

IES Report

ZipTwo® | 707 | Diffuse with MicroBaffle | 80 CRI | SO

707-Z2-4-48-XX-XX-X-0-Z-SO-35-D4-X-WH-0

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	135	139	142	145
Total Lumens, 4' rail length (1219mm)	3513	3624	3698	3772
Lumens per foot (305mm)	878	906	925	943
Input Power (W), 4' rail length (1219mm)	26.1	26.1	26.1	26.1
Watts per foot (305mm)	6.6	6.6	6.6	6.6
CRI	85	85	85	85

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: L121800102



Report No: L121800102

Issue Date: 12/14/2018

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

Model Number: 707-Z2-48-SO-35-D4-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: 12/10/18

Date of Tests: 12/11/18 - 12/14/18

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

General Information

Manufacturer:	Vode Lighting
Model Number:	707-Z2-48-SO-35-D4-AL
Driver Model Number:	MEAN WELL HLG-40H-36A

Test Summary

Total Lumens:	3698.12
Efficacy:	141.46
Color Rendering Index	81.60
Correlated Color Temperature	3385.00
Input Voltage (VAC/60Hz):	120.05
Input Current (Amp):	0.2190
Input Power (W):	26.14
Input Power Factor:	0.9944
Current ATHD (%):	7.9%

Test Condition

Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	1:20
Total Operating Time (Hours):	2:55

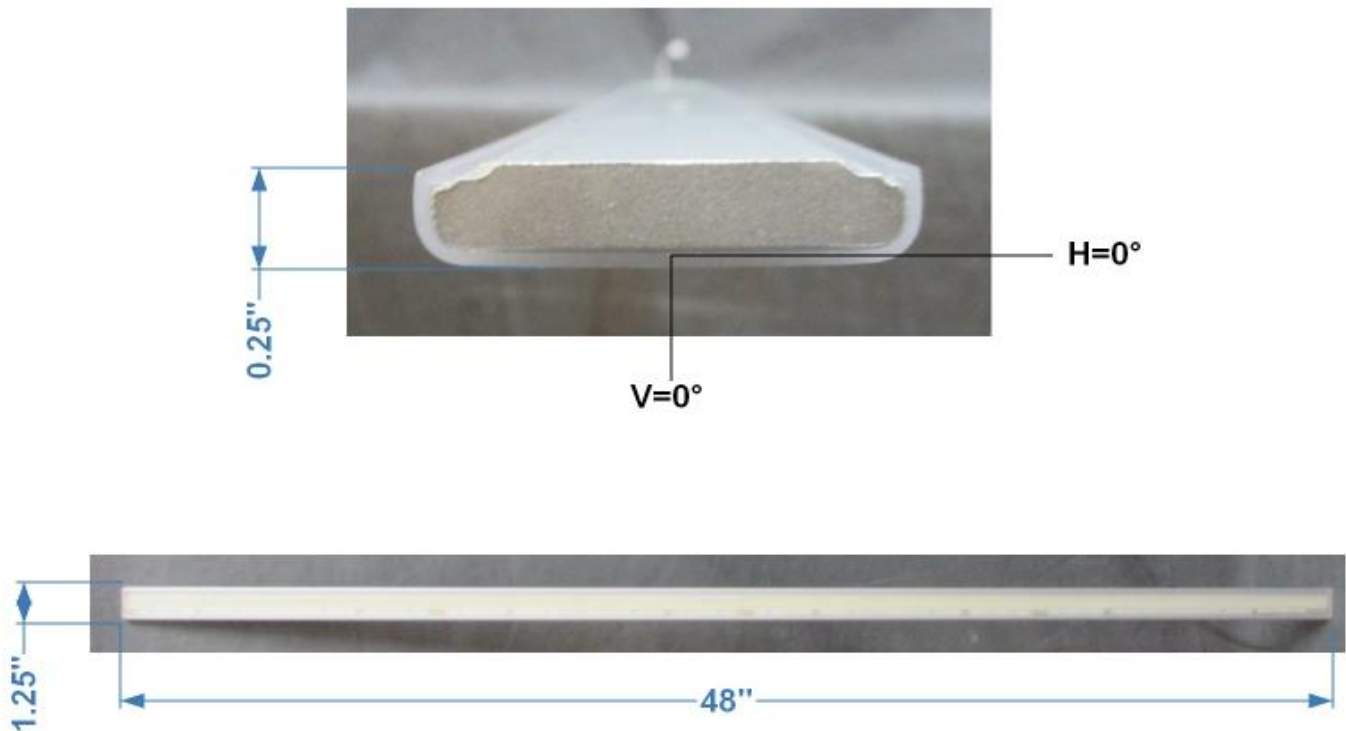
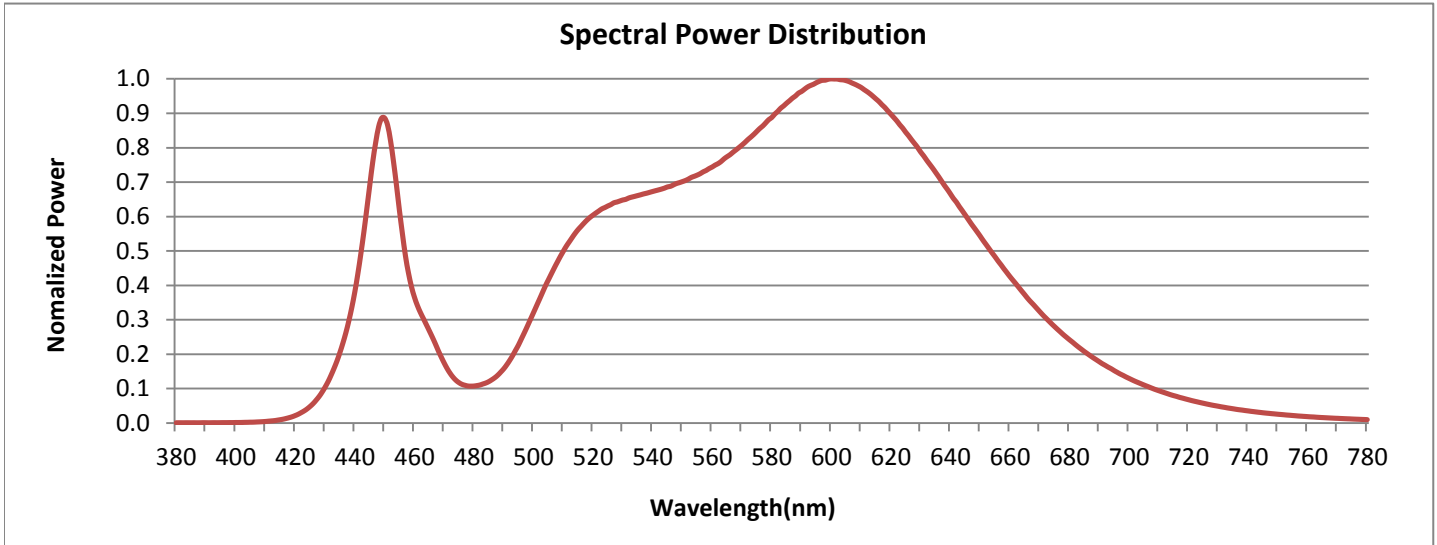


FIG. 1 LUMINAIRE

Colorimetry Test Results

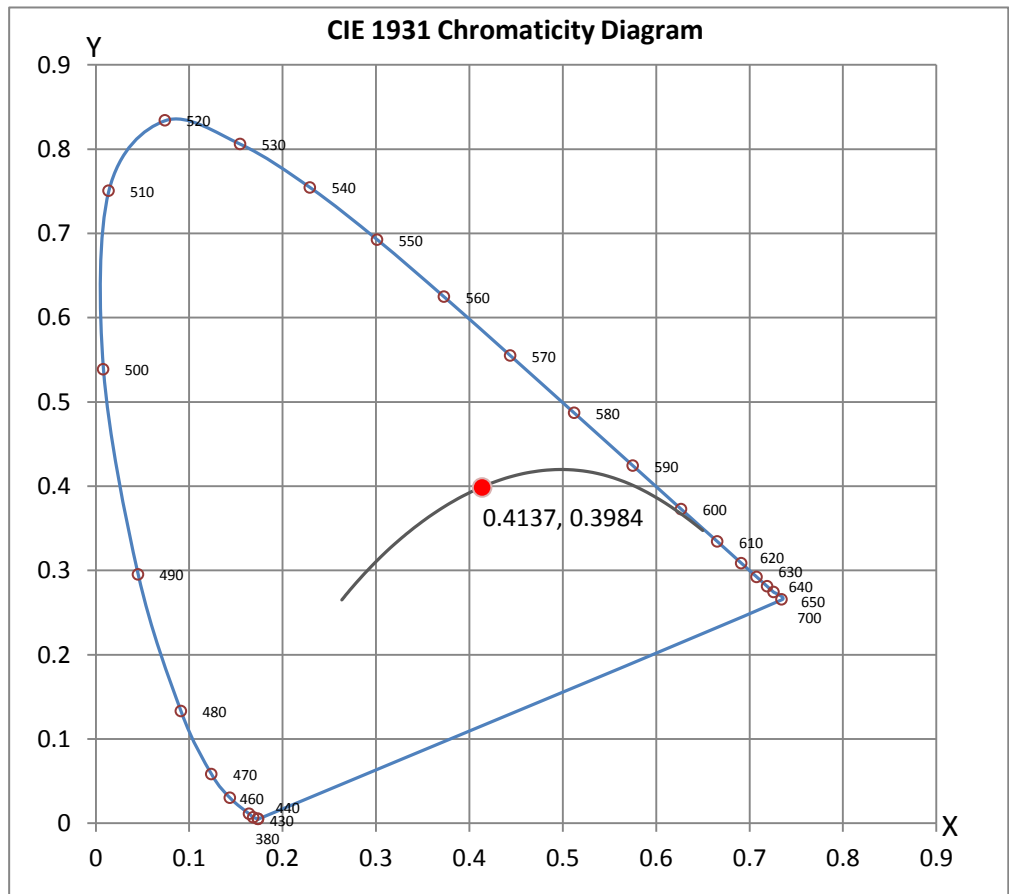


CRI & CCT

x	0.4137
y	0.3984
u'	0.2380
v'	0.5157
CRI	81.60
CCT	3385
Duv	0.00155

R Values

R1	80.52
R2	86.42
R3	92.11
R4	82.97
R5	80.16
R6	82.56
R7	85.48
R8	62.40
R9	5.67
R10	68.53
R11	83.11
R12	58.55
R13	81.58
R14	95.13
R15	73.24



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:



Joseph Shin
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
 www.lightlaboratory.com

Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121800102.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L121800102
 [TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
 [ISSUEDATE] 12/14/2018
 [MANUFAC] Vode Lighting
 [LUMCAT] 707-Z2-48-SO-35-D4-AL
 [LUMINAIRE] ZipTwo LED, 48", 3500K, 80 CRI, zipper board,
 [MORE] diffuse lens w/microbaffle, 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] 120.05VAC, 26.14W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3698
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	141
Total Luminaire Watts	26.14
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	1.22
Spacing Criterion (90-270)	1.10
Spacing Criterion (Diagonal)	1.24
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.10 ft
Luminous Width (90-270)	4.00 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	36005	31633	27033
55	31404	26389	21655
65	26591	21820	17621
75	22541	18386	14542
85	24677	19433	12956

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121800102.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	1627	1627	1627	1627	1627	1627	1627	1627	1627	1627
5	1619	1620	1620	1619	1619	1619	1619	1618	1618	1618
10	1596	1595	1595	1595	1594	1593	1592	1591	1590	1588
15	1554	1554	1553	1552	1550	1548	1546	1543	1540	1537
20	1495	1494	1493	1491	1488	1484	1480	1474	1469	1463
25	1417	1416	1414	1411	1406	1401	1394	1385	1376	1367
30	1321	1320	1318	1313	1307	1299	1289	1277	1265	1251
35	1209	1208	1204	1199	1191	1181	1168	1152	1136	1119
40	1083	1082	1077	1071	1062	1049	1034	1016	997	976
45	947	946	942	934	924	911	894	875	854	832
50	808	807	802	795	785	771	754	735	714	693
55	670	669	665	658	648	635	620	602	582	563
60	538	537	534	528	519	508	494	479	463	446
65	418	417	414	409	402	393	381	369	356	343
70	310	309	307	303	298	291	283	273	263	254
75	217	217	215	212	208	204	198	191	184	177
80	141	141	140	138	135	132	128	124	119	115
85	80	80	79	78	77	74	72	69	66	63
90	34	34	33	33	31	30	29	27	25	22
95	23	23	23	22	22	21	20	19	17	16
100	22	22	22	22	21	20	19	18	16	15
105	22	22	21	21	20	19	18	17	16	15
110	21	21	21	20	0	0	0	0	0	0
115	21	21	20	0	0	0	0	0	0	0
120	20	20	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0	0

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	1627	1627	1627	1627	1627	1627	1627	1627	1627
5	1618	1617	1617	1617	1617	1617	1617	1617	1617
10	1587	1586	1585	1584	1583	1582	1582	1581	1581
15	1534	1531	1528	1525	1522	1520	1519	1518	1518
20	1457	1451	1445	1440	1435	1432	1428	1427	1426
25	1357	1347	1338	1330	1322	1316	1311	1308	1308
30	1237	1223	1210	1197	1187	1178	1172	1168	1167
35	1101	1083	1066	1051	1038	1028	1020	1015	1014
40	955	935	916	899	885	873	865	860	858
45	810	789	769	752	737	726	717	712	711
50	671	651	632	616	603	592	584	579	578
55	544	526	509	495	483	474	467	463	462
60	430	415	401	390	380	373	367	364	363

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121800102.IES**

CANDELA TABULATION - (Cont.)

65	330	319	308	299	291	285	281	278	277
70	244	236	228	221	215	210	207	204	204
75	171	165	159	154	150	146	143	141	140
80	110	106	102	98	95	92	90	88	88
85	60	58	55	52	49	47	45	43	42
90	20	18	16	13	11	9	7	5	4
95	14	13	11	9	7	5	4	2	2
100	14	12	10	0	0	0	0	0	0
105	13	0	0	0	0	0	0	0	0
110	0	0	0	0	0	0	0	0	0
115	0	0	0	0	0	0	0	0	0
120	0	0	0	0	0	0	0	0	0
125	0	0	0	0	0	0	0	0	0
130	0	0	0	0	0	0	0	0	0
135	0	0	0	0	0	0	0	0	0
140	0	0	0	0	0	0	0	0	0
145	0	0	0	0	0	0	0	0	0
150	0	0	0	0	0	0	0	0	0
155	0	0	0	0	0	0	0	0	0
160	0	0	0	0	0	0	0	0	0
165	0	0	0	0	0	0	0	0	0
170	0	0	0	0	0	0	0	0	0
175	0	0	0	0	0	0	0	0	0
180	0	0	0	0	0	0	0	0	0

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121800102.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	585.96	N.A.	15.80
0-30	1212.94	N.A.	32.80
0-40	1909.3	N.A.	51.60
0-60	3059.17	N.A.	82.70
0-80	3596.6	N.A.	97.30
0-90	3667.81	N.A.	99.20
10-90	3514.31	N.A.	95.00
20-40	1323.35	N.A.	35.80
20-50	1965.33	N.A.	53.10
40-70	1495.29	N.A.	40.40
60-80	537.44	N.A.	14.50
70-80	192.01	N.A.	5.20
80-90	71.21	N.A.	1.90
90-110	27.08	N.A.	0.70
90-120	29.93	N.A.	0.80
90-130	30.31	N.A.	0.80
90-150	30.31	N.A.	0.80
90-180	30.31	N.A.	0.80
110-180	3.23	N.A.	0.10
0-180	3698.12	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	153.50
10-20	432.46
20-30	626.98
30-40	696.37
40-50	641.99
50-60	507.88
60-70	345.43
70-80	192.01
80-90	71.21
90-100	17.06
100-110	10.02
110-120	2.85
120-130	0.39
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

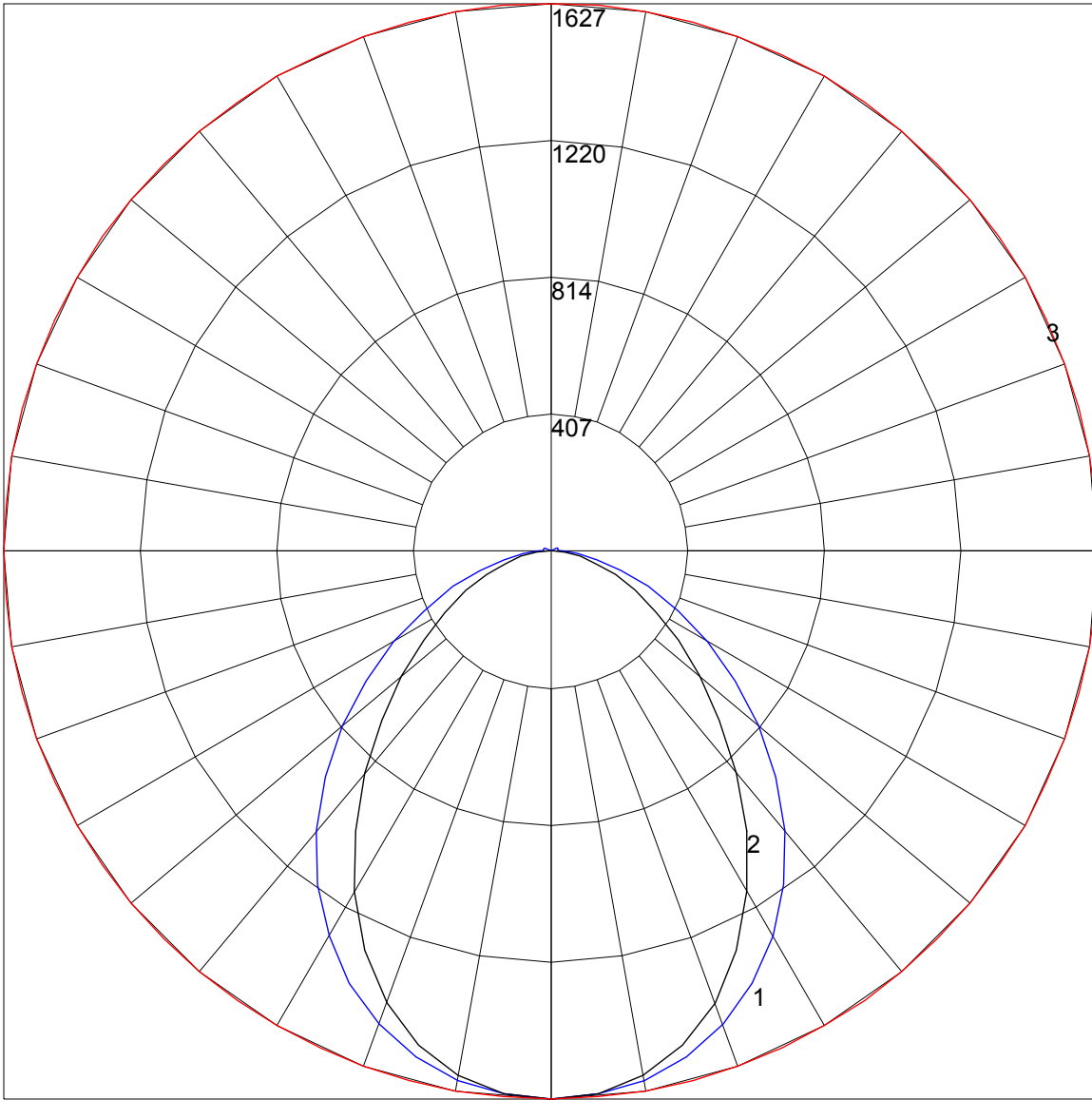
IES INDOOR REPORT
PHOTOMETRIC FILENAME : L121800102.IES

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	119	119	119	119	119	116	116	116	116	116	111	111	111	106	106	106	101	101	101	99
1	109	105	101	97		107	102	99	96		98	95	92	94	92	89	90	88	87	85
2	100	92	86	81		98	90	85	80		87	82	78	84	79	76	80	77	74	72
3	92	82	74	68		89	80	73	68		77	71	66	75	69	65	72	68	64	62
4	85	73	65	59		82	72	64	58		69	63	57	67	61	57	65	60	56	54
5	78	66	58	51		76	65	57	51		63	56	50	61	55	50	59	53	49	47
6	73	60	51	45		71	59	51	45		57	50	45	55	49	44	54	48	44	42
7	68	55	46	40		66	54	46	40		52	45	40	51	44	40	49	44	39	37
8	63	50	42	36		61	49	42	36		48	41	36	47	40	36	45	40	35	34
9	59	46	38	33		58	46	38	33		44	37	33	43	37	32	42	36	32	30
10	55	43	35	30		54	42	35	30		41	34	30	40	34	30	39	34	29	28

POLAR GRAPH



Maximum Candela = 1627 Located At Horizontal Angle = 0, Vertical Angle = 0

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 (0) (Through Max. Cd.)