

IES Report

ZipThree® | Ceiling Cable | 707 | Symmetric, up | 80° Symmetric, down | 90 CRI | SO

707-Z3-XX-4-48-CC-XX-XX-XX-X-0-Z-SO-359-U1S7-0-BL-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	99	102	104	108
Total Lumens, 4' rail length (1219mm)	5156	5318	5427	5481
Lumens per foot (305mm)	1289	1330	1357	1370
Lumens per foot UP (305mm)	767	791	807	815
Lumens per foot DOWN (305mm)	522	539	550	555
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: L022010921



Report No: L022010921

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-U1S7-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-U1S7-BL
Driver Model Number:	MEAN WELL HLG-40H-36A (2 DRIVERS)

Test Summary

Total Lumens:	5426.92
Efficacy:	104.79
Color Redering Index:	94.8
Correlated Color Temperature:	3444
Input Voltage (VAC/60Hz):	120.01
Input Current (Amp):	0.4344
Input Power (W):	51.79
Input Power Factor:	0.9934
Current ATHD (%):	8.2%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:45
Total Operating Time (Hours):	2:50

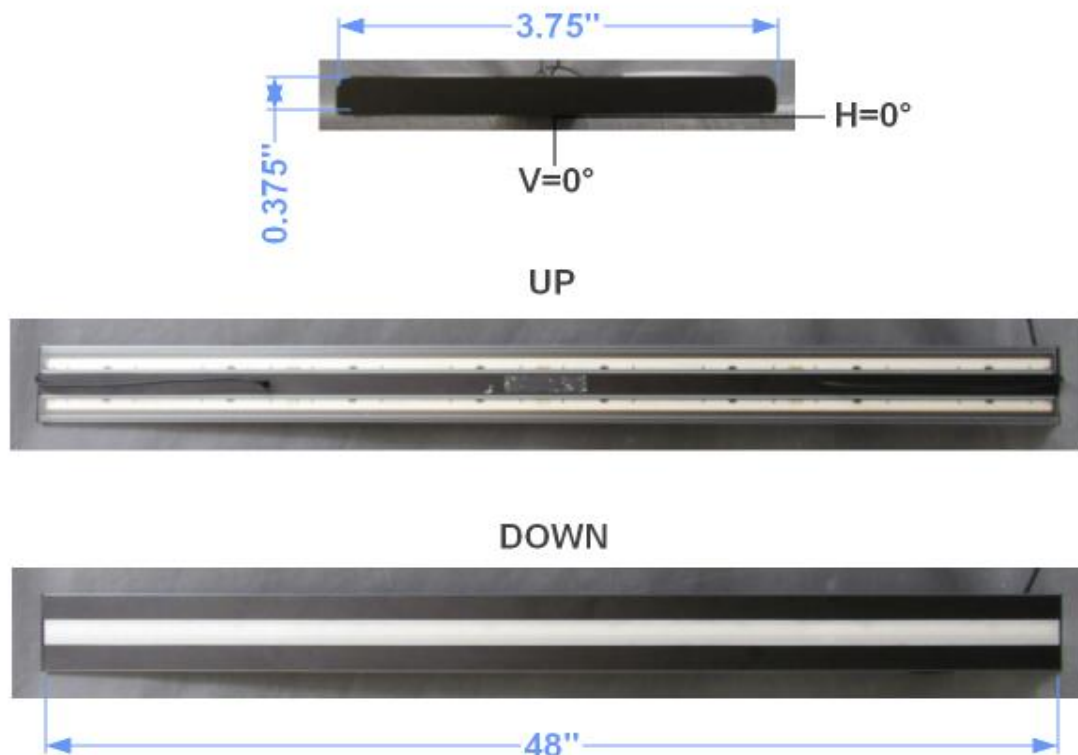
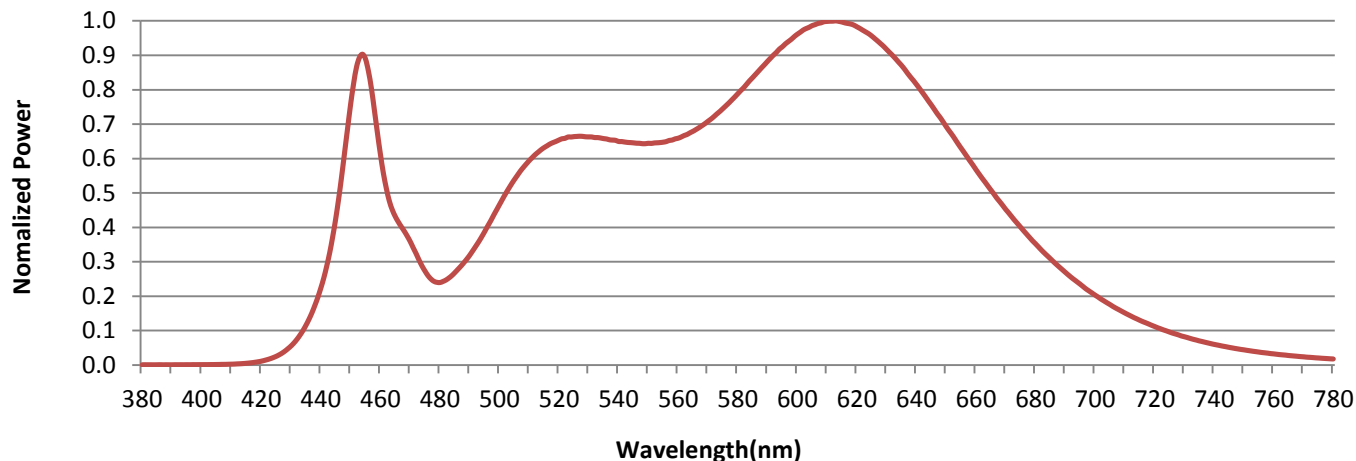


FIG. 1 LUMINAIRE

Colorimetry Test Results

Spectral Power Distribution



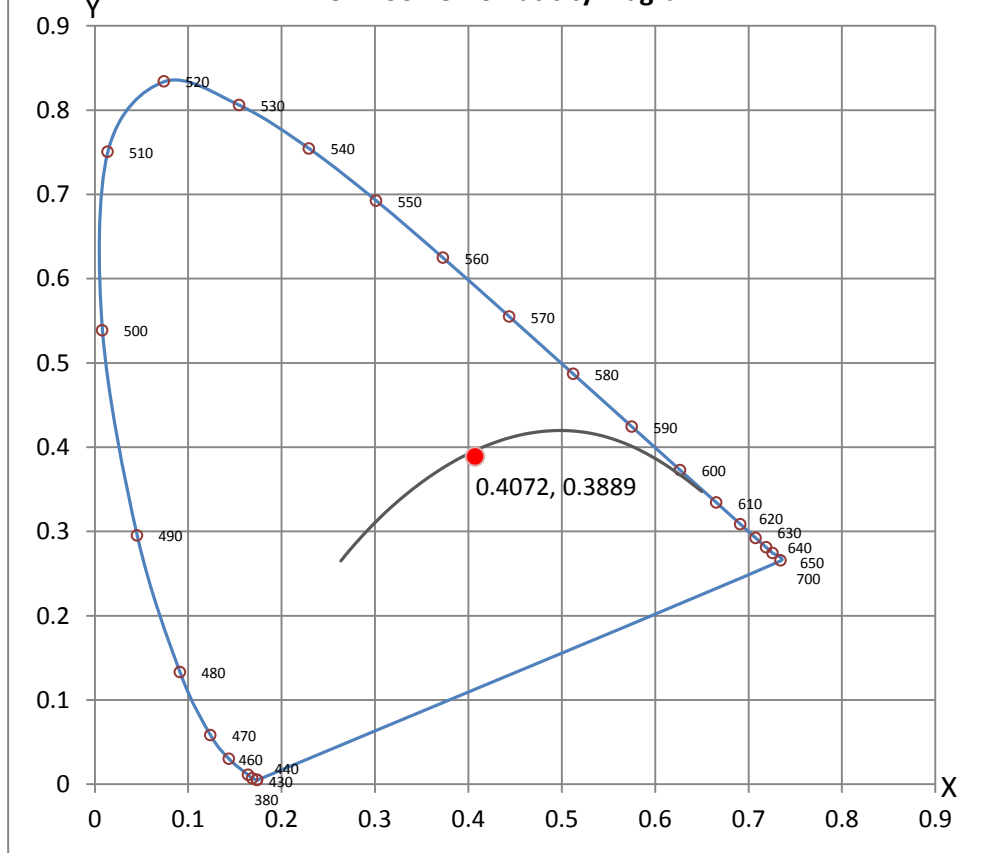
CRI & CCT

x	0.4072
y	0.3889
u'	0.2377
v'	0.5108
CRI	94.80
CCT	3444
Duv	-0.00121

R Values

R1	96.65
R2	98.48
R3	98.68
R4	97.64
R5	97.11
R6	95.99
R7	91.58
R8	82.28
R9	58.98
R10	96.37
R11	95.76
R12	78.71
R13	97.95
R14	99.11
R15	91.04

CIE 1931 Chromaticity Diagram





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

Report No: L022010921



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 : L022010921.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L022010921
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 2/28/2020
[MANUFAC] Vode Lighting
[LUMCAT] 707-Z3-48-Z-CC-SO-359-U1S7-BL
[LUMINAIRE] ZipThree LED Suspended, 48", 3500K, 90 CRI, zipper board, symmetric lens
[MORE] up/80° symmetric 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] 120.01VAC, 51.79W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5427
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	105
Total Luminaire Watts	51.79
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	5916	7220	7162
55	3033	4207	4356
65	1518	2259	2638
75	786	1213	1679
85	309	479	988

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L022010921.IES

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	1237	1237	1237	1237	1237	1237	1237	1237	1237	1237
5	1233	1232	1232	1232	1232	1233	1232	1232	1232	1232
10	1215	1215	1215	1215	1215	1215	1215	1214	1214	1214
15	1183	1183	1183	1183	1182	1183	1182	1182	1181	1180
20	1130	1130	1130	1130	1130	1130	1130	1130	1129	1128
25	1051	1051	1052	1053	1055	1056	1057	1057	1057	1056
30	940	941	943	946	950	954	957	959	960	959
35	793	794	798	804	812	819	826	832	835	836
40	621	623	629	637	648	659	670	680	687	691
45	449	451	457	466	478	492	505	518	528	534
50	303	304	310	318	329	341	354	367	378	385
55	195	196	200	206	215	225	235	246	255	261
60	123	124	127	131	137	144	151	158	165	170
65	77	78	80	82	86	91	95	100	105	109
70	48	48	49	51	53	56	59	62	65	67
75	28	28	29	30	31	33	35	37	38	40
80	15	15	15	16	16	17	18	19	20	21
85	6	6	6	6	7	7	7	8	8	8
90	2	2	2	2	2	2	2	2	2	2
95	29	29	29	29	30	30	30	31	31	31
100	66	66	67	68	70	72	75	78	81	84
105	128	128	129	131	133	136	139	142	145	147
110	200	201	202	204	206	209	213	216	220	224
115	285	286	287	289	293	296	301	306	312	319
120	386	386	388	391	395	400	406	413	420	426
125	502	503	505	508	513	518	523	530	536	543
130	626	627	628	631	635	640	645	651	657	663
135	749	750	751	754	757	761	766	771	777	782
140	866	866	867	869	872	875	879	884	888	893
145	970	971	972	973	975	978	981	985	989	993
150	1061	1061	1061	1063	1064	1066	1069	1072	1075	1078
155	1136	1136	1137	1138	1139	1141	1142	1145	1147	1149
160	1197	1197	1198	1198	1199	1200	1201	1203	1204	1206
165	1243	1243	1244	1244	1245	1245	1246	1247	1247	1248
170	1275	1275	1275	1276	1276	1276	1276	1277	1277	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	1237	1237	1237	1237	1237	1237	1237	1237	1237
5	1232	1232	1232	1232	1232	1232	1232	1232	1232
10	1214	1213	1213	1213	1213	1212	1212	1212	1212
15	1180	1179	1178	1177	1176	1176	1175	1175	1175
20	1127	1125	1123	1121	1120	1118	1117	1116	1116
25	1054	1051	1048	1044	1041	1038	1036	1035	1034
30	957	953	948	943	938	933	929	927	926
35	834	830	824	817	810	803	798	795	793
40	691	687	680	672	663	655	649	645	643
45	536	533	528	519	511	503	496	492	491
50	388	387	383	377	370	363	358	355	354
55	265	265	263	259	255	250	247	244	243
60	173	174	173	172	169	167	165	164	163

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L022010921.IES

CANDELA TABULATION - (Cont.)

65	111	112	112	112	111	110	109	109	109
70	69	70	71	71	71	71	71	70	70
75	41	42	43	43	43	43	43	43	43
80	22	22	23	23	23	23	23	23	23
85	8	9	9	9	9	9	9	9	9
90	2	2	2	2	2	2	2	2	2
95	32	33	35	36	37	36	37	37	36
100	86	87	88	89	90	91	91	91	91
105	150	152	155	157	159	160	161	161	160
110	229	234	238	241	243	244	245	245	245
115	325	330	335	338	341	343	344	345	345
120	433	438	443	448	452	454	456	458	458
125	549	555	561	566	571	574	577	579	579
130	670	676	682	688	693	697	700	702	702
135	788	794	800	806	811	815	818	820	820
140	899	904	909	914	918	922	925	927	927
145	997	1002	1006	1010	1013	1016	1018	1020	1020
150	1081	1085	1088	1091	1093	1096	1097	1098	1098
155	1151	1154	1156	1158	1160	1161	1162	1163	1163
160	1207	1208	1210	1211	1212	1213	1213	1214	1214
165	1249	1250	1250	1251	1251	1252	1252	1252	1252
170	1277	1278	1278	1278	1278	1279	1279	1279	1279
175	1293	1294	1294	1294	1294	1294	1294	1294	1294
180	1297	1297	1297	1297	1297	1297	1297	1297	1297

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L022010921.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	448.96	N.A.	8.30
0-30	929.51	N.A.	17.10
0-40	1434.93	N.A.	26.40
0-60	2043.71	N.A.	37.70
0-80	2189.01	N.A.	40.30
0-90	2199.25	N.A.	40.50
10-90	2082.24	N.A.	38.40
20-40	985.98	N.A.	18.20
20-50	1374.14	N.A.	25.30
40-70	712.39	N.A.	13.10
60-80	145.30	N.A.	2.70
70-80	41.68	N.A.	0.80
80-90	10.24	N.A.	0.20
90-110	197.68	N.A.	3.60
90-120	514.80	N.A.	9.50
90-130	1000.13	N.A.	18.40
90-150	2223.8	N.A.	41.00
90-180	3227.67	N.A.	59.50
110-180	3029.98	N.A.	55.80
0-180	5426.92	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	117.01
10-20	331.94
20-30	480.56
30-40	505.42
40-50	388.16
50-60	220.61
60-70	103.62
70-80	41.68
80-90	10.24
90-100	40.22
100-110	157.46
110-120	317.12
120-130	485.33
130-140	603.27
140-150	620.40
150-160	528.95
160-170	351.99
170-180	122.92

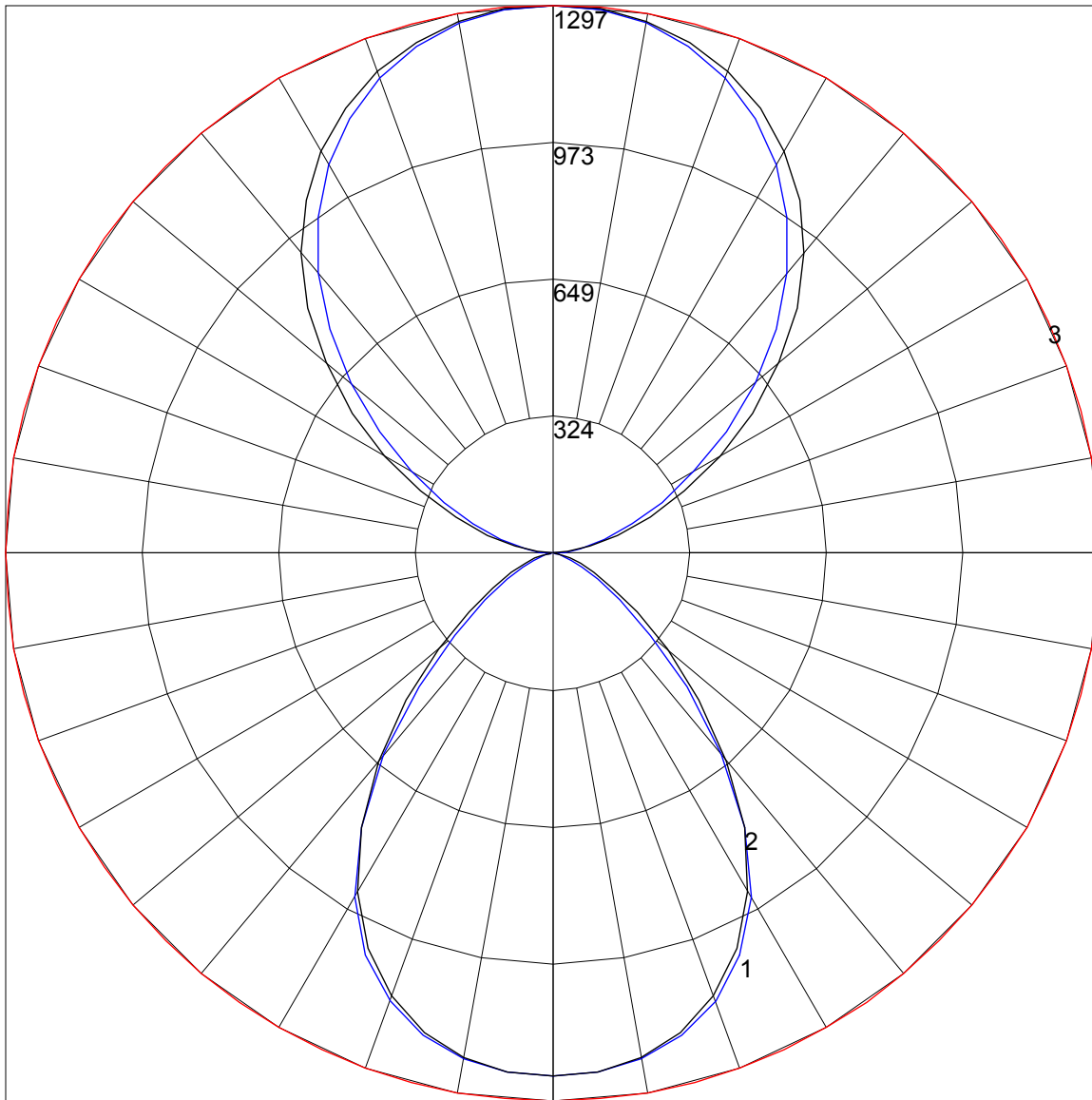
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L022010921.IES

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	105	105	105	105	96	96	96	96	78	78	78	62	62	62	47	47	47	41
1	97	93	89	86	88	85	82	79	70	68	66	56	55	54	43	43	42	36
2	89	82	77	72	81	75	71	67	62	59	56	50	48	46	39	38	37	32
3	82	73	66	61	74	67	61	57	56	52	48	46	43	40	36	34	33	28
4	75	65	58	53	68	60	54	49	50	46	42	41	38	35	33	31	29	25
5	69	59	51	46	63	54	48	43	45	41	37	37	34	31	30	28	26	22
6	64	53	45	40	59	49	42	38	41	36	33	34	31	28	27	25	23	20
7	59	48	41	35	54	44	38	33	38	33	29	31	28	25	25	23	21	18
8	55	44	37	32	51	41	34	30	34	30	26	29	25	23	23	21	19	17
9	52	40	33	28	47	37	31	27	32	27	24	27	23	20	22	19	17	15
10	48	37	30	26	44	34	28	24	29	25	21	25	21	19	20	18	16	14

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.)