

IES Report

DoubleBox™ | 107 | 120° Batwing, up | 120° FlyWing™, down | 90 CRI | SO

107-DB-XX-4-48-XX-XX-XX-XX-X-X-Z-SO-359-G1G2-X-XX-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	102	105	107	110
Total Lumens, 4' rail length (1219mm)	4903	5058	5161	5264
Lumens per foot (305mm)	1226	1265	1290	1316
Lumens per foot UP (305mm)	613	632	645	658
Lumens per foot DOWN (305mm)	613	632	645	658
Input Power (W), 4' rail length (1219mm)	48.25	48.25	48.25	48.25
Watts per foot (305mm)	12.1	12.1	12.1	12.1
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: L011800106



Report No: L011800106

Issue Date: 1/12/2018

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

Model Number: 107-DB-48-Z-SO-359-G1G2

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.

Testing Condition: Fixture is tested with no special conditions.

Sample Arrival Date: 1/5/18

Date of Tests: 1/11/18 - 1/12/18

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

*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:	107-DB-48-Z-SO-359-G1G2
Driver Model Number:	MEAN WELL HLG-40H-36A (2 DRIVERS)
Total Lumens:	5161.23
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.41
Input Power (W):	48.25
Input Power Factor:	0.99
Current ATHD @ 120V(%):	10%
Current ATHD @ 277V(%):	N/A
Efficacy:	107
Color Rendering Index (CRI):	96
Correlated Color Temperature (K):	3331
Chromaticity Coordinate x:	0.4142
Chromaticity Coordinate y:	0.3931
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	2:10

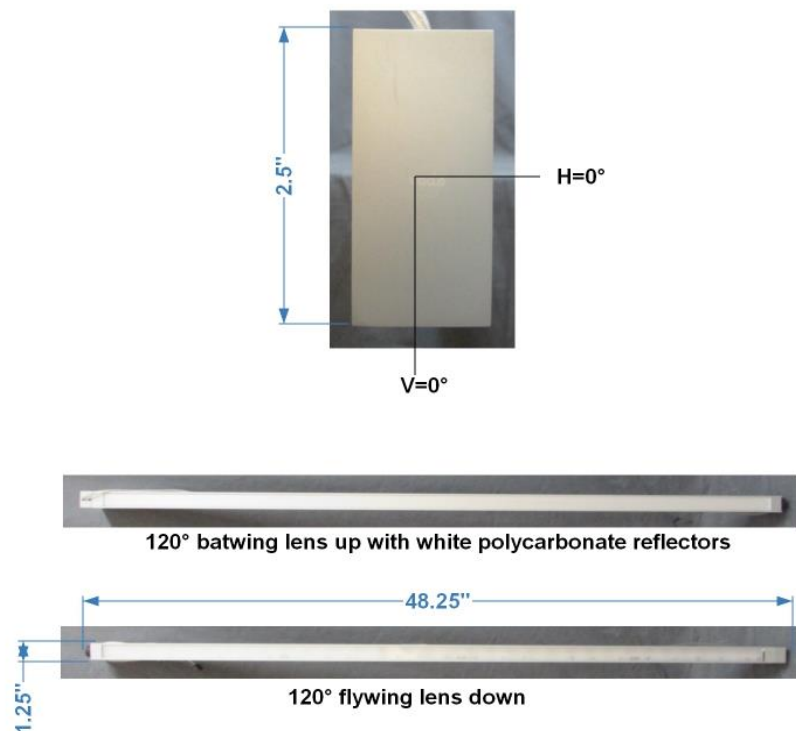
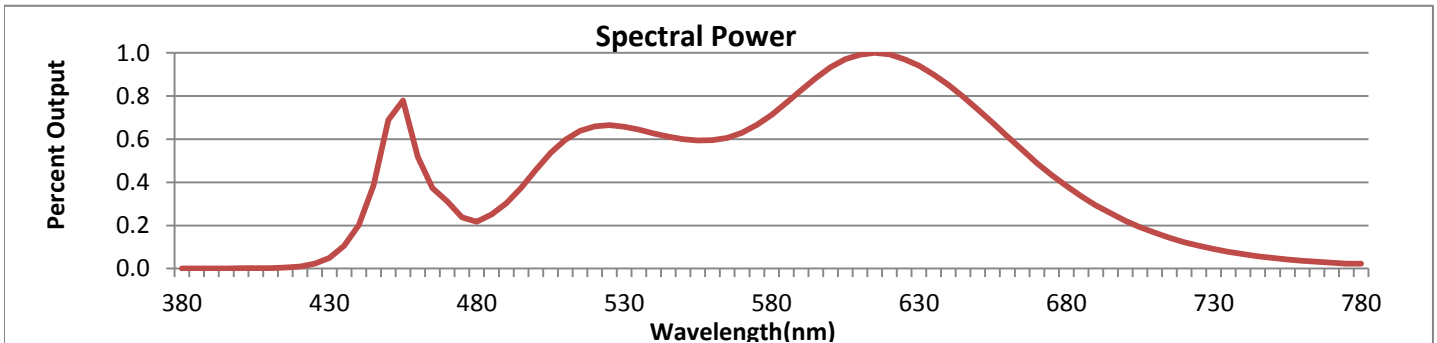


FIG. 1 LUMINAIRE

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



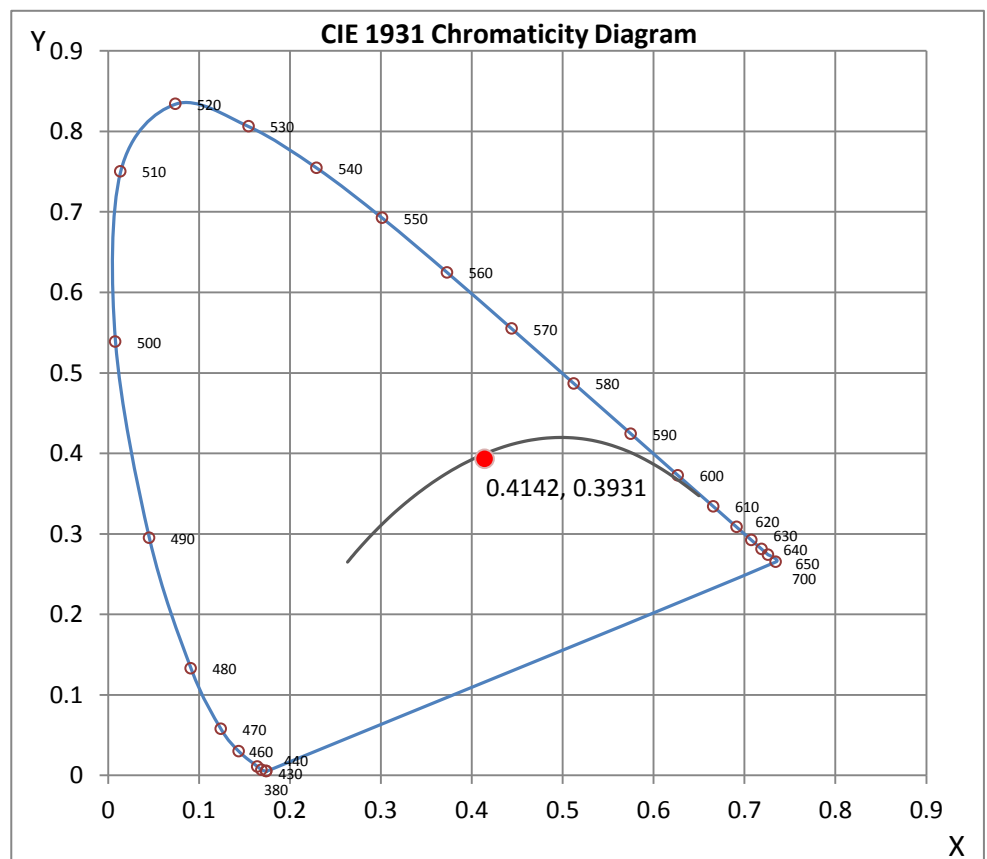
Wavelength	W/m ² nm	440	0.2029	510	0.5976	580	0.7132	650	0.7383	720	0.1229
380	0.0008	450	0.6884	520	0.6593	590	0.8278	660	0.6137	730	0.0908
390	0.0009	460	0.5179	530	0.6579	600	0.9335	670	0.4892	740	0.0668
400	0.0012	470	0.3118	540	0.6273	610	0.9916	680	0.3830	750	0.0491
410	0.0023	480	0.2178	550	0.6005	620	0.9927	690	0.2935	760	0.0363
420	0.0098	490	0.3034	560	0.5952	630	0.9413	700	0.2221	770	0.0268
430	0.0501	500	0.4577	570	0.6300	640	0.8525	710	0.1662	780	0.0231

CRI & CCT

x	0.4142
y	0.3931
u'	0.2405
v'	0.5136
CRI	95.70
CCT	3331
Duv	-0.00081

R Values

R1	97.33
R2	98.73
R3	99.01
R4	95.37
R5	97.38
R6	94.13
R7	94.41
R8	88.95
R9	73.75
R10	97.86
R11	88.23
R12	83.08
R13	96.95
R14	98.50



*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 : L011800106.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
 [TEST] L011800106
 [TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
 [ISSUEDATE] 1/12/2018
 [MANUFAC] Vode Lighting
 [LUMCAT] 107-DB-48-Z-SO-359-G1G2
 [LUMINAIRE] DoubleBox LED, 48", 3500K, 90 CRI, zipper board,
 [MORE] 120° batwing lens up with white polycarbonate reflectors/120° flywing lens down, standard output
 [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] 120VAC, 48.25W
 [TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5161
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	107
Total Luminaire Watts	48.25
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)	0.08 ft
Luminous Width (90-270)	3.77 ft
Luminous Height	0.21 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	11385	11987	20362
55	8473	9346	19136
65	5241	6040	17592
75	2283	2855	13978
85	315	555	5522

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L011800106.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	721.01	721.01	721.01	721.01	721.01	721.01	721.01	721.01	721.01	721.01
5	733.09	732.60	732.09	731.29	730.53	729.70	728.80	727.85	726.84	725.80
10	767.05	765.99	764.13	761.92	759.22	756.07	752.46	746.91	741.14	735.13
15	814.51	812.89	809.61	805.54	799.91	791.18	781.64	771.38	760.48	747.56
20	861.80	859.56	855.11	848.82	838.36	826.69	813.27	796.49	778.96	761.07
25	895.92	892.96	888.62	879.36	868.14	853.53	836.20	818.00	793.25	767.56
30	911.78	908.79	903.74	894.32	881.98	866.33	847.92	823.84	796.39	765.81
35	904.10	901.39	896.02	888.28	875.91	861.44	844.00	816.09	787.45	753.37
40	872.22	870.09	865.28	857.66	847.93	836.17	815.89	791.97	763.88	726.92
45	818.45	817.05	813.24	806.67	798.15	788.28	769.87	751.31	719.92	688.30
50	743.43	741.71	738.62	734.14	728.65	719.37	706.28	687.61	661.61	628.07
55	647.27	645.81	644.31	642.18	639.09	628.57	621.64	603.30	583.79	557.37
60	534.80	533.95	532.28	525.40	519.07	511.96	506.07	500.31	484.31	463.14
65	411.82	412.35	403.00	394.39	392.33	390.72	388.76	382.73	375.47	362.63
70	287.27	283.01	273.37	273.31	277.45	278.29	278.01	275.05	266.85	259.11
75	178.94	168.38	170.78	172.43	172.49	173.77	174.08	172.10	171.83	167.32
80	91.88	85.54	87.61	88.11	88.62	89.35	90.16	90.62	90.73	91.01
85	23.87	26.44	25.62	25.98	26.91	27.71	27.67	29.86	29.84	30.76
90	1.45	1.50	1.54	1.54	1.58	1.54	1.58	1.54	1.54	1.58
95	23.87	26.44	25.62	25.98	26.91	27.71	27.67	29.86	29.84	30.76
100	91.88	85.54	87.61	88.11	88.62	89.35	90.16	90.62	90.73	91.01
105	178.94	168.38	170.78	172.43	172.49	173.77	174.08	172.10	171.83	167.32
110	287.27	283.01	273.37	273.31	277.45	278.29	278.01	275.05	266.85	259.11
115	411.82	412.35	403.00	394.40	392.33	390.72	388.76	382.73	375.47	362.63
120	534.80	533.95	532.28	525.40	519.07	511.96	506.07	500.31	484.31	463.14
125	647.27	645.81	644.31	642.18	639.09	628.58	621.64	603.30	583.79	557.37
130	743.43	741.71	738.62	734.14	728.65	719.37	706.28	687.61	661.61	628.07
135	818.45	817.05	813.24	806.67	798.15	788.28	769.87	751.31	719.92	688.30
140	872.22	870.09	865.28	857.66	847.93	836.17	815.89	791.97	763.88	726.92
145	904.10	901.39	896.02	888.28	875.91	861.44	844.00	816.09	787.45	753.37
150	911.78	908.79	903.74	894.32	881.98	866.33	847.92	823.84	796.39	765.81
155	895.92	892.96	888.62	879.36	868.14	853.53	836.20	818.00	793.25	767.56
160	861.80	859.56	855.11	848.82	838.36	826.69	813.27	796.49	778.96	761.07
165	814.51	812.89	809.61	805.54	799.91	791.18	781.64	771.38	760.48	747.56
170	767.05	765.99	764.13	761.92	759.22	756.07	752.46	746.91	741.14	735.13
175	733.09	732.60	732.09	731.29	730.53	729.70	728.80	727.85	726.84	725.80
180	721.00	721.00	721.00	721.00	721.00	721.00	721.00	721.00	721.00	721.00

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	721.01	721.01	721.01	721.01	721.01	721.01	721.01	721.01	721.01
5	724.72	723.61	722.49	721.36	720.23	719.11	717.96	716.90	715.86
10	728.94	722.61	716.30	713.25	710.37	707.67	705.14	702.76	700.71
15	735.06	724.09	713.22	702.54	691.87	686.95	682.59	678.59	675.38
20	741.82	721.59	702.03	686.71	672.03	657.83	651.76	646.49	642.62
25	741.81	714.98	688.75	663.56	644.41	627.48	614.94	608.36	603.72
30	733.31	700.09	667.36	637.72	610.39	591.01	573.45	566.39	561.83
35	715.18	677.60	638.89	603.60	573.16	549.28	531.36	522.10	516.90
40	687.49	643.89	601.52	561.92	529.93	503.88	486.82	476.32	471.11
45	643.70	599.91	555.31	515.41	482.14	457.16	440.96	430.86	426.31
50	588.91	544.26	500.95	462.20	429.82	408.12	392.94	383.50	379.93
55	517.27	476.69	436.52	400.23	371.14	352.59	341.38	334.45	332.31
60	432.45	395.22	362.47	336.29	315.60	301.71	292.97	287.52	286.02

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L011800106.IES**

CANDELA TABULATION - (Cont.)

65	339.93	314.52	291.87	271.21	255.19	244.40	238.33	234.78	233.42
70	246.19	231.62	215.56	201.52	191.81	185.08	181.94	179.57	178.99
75	160.54	152.22	142.32	132.78	127.64	125.27	122.21	120.92	122.56
80	87.64	82.18	76.82	73.02	71.24	74.05	73.46	72.46	71.95
85	29.27	27.28	25.92	24.77	23.27	22.69	21.41	21.46	22.09
90	1.50	1.50	1.54	1.50	1.45	1.41	1.54	1.50	1.41
95	29.27	27.28	25.92	24.77	23.27	22.69	21.41	21.46	22.09
100	87.64	82.18	76.82	73.02	71.24	74.05	73.46	72.46	71.95
105	160.54	152.22	142.32	132.78	127.64	125.27	122.21	120.92	122.56
110	246.19	231.62	215.56	201.52	191.81	185.08	181.94	179.57	178.99
115	339.93	314.52	291.87	271.21	255.19	244.40	238.33	234.78	233.42
120	432.45	395.22	362.47	336.29	315.60	301.71	292.97	287.52	286.02
125	517.27	476.69	436.52	400.23	371.14	352.59	341.38	334.45	332.31
130	588.91	544.26	500.95	462.20	429.82	408.12	392.94	383.50	379.93
135	643.71	599.91	555.31	515.41	482.14	457.16	440.96	430.86	426.31
140	687.49	643.89	601.52	561.92	529.93	503.88	486.82	476.32	471.11
145	715.18	677.60	638.89	603.60	573.16	549.28	531.36	522.10	516.90
150	733.31	700.09	667.36	637.72	610.39	591.01	573.45	566.39	561.83
155	741.81	714.98	688.75	663.56	644.41	627.48	614.94	608.36	603.72
160	741.82	721.59	702.03	686.71	672.03	657.83	651.76	646.49	642.62
165	735.06	724.09	713.22	702.54	691.87	686.95	682.59	678.59	675.38
170	728.94	722.61	716.30	713.25	710.37	707.67	705.14	702.76	700.71
175	724.72	723.61	722.49	721.36	720.23	719.11	717.96	716.90	715.86
180	721.00	721.00	721.00	721.00	721.00	721.00	721.00	721.00	721.00

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L011800106.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	281.25	N.A.	5.40
0-30	631.03	N.A.	12.20
0-40	1087.14	N.A.	21.10
0-60	2045.74	N.A.	39.60
0-80	2543.4	N.A.	49.30
0-90	2580.62	N.A.	50.00
10-90	2511.1	N.A.	48.70
20-40	805.89	N.A.	15.60
20-50	1305.79	N.A.	25.30
40-70	1289.53	N.A.	25.00
60-80	497.66	N.A.	9.60
70-80	166.74	N.A.	3.20
80-90	37.22	N.A.	0.70
90-110	203.95	N.A.	4.00
90-120	534.88	N.A.	10.40
90-130	993.59	N.A.	19.30
90-150	1949.59	N.A.	37.80
90-180	2580.62	N.A.	50.00
110-180	2376.66	N.A.	46.00
0-180	5161.23	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

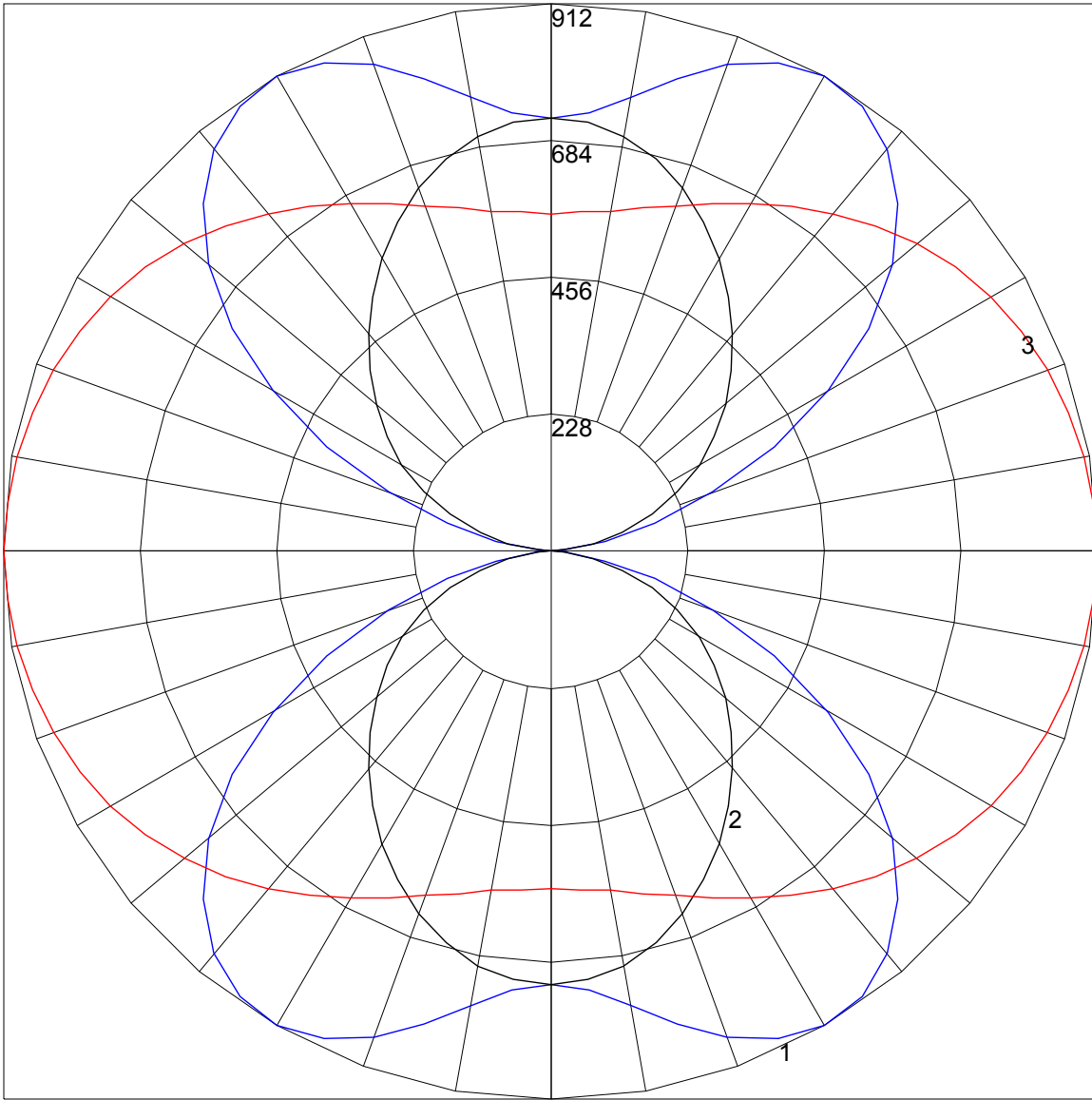
Zone	Lumens
0-10	69.52
10-20	211.73
20-30	349.78
30-40	456.11
40-50	499.89
50-60	458.71
60-70	330.92
70-80	166.74
80-90	37.22
90-100	37.22
100-110	166.74
110-120	330.92
120-130	458.71
130-140	499.89
140-150	456.11
150-160	349.78
160-170	211.73
170-180	69.52

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	107	107	107	107	99	99	99	99	83	83	83	69	69	69	56	56	56	50
1	98	93	89	86	90	86	83	80	73	70	68	61	59	57	49	48	47	42
2	89	81	75	70	82	75	70	65	64	60	56	53	50	47	43	41	39	35
3	81	71	64	58	74	66	59	54	56	51	47	47	43	40	38	35	33	29
4	74	63	55	48	68	58	51	45	49	44	39	41	37	34	34	31	28	24
5	67	56	47	41	62	52	44	39	44	38	34	37	32	29	30	27	24	21
6	62	50	41	35	57	46	39	33	39	34	29	33	29	25	27	24	21	18
7	57	45	37	31	52	41	34	29	35	30	25	30	25	22	25	21	19	16
8	53	40	32	27	49	38	30	26	32	27	22	27	23	19	22	19	16	14
9	49	37	29	24	45	34	27	23	29	24	20	25	20	17	21	17	15	13
10	46	34	26	21	42	31	25	20	27	22	18	23	19	16	19	16	13	11

POLAR GRAPH



Maximum Candela = 911.78 Located At Horizontal Angle = 0, Vertical Angle = 30
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 (30) (Through Max. Cd.)