

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	105	108	111	112
Total Lumens, 4' rail length (1219mm)	5458	5630	5745	5802
Lumens per foot (305mm)	1364	1408	1436	1451
Lumens per foot UP (305mm)	760	784	800	808
Lumens per foot DOWN (305mm)	605	624	636	643
Input Power (W), 4' rail length (1219mm)	52.2	52.2	52.2	52.2
Watts per foot (305mm)	13.1	13.1	13.1	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: L022010919



Report No: L022010919

Issue Date: 2/28/2020

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

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

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

Sample Arrival Date: 2/20/20

Date of Tests: 2/20/20 - 2/28/20

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-BL
Driver Model Number:	MEAN WELL HLG-40H-36A (2 DRIVERS)

Test Summary

Total Lumens:	5745.00
Efficacy:	110.89
Color Redering Index:	94.7
Correlated Color Temperature:	3383
Input Voltage (VAC/60Hz):	120.03
Input Current (Amp):	0.4345
Input Power (W):	51.81
Input Power Factor:	0.9934
Current ATHD (%):	8.1%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:45
Total Operating Time (Hours):	2:45

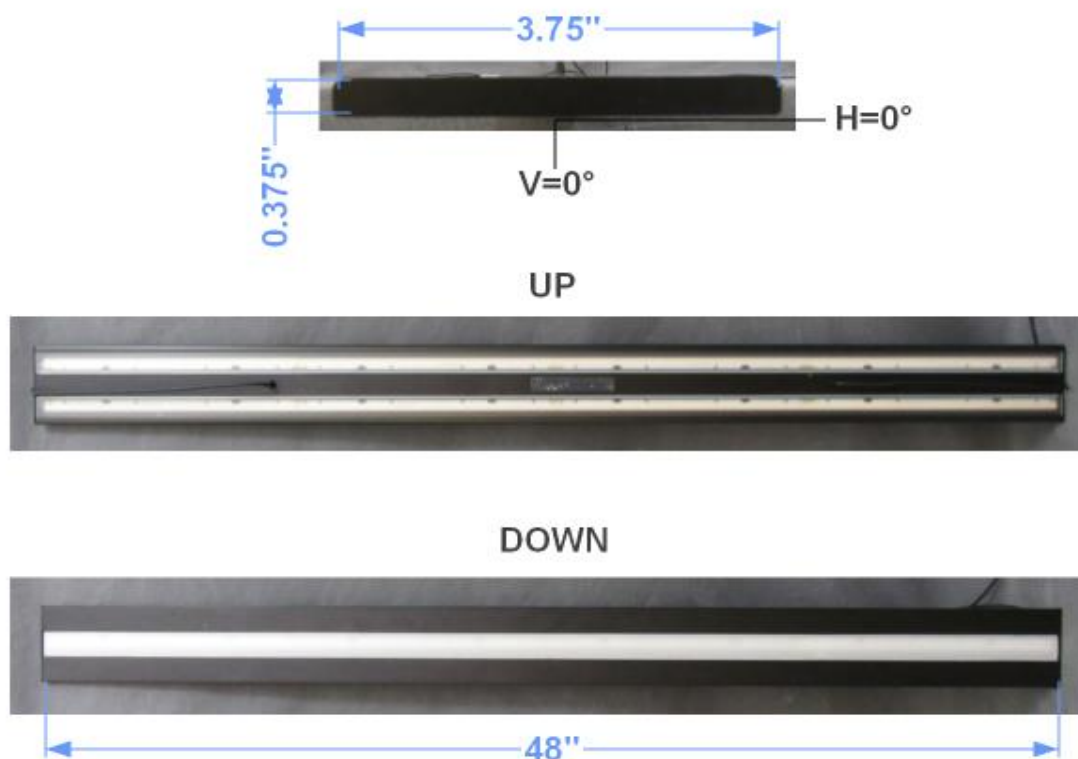
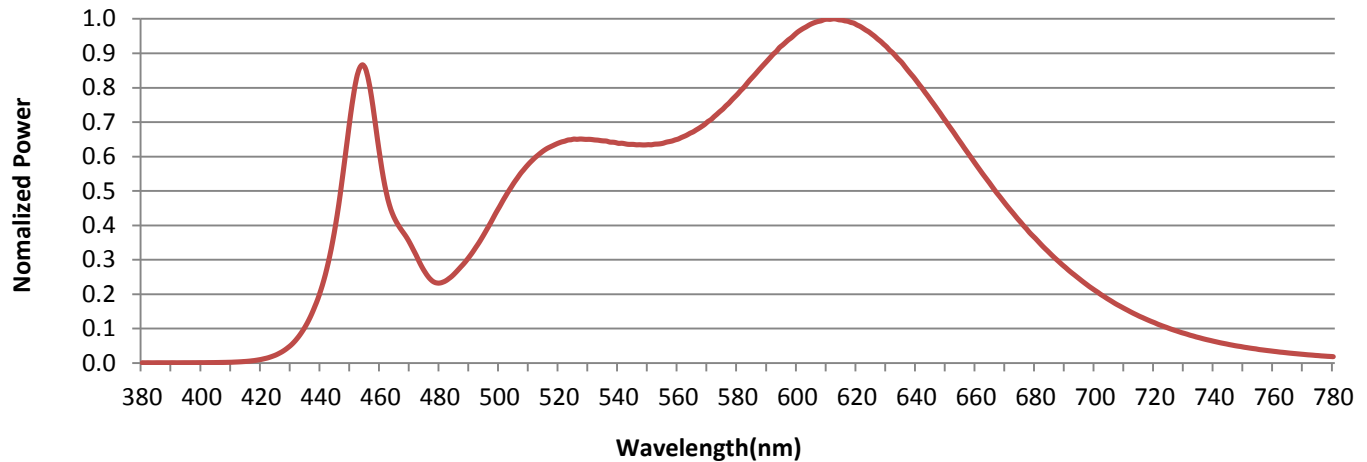


FIG. 1 LUMINAIRE

Colorimetry Test Results

Spectral Power Distribution



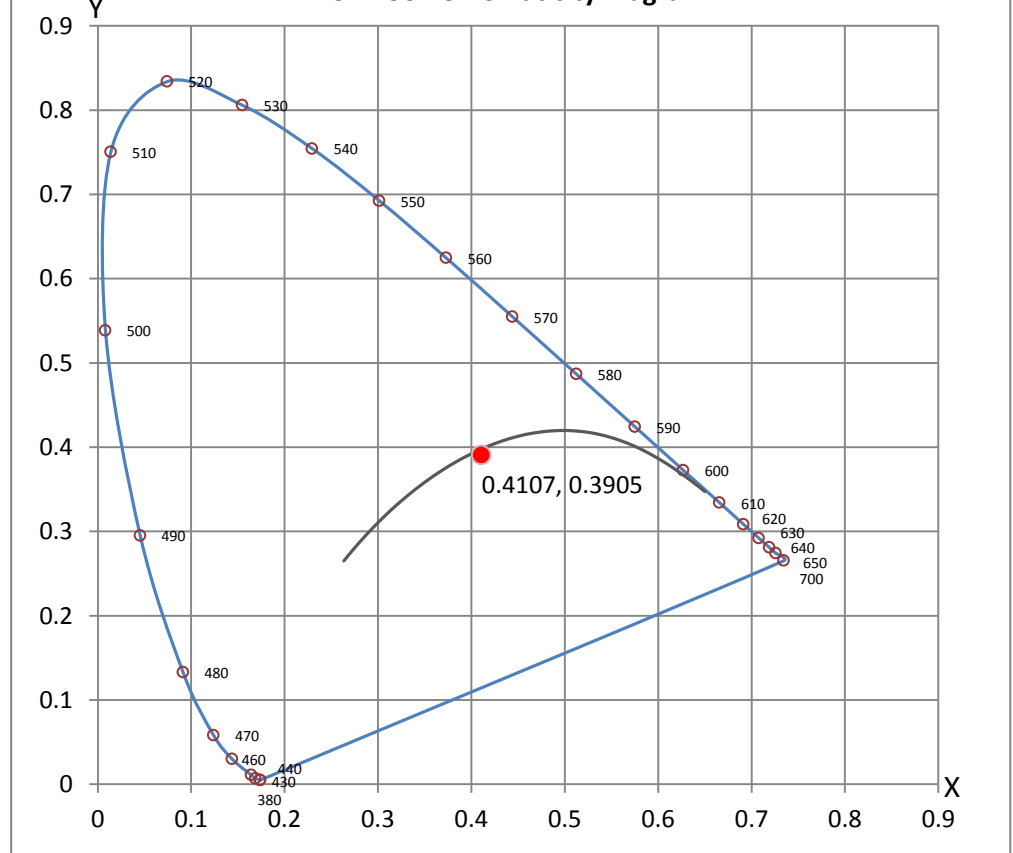
CRI & CCT

x	0.4107
y	0.3905
u'	0.2393
v'	0.5120
CRI	94.70
CCT	3383
Duv	-0.00124

R Values

R1	96.59
R2	98.51
R3	98.64
R4	97.59
R5	97.12
R6	95.99
R7	91.40
R8	81.99
R9	58.64
R10	96.50
R11	95.83
R12	79.25
R13	97.91
R14	99.19
R15	90.87

CIE 1931 Chromaticity Diagram





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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 : L022010919.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L022010919
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 2/28/2020
[MANUFAC] Vode Lighting
[LUMCAT] 707-Z3-48-Z-CC-SO-359-U1D2-BL
[LUMINAIRE] ZipThree LED Suspended, 48", 3500K, 90 CRI, zipper board, symmetric lens
[MORE] 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] 120.03VAC, 51.81W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5745
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	111
Total Luminaire Watts	51.81
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	0.03 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	7761	7951	8548
55	7218	7446	8246
65	6387	6695	7768
75	5052	5366	6834
85	2674	2991	5160

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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	871	871	871	871	871	871	871	871	871	871
5	869	869	869	869	869	869	869	869	869	869
10	858	858	858	858	858	858	858	858	858	858
15	840	840	840	840	840	840	840	840	840	840
20	815	814	815	815	814	814	814	814	814	814
25	782	782	782	782	781	781	781	781	781	781
30	742	742	742	742	742	742	742	741	741	741
35	697	697	697	696	696	696	696	696	695	695
40	646	646	646	646	646	645	645	645	644	644
45	589	589	589	589	589	589	589	588	588	588
50	529	529	529	528	528	528	528	527	527	527
55	464	464	464	464	463	463	463	463	462	462
60	395	395	395	395	395	395	394	394	394	394
65	324	324	324	324	324	324	323	323	323	323
70	252	252	252	251	251	251	251	250	250	250
75	180	180	180	179	179	179	179	178	178	177
80	111	111	111	111	111	111	110	110	110	109
85	52	52	52	52	52	51	51	51	50	50
90	4	4	4	4	4	4	4	4	4	4
95	34	34	34	34	35	35	35	36	36	36
100	74	74	74	75	76	77	79	81	82	84
105	129	129	130	131	133	135	137	140	142	144
110	196	196	198	199	201	204	207	210	214	219
115	276	276	278	280	283	288	293	298	304	310
120	374	375	377	380	383	388	394	400	408	418
125	486	486	488	492	497	503	510	519	527	535
130	611	612	614	618	623	629	635	642	648	655
135	738	739	741	743	747	751	756	761	767	773
140	856	856	857	859	862	866	870	874	879	884
145	961	962	963	964	967	969	973	976	980	984
150	1053	1054	1054	1055	1057	1059	1062	1065	1068	1071
155	1131	1131	1132	1132	1134	1135	1137	1139	1142	1144
160	1194	1194	1194	1195	1196	1197	1198	1199	1200	1202
165	1242	1241	1242	1242	1243	1243	1244	1244	1246	1246
170	1275	1275	1275	1275	1275	1275	1276	1276	1276	1277
175	1293	1293	1293	1293	1293	1293	1293	1293	1293	1293
180	1297	1297	1297	1297	1297	1297	1297	1297	1297	1297

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>
0	871	871	871	871	871	871	871	871	871
5	869	869	869	869	869	869	869	869	869
10	858	858	858	858	858	858	858	858	858
15	840	840	840	840	840	840	840	840	840
20	814	814	813	814	813	813	813	813	813
25	780	780	780	780	780	780	780	780	780
30	741	740	740	740	740	740	740	739	739
35	695	695	694	694	694	694	693	693	693
40	644	643	643	643	643	642	642	642	642
45	587	587	587	586	586	586	586	586	586
50	526	526	526	525	525	525	525	525	525
55	462	461	461	461	461	460	460	460	460
60	393	393	393	392	392	392	392	392	392

IES INDOOR REPORT
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CANDELA TABULATION - (Cont.)

65	322	322	322	321	321	321	321	321	321
70	249	249	249	248	248	248	248	248	248
75	177	176	176	176	175	175	175	175	175
80	109	108	108	107	106	106	106	106	106
85	50	49	49	48	48	47	47	47	47
90	5	6	6	6	5	5	5	5	5
95	36	36	37	37	36	36	37	38	38
100	85	86	87	88	89	91	93	93	93
105	147	150	153	156	160	162	163	163	163
110	224	229	234	240	244	245	246	246	247
115	317	325	332	337	340	342	343	344	344
120	427	433	439	444	447	450	452	453	453
125	542	549	554	559	563	567	569	571	572
130	661	667	673	679	683	687	690	692	692
135	779	784	790	796	800	804	807	809	810
140	889	894	900	904	909	912	915	917	917
145	989	993	998	1002	1005	1008	1010	1012	1012
150	1075	1078	1081	1084	1087	1089	1091	1092	1092
155	1147	1149	1151	1153	1155	1156	1158	1158	1159
160	1204	1205	1207	1208	1209	1210	1211	1211	1211
165	1247	1248	1249	1250	1250	1250	1251	1251	1251
170	1277	1277	1277	1278	1278	1278	1278	1278	1279
175	1293	1293	1294	1294	1294	1294	1294	1294	1294
180	1297	1297	1297	1297	1297	1297	1297	1297	1297

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	319.60	N.A.	5.60
0-30	679.40	N.A.	11.80
0-40	1114.27	N.A.	19.40
0-60	1980.21	N.A.	34.50
0-80	2487.36	N.A.	43.30
0-90	2545.34	N.A.	44.30
10-90	2462.75	N.A.	42.90
20-40	794.67	N.A.	13.80
20-50	1247.88	N.A.	21.70
40-70	1184.92	N.A.	20.60
60-80	507.15	N.A.	8.80
70-80	188.17	N.A.	3.30
80-90	57.98	N.A.	1.00
90-110	200.43	N.A.	3.50
90-120	511.84	N.A.	8.90
90-130	988.21	N.A.	17.20
90-150	2198.71	N.A.	38.30
90-180	3199.67	N.A.	55.70
110-180	2999.23	N.A.	52.20
0-180	5745.00	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	82.58
10-20	237.02
20-30	359.80
30-40	434.87
40-50	453.21
50-60	412.73
60-70	318.97
70-80	188.17
80-90	57.98
90-100	43.39
100-110	157.04
110-120	311.40
120-130	476.37
130-140	595.38
140-150	615.12
150-160	526.59
160-170	351.46
170-180	122.90

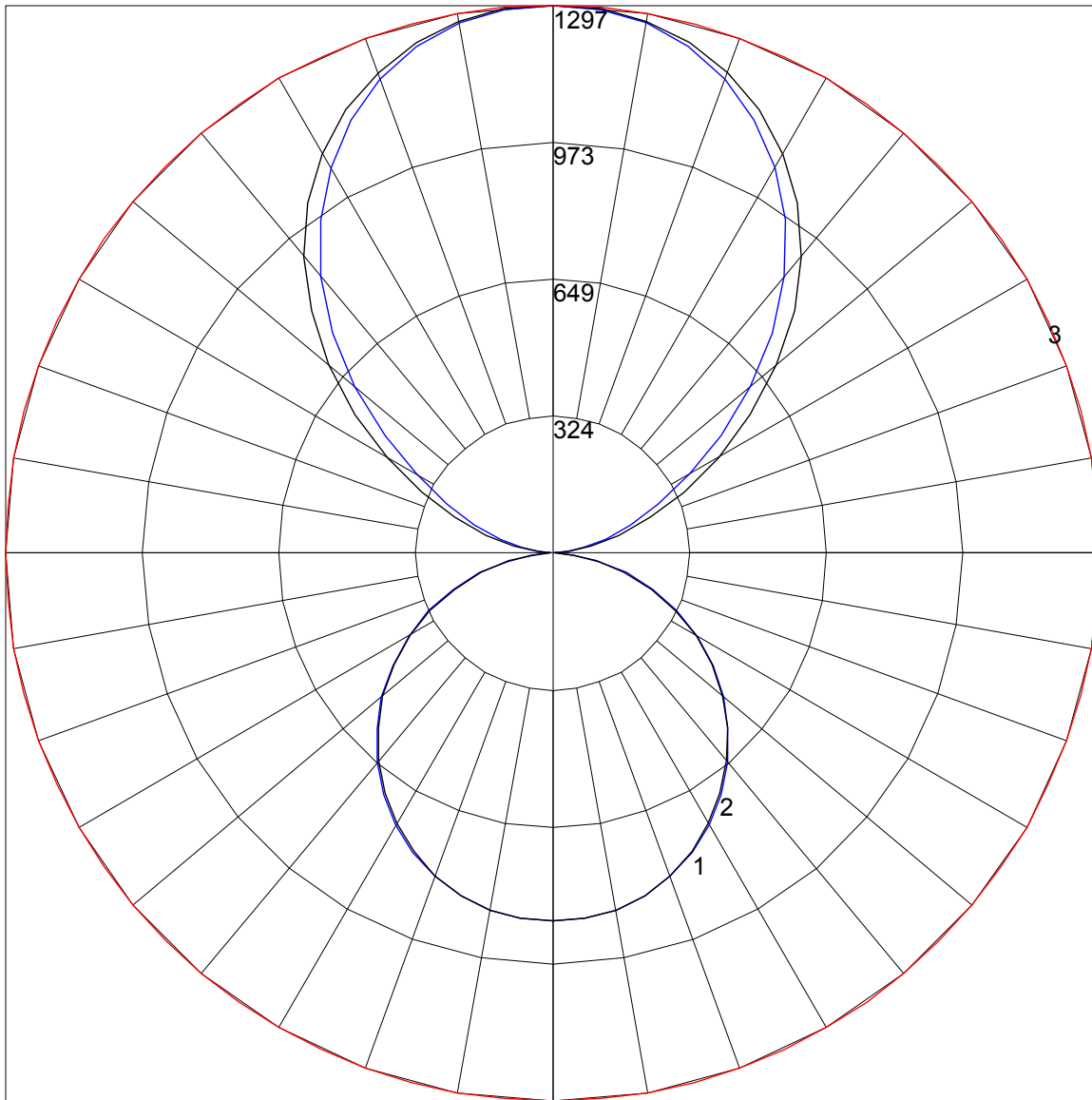
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	65	65	65	51	51	51	44
1	96	92	88	84	88	84	81	78	70	67	65	57	55	54	45	43	42	37
2	87	80	74	69	80	73	68	64	61	57	54	50	47	44	39	37	35	31
3	80	70	63	57	73	64	58	53	54	49	45	44	40	37	34	32	30	26
4	73	62	54	48	66	57	50	45	47	42	38	39	35	32	31	28	26	22
5	67	55	47	41	61	51	43	38	42	37	33	35	31	27	27	25	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	23	20	17	14
8	52	40	32	27	48	37	30	25	31	26	22	26	22	19	21	18	15	13
9	49	37	29	24	45	34	27	23	29	23	20	24	20	17	19	16	14	12
10	46	33	26	21	42	31	25	20	26	21	18	22	18	15	18	15	12	10

POLAR GRAPH



Maximum Candela = 1297 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.)