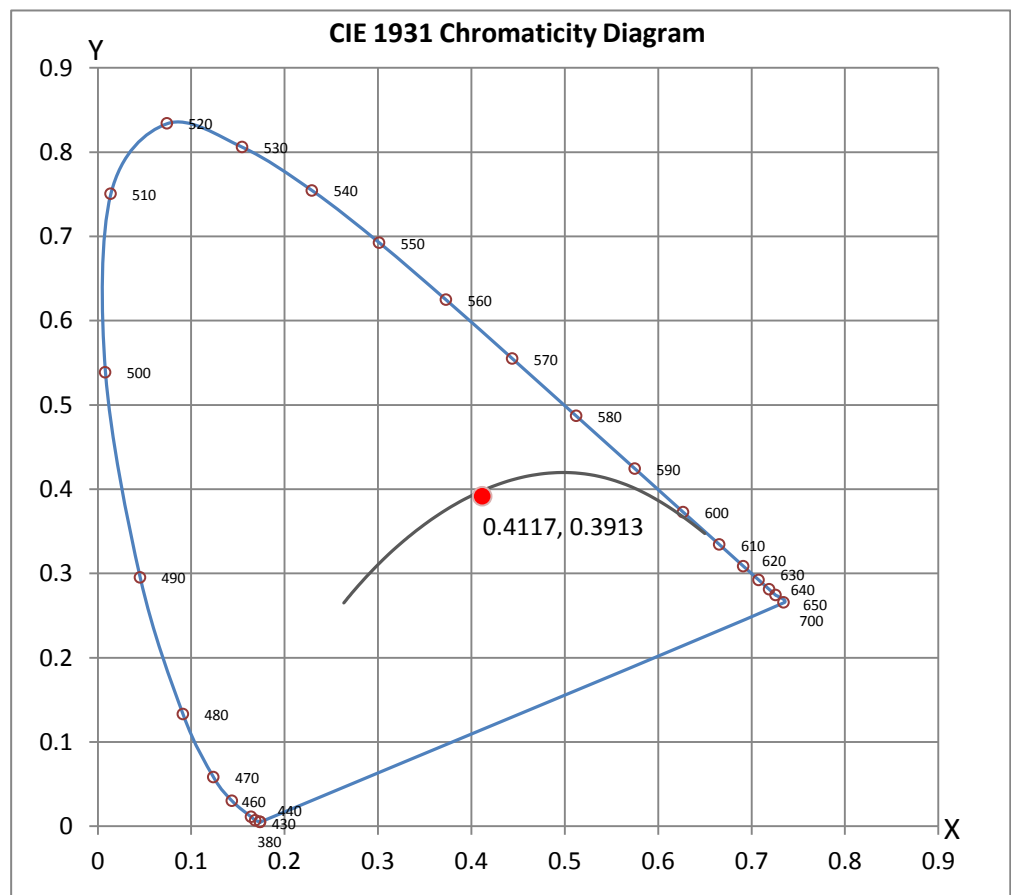


CRI & CCT

x	0.4117
y	0.3913
u'	0.2396
v'	0.5125
CRI	94.20
CCT	3368
Duv	-0.00109

R Values

R1	96.15
R2	98.85
R3	98.08
R4	96.67
R5	96.42
R6	95.74
R7	90.50
R8	80.86
R9	57.04
R10	97.17
R11	97.46
R12	78.05
R13	97.75
R14	99.58
R15	90.34





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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 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 : L121911551.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L121911551
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 1/21/2020
[MANUFAC] VODE LIGHTING
[LUMCAT] 707-Z3-48-Z-CC-SO-359-U1D2-AL
[LUMINAIRE] ZipThree LED Suspended, 48", 3500K, 90 CRI, zipper board, symmetric lens up/soft diffuse lens down,
[MORE] 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] 120.01VAC, 51.70W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	6150
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	119
Total Luminaire Watts	51.7
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)	0.26 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	8475	8585	9008
55	7967	8116	8689
65	7219	7415	8174
75	5990	6206	7213
85	3553	3802	5525

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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	922	922	922	922	922	922	922	922	922	922
5	919	919	919	919	919	919	920	919	919	919
10	907	908	908	907	907	907	907	907	907	907
15	888	888	888	888	888	888	888	887	888	888
20	860	860	860	860	860	860	860	859	859	859
25	825	825	825	825	825	825	824	824	824	824
30	783	783	783	783	783	782	782	782	782	781
35	734	735	735	734	734	734	734	734	733	733
40	680	680	680	680	680	680	679	679	679	678
45	621	621	621	620	620	620	620	619	619	618
50	556	556	556	556	556	555	555	554	554	554
55	488	488	488	488	488	487	487	486	486	485
60	416	416	416	416	416	415	415	415	414	414
65	342	342	342	342	342	341	341	340	340	339
70	267	267	267	266	266	266	265	265	264	264
75	192	192	192	191	191	191	190	190	189	188
80	120	120	120	120	119	119	118	118	117	116
85	56	56	56	56	56	55	55	55	54	53
90	5	5	5	5	5	5	5	5	5	5
95	37	37	37	37	38	38	38	38	38	38
100	84	85	85	85	86	87	87	88	89	89
105	141	141	142	143	144	145	146	148	149	152
110	208	209	210	212	214	218	222	226	230	235
115	300	301	302	305	308	313	318	325	334	345
120	410	410	413	417	423	430	439	449	459	469
125	546	547	550	554	560	568	575	583	590	597
130	691	691	693	696	700	705	710	715	721	726
135	825	826	827	829	832	835	839	843	846	850
140	947	947	948	949	951	953	956	959	962	964
145	1052	1053	1053	1054	1055	1057	1058	1060	1062	1064
150	1141	1141	1142	1142	1143	1144	1145	1146	1147	1148
155	1213	1213	1213	1214	1214	1215	1215	1216	1216	1217
160	1270	1270	1270	1270	1270	1270	1271	1271	1271	1272
165	1312	1312	1312	1312	1312	1312	1312	1312	1312	1313
170	1340	1340	1340	1340	1340	1340	1340	1341	1341	1340
175	1356	1356	1356	1356	1356	1356	1356	1356	1356	1356
180	1360	1360	1360	1360	1360	1360	1360	1360	1360	1360

Vert. 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	922	922	922	922	922	922	922	922	922
5	919	919	919	919	919	919	919	919	919
10	907	907	907	907	907	907	907	907	907
15	888	887	887	887	887	886	887	887	887
20	859	859	859	859	859	858	858	858	858
25	824	823	823	823	823	823	823	823	822
30	781	781	780	780	780	780	780	780	780
35	732	732	731	731	731	731	731	731	731
40	678	677	677	677	676	676	676	676	676
45	618	617	617	617	616	616	616	616	616
50	553	553	553	552	552	552	551	551	551
55	485	485	485	484	484	483	483	483	483
60	413	413	412	412	411	411	411	411	411

IES INDOOR REPORT
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CANDELA TABULATION - (Cont.)

65	339	338	338	337	337	337	336	336	336
70	263	262	261	261	260	260	260	259	259
75	187	187	186	185	184	184	183	183	183
80	116	115	114	113	112	111	111	110	110
85	53	52	51	51	50	50	49	49	49
90	5	5	5	5	4	4	4	4	4
95	38	38	38	37	37	36	37	39	39
100	89	89	90	91	94	100	102	102	102
105	156	159	164	172	178	181	182	182	182
110	243	253	262	269	272	275	276	277	277
115	355	364	370	375	378	381	382	383	383
120	476	483	488	492	496	498	500	501	501
125	603	608	613	617	620	623	624	625	626
130	731	735	739	743	745	748	749	750	751
135	854	858	861	864	866	868	869	870	870
140	967	970	972	974	976	977	978	978	979
145	1066	1068	1069	1071	1072	1073	1073	1073	1073
150	1150	1151	1152	1152	1153	1154	1154	1154	1154
155	1218	1218	1219	1219	1220	1220	1220	1221	1220
160	1272	1272	1272	1273	1273	1273	1273	1273	1273
165	1313	1313	1313	1313	1313	1313	1313	1313	1313
170	1341	1341	1341	1341	1341	1341	1341	1341	1341
175	1356	1356	1356	1356	1356	1356	1356	1357	1357
180	1360	1360	1360	1360	1360	1360	1360	1360	1360

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	337.74	N.A.	5.50
0-30	717.40	N.A.	11.70
0-40	1175.74	N.A.	19.10
0-60	2086.41	N.A.	33.90
0-80	2621.11	N.A.	42.60
0-90	2682.77	N.A.	43.60
10-90	2595.43	N.A.	42.20
20-40	838.00	N.A.	13.60
20-50	1314.86	N.A.	21.40
40-70	1246.24	N.A.	20.30
60-80	534.70	N.A.	8.70
70-80	199.14	N.A.	3.20
80-90	61.66	N.A.	1.00
90-110	217.41	N.A.	3.50
90-120	561.02	N.A.	9.10
90-130	1090.08	N.A.	17.70
90-150	2407.31	N.A.	39.10
90-180	3466.88	N.A.	56.40
110-180	3249.47	N.A.	52.80
0-180	6149.65	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	87.34
10-20	250.40
20-30	379.66
30-40	458.34
40-50	476.86
50-60	433.81
60-70	335.57
70-80	199.14
80-90	61.66
90-100	46.44
100-110	170.97
110-120	343.62
120-130	529.05
130-140	653.35
140-150	663.88
150-160	560.28
160-170	370.34
170-180	128.94

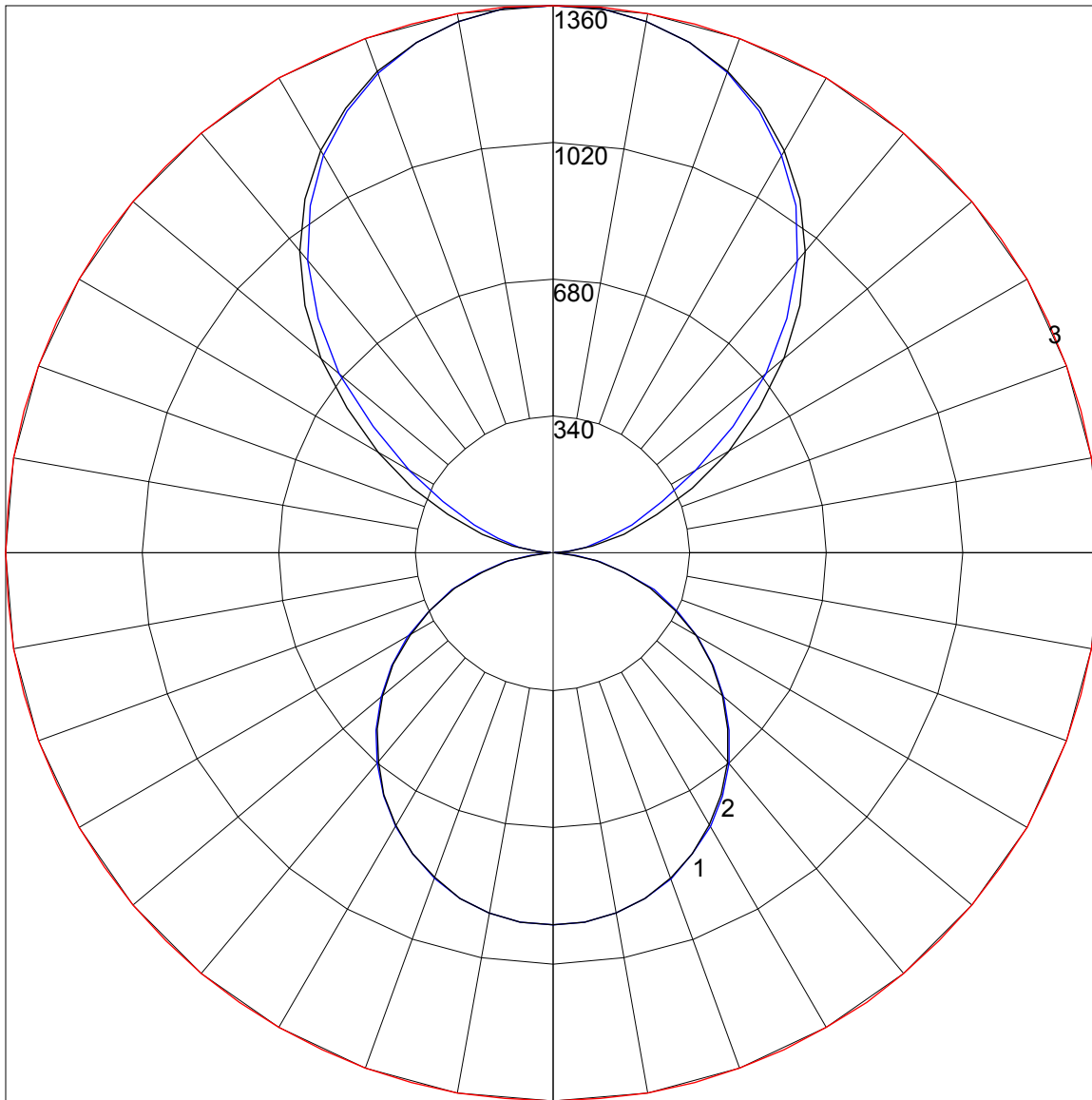
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	38	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	31	30	28	25	21
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	18	20	17	15	13
9	49	37	29	24	44	34	27	22	28	23	19	24	19	17	19	16	14	11
10	45	33	26	21	42	31	24	20	26	21	18	22	18	15	17	14	12	10

POLAR GRAPH



Maximum Candela = 1360 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.)