

IES Report

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

107-DB-XX-4-48-XX-XX-XX-XX-X-X-Z-SO-359-G1BB-X-XX-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	69	71	72	74
Total Lumens, 4' rail length (1219mm)	3290	3394	3463	3532
Lumens per foot (305mm)	822	848	866	883
Lumens per foot UP (305mm)	642	662	675	689
Lumens per foot DOWN (305mm)	181	187	191	194
Input Power (W), 4' rail length (1219mm)	48.17	48.17	48.17	48.17
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: L011800102



Report No: L011800102

Issue Date: 1/9/2018

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

Model Number: 107-DB-48-Z-SO-359-G1BB

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: 1/6/18 - 1/9/18

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-G1BB
Driver Model Number:	MEAN WELL HLG-40H-36A (2 DRIVERS)
Total Lumens:	3462.93
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.4
Input Power (W):	48.17
Input Power Factor:	0.99
Current ATHD @ 120V(%):	10%
Current ATHD @ 277V(%):	N/A
Efficacy:	72
Color Rendering Index (CRI):	96
Correlated Color Temperature (K):	3321
Chromaticity Coordinate x:	0.4148
Chromaticity Coordinate y:	0.3932
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:45
Total Operating Time (Hours):	2:20

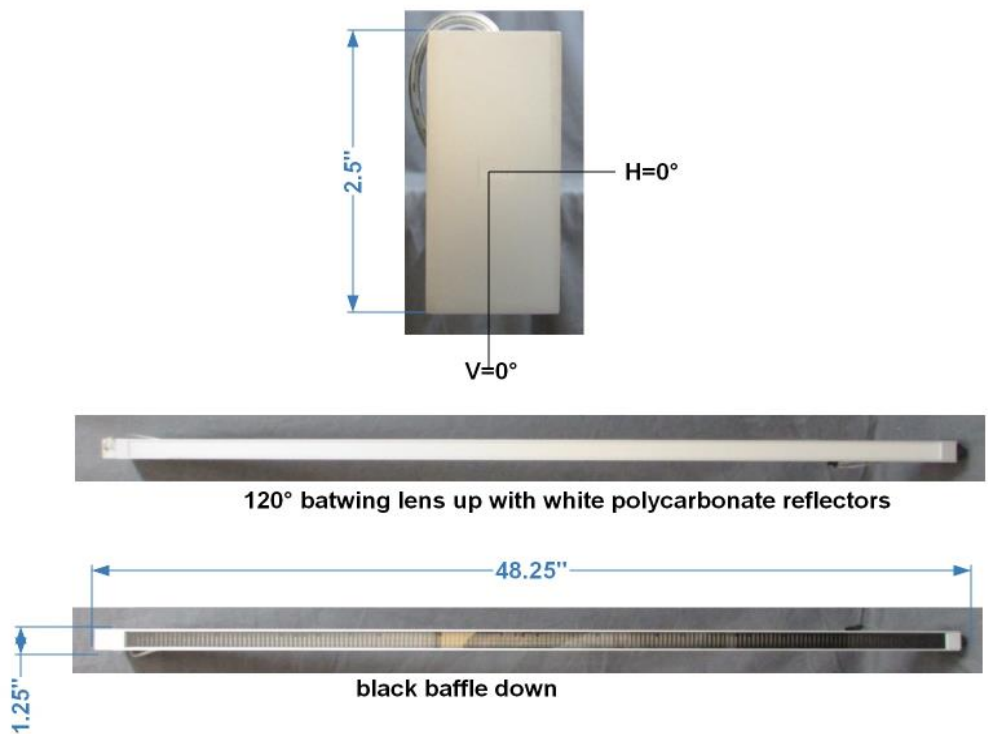
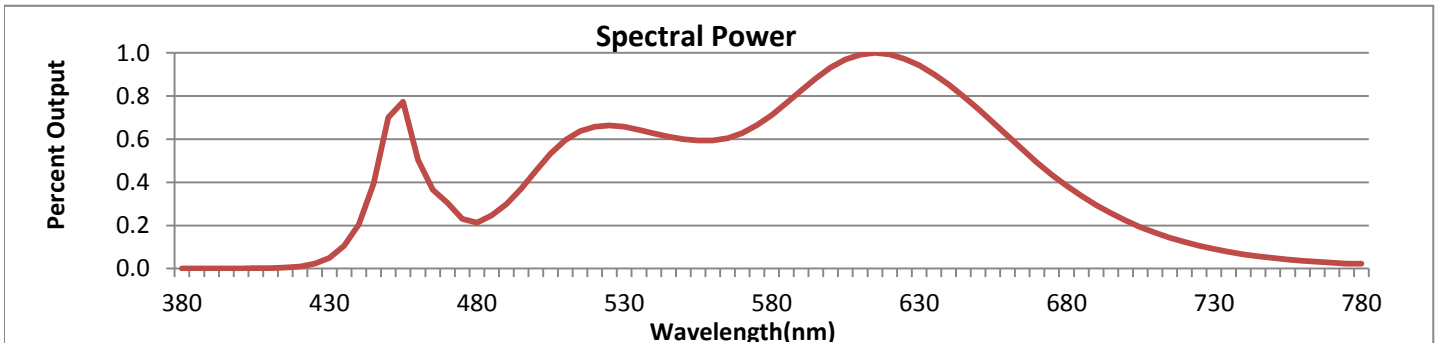


FIG. 1 LUMINAIRE

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



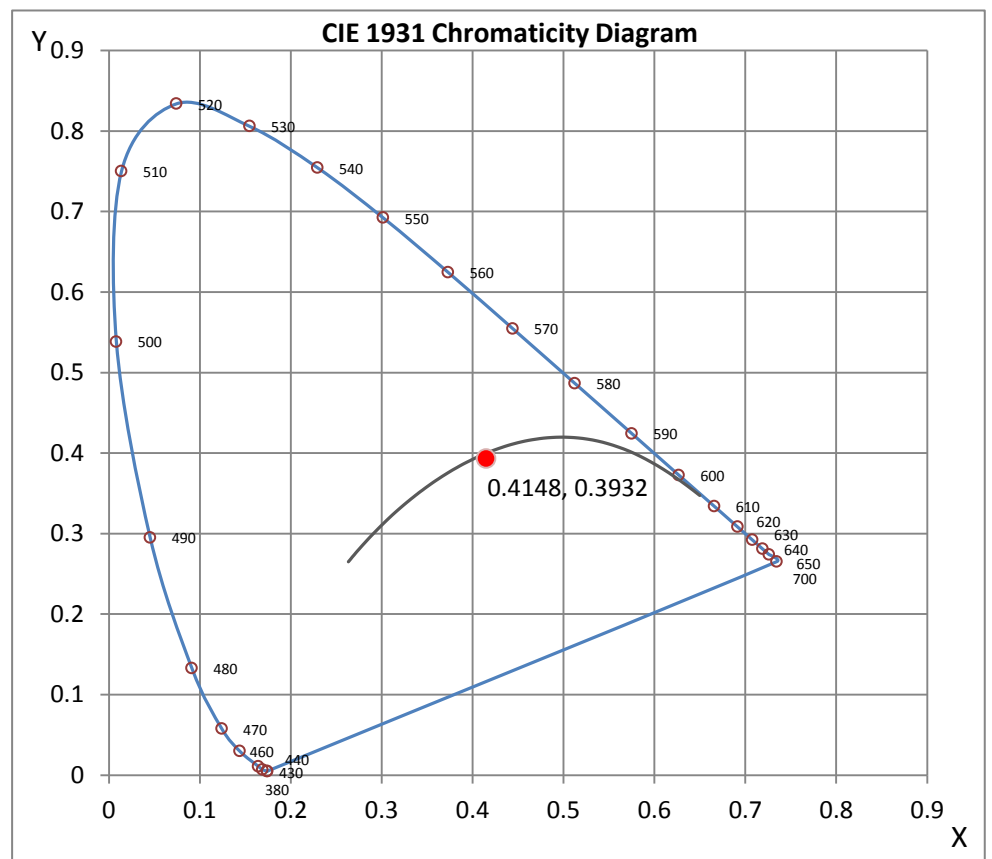
Wavelength	W/m ² nm	440	0.2046	510	0.5949	580	0.7113	650	0.7416	720	0.1229
380	0.0008	450	0.7005	520	0.6584	590	0.8254	660	0.6167	730	0.0906
390	0.0009	460	0.5036	530	0.6579	600	0.9328	670	0.4915	740	0.0665
400	0.0011	470	0.3042	540	0.6269	610	0.9919	680	0.3845	750	0.0491
410	0.0023	480	0.2126	550	0.5995	620	0.9927	690	0.2946	760	0.0363
420	0.0096	490	0.2984	560	0.5945	630	0.9427	700	0.2224	770	0.0267
430	0.0502	500	0.4532	570	0.6285	640	0.8542	710	0.1660	780	0.0231

CRI & CCT

x	0.4148
y	0.3932
u'	0.2409
v'	0.5137
CRI	95.70
CCT	3321
Duv	-0.00088

R Values

R1	97.36
R2	98.82
R3	98.90
R4	95.16
R5	97.42
R6	94.28
R7	94.54
R8	89.09
R9	73.88
R10	98.15
R11	88.03
R12	83.21
R13	96.99
R14	98.38



*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*



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Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L011800102.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L011800102
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUE DATE] 1/9/2018
[MANUFAC] Vode Lighting
[LUMCAT] 107-DB-48-Z-SO-359-G1BB
[LUMINAIRE] DoubleBox LED, 48", 3500K, 90 CRI, zipper board,
[MORE] 120° batwing lens up with white polycarbonate reflectors/black baffle 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, 48.17W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3463
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	72
Total Luminaire Watts	48.17
Ballast Factor	1.00
CIE Type	Semi-Indirect
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	312	889	1035
55	242	221	545
65	159	108	307
75	95	77	237
85	35	44	290

IES INDOOR REPORT
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CANDELA TABULATION

	0	5	10	15	20	25	30	35	40	45
0	965.05	965.05	965.05	965.05	965.05	965.05	965.05	965.05	965.05	965.05
5	961.40	949.97	938.62	927.58	916.74	906.24	896.16	886.57	877.54	869.14
10	949.69	926.74	904.31	882.33	861.08	840.70	822.02	807.64	794.64	782.66
15	931.17	897.19	864.18	831.91	802.04	778.97	757.32	737.28	718.98	693.09
20	905.02	861.54	819.56	780.01	747.46	716.83	684.48	639.76	598.17	560.10
25	870.47	817.18	765.64	724.51	686.64	637.19	579.57	524.19	491.16	460.97
30	829.04	768.29	711.69	663.85	607.21	539.21	482.99	438.66	395.70	342.21
35	766.60	697.65	636.97	580.93	497.24	432.47	381.71	324.19	264.70	220.71
40	346.68	320.38	304.17	295.82	287.35	290.93	248.37	199.39	172.47	133.46
45	22.42	34.49	58.22	74.89	73.84	67.36	87.00	80.96	70.88	51.07
50	19.93	19.59	19.01	18.32	17.41	20.44	19.01	21.68	22.82	23.17
55	18.52	17.91	16.79	15.36	13.85	12.85	11.79	12.05	12.55	13.17
60	17.02	16.23	14.72	12.97	11.50	10.20	9.41	8.76	8.62	8.63
65	12.46	12.26	11.55	10.42	9.49	8.66	7.96	7.33	6.81	6.46
70	9.80	9.39	9.02	8.63	8.04	7.45	6.87	6.30	5.78	5.34
75	7.47	7.13	7.41	7.13	6.76	6.25	5.76	5.31	4.88	4.50
80	5.98	5.88	5.85	5.66	5.35	5.01	4.64	4.28	3.93	3.65
85	2.66	3.14	3.19	3.11	3.01	2.94	2.79	2.75	2.58	2.43
90	0.93	0.96	0.96	0.96	1.00	0.96	0.96	0.96	0.91	0.91
95	35.21	44.02	43.54	44.95	46.53	47.64	51.39	51.27	50.07	50.94
100	146.73	135.84	138.28	138.84	139.13	138.73	138.11	137.23	132.84	128.42
105	255.26	241.13	241.53	242.41	241.62	240.61	239.07	235.87	230.32	219.88
110	370.10	365.21	352.84	350.17	351.96	348.37	343.53	343.33	329.89	315.24
115	489.09	489.44	480.61	471.19	466.43	464.77	459.97	451.43	439.27	416.94
120	604.59	604.13	602.84	596.82	587.98	580.09	571.84	561.83	540.41	510.71
125	711.54	710.00	708.44	705.04	700.59	689.59	680.54	657.02	632.39	597.95
130	803.46	801.71	798.23	792.34	785.47	774.47	757.76	734.60	702.91	660.58
135	876.12	874.55	869.88	862.42	852.14	839.84	817.26	793.64	754.33	713.48
140	927.94	925.53	919.43	910.13	898.15	883.56	858.16	827.32	790.64	742.12
145	956.58	953.41	946.15	935.27	919.39	900.61	877.20	840.00	801.42	756.51
150	954.51	950.71	943.40	929.61	912.12	890.62	865.17	831.89	794.04	753.35
155	915.98	912.29	905.98	892.62	876.03	855.15	830.75	804.69	771.89	738.29
160	850.79	848.22	841.87	832.80	818.18	801.54	782.54	759.96	736.19	713.93
165	770.91	769.14	764.85	759.41	751.91	740.79	728.53	715.26	701.11	685.16
170	699.25	698.35	696.37	693.95	690.89	687.23	682.99	676.79	670.25	663.38
175	654.58	654.25	653.89	653.16	652.49	651.73	650.89	649.97	648.98	647.92
180	640.00	640.00	640.00	640.00	640.00	640.00	640.00	640.00	640.00	640.00

Vert. Angles **Horizontal Angles**

	50	55	60	65	70	75	80	85	90
0	965.05	965.05	965.05	965.05	965.05	965.05	965.05	965.05	965.05
5	861.43	854.47	848.31	843.00	838.59	835.10	831.52	830.79	830.53
10	771.80	762.12	753.67	745.31	738.36	732.89	728.94	726.15	725.66
15	666.36	641.13	618.63	599.04	582.52	569.70	560.62	554.32	553.77
20	532.16	512.61	495.20	477.84	463.94	453.45	446.43	441.92	442.00
25	433.84	398.21	363.03	333.02	307.32	287.28	272.71	261.75	259.74
30	290.92	248.26	225.68	206.52	190.80	178.11	169.10	160.19	157.02
35	187.86	158.78	130.82	105.72	83.74	66.40	54.15	46.50	43.68
40	94.85	59.05	45.45	41.15	37.28	34.36	32.56	31.50	31.14
45	40.28	34.30	31.04	28.46	26.21	24.20	22.74	21.88	21.67
50	23.85	22.47	20.93	19.49	18.00	16.53	15.43	14.73	14.45
55	14.05	13.93	13.67	12.98	12.03	11.09	10.31	9.77	9.47
60	8.81	8.78	8.75	8.50	7.99	7.40	6.87	6.44	6.23

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CANDELA TABULATION - (Cont.)

65	6.25	6.04	5.98	5.78	5.42	5.03	4.69	4.31	4.07
70	4.95	4.66	4.46	4.22	3.91	3.65	3.36	3.03	2.91
75	4.11	3.77	3.50	3.24	2.95	2.69	2.43	2.20	2.08
80	3.31	2.99	2.77	2.52	2.26	1.99	1.84	1.66	1.50
85	2.31	2.19	2.05	1.92	1.69	1.51	1.29	1.21	1.16
90	0.91	0.87	0.75	0.75	0.75	0.75	0.58	0.58	0.58
95	46.60	41.37	36.78	32.85	28.71	26.45	25.54	25.15	24.75
100	119.80	107.50	96.24	87.82	81.73	78.80	78.61	78.28	76.64
105	204.33	184.19	163.54	145.99	135.94	130.53	127.55	126.82	127.55
110	294.47	266.16	237.64	214.04	198.30	190.27	186.87	183.79	183.59
115	385.39	343.37	309.51	281.22	260.21	248.23	242.38	239.03	238.07
120	473.82	427.39	379.02	343.54	319.06	303.90	295.67	291.99	292.37
125	547.56	494.42	443.13	399.96	369.73	350.22	339.77	335.88	334.64
130	611.53	553.79	500.35	455.06	420.93	400.36	387.79	381.40	380.06
135	656.15	600.23	546.06	501.95	467.15	443.31	430.21	422.97	420.50
140	690.48	635.14	584.34	539.93	507.26	482.00	468.18	460.69	458.20
145	706.80	658.62	612.50	572.80	542.01	519.45	504.13	496.74	492.91
150	711.72	670.19	630.73	598.82	569.90	552.29	536.49	530.63	526.62
155	704.77	672.49	642.79	614.43	595.26	578.73	566.80	561.22	557.09
160	690.94	667.13	644.28	628.61	613.60	599.03	593.60	588.88	585.16
165	670.58	658.77	647.04	635.43	623.75	619.03	614.81	610.83	607.41
170	656.24	648.88	641.49	638.34	635.32	632.42	629.65	627.00	624.60
175	646.82	645.66	644.47	643.25	642.02	640.77	639.49	638.27	637.06
180	640.00	640.00	640.00	640.00	640.00	640.00	640.00	640.00	640.00

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	278.89	N.A.	8.10
0-30	506.99	N.A.	14.60
0-40	683.35	N.A.	19.70
0-60	746.97	N.A.	21.60
0-80	759.52	N.A.	21.90
0-90	762.04	N.A.	22.00
10-90	679.93	N.A.	19.60
20-40	404.46	N.A.	11.70
20-50	455.65	N.A.	13.20
40-70	71.14	N.A.	2.10
60-80	12.55	N.A.	0.40
70-80	5.02	N.A.	0.10
80-90	2.52	N.A.	0.10
90-110	263.00	N.A.	7.60
90-120	637.26	N.A.	18.40
90-130	1126.21	N.A.	32.50
90-150	2102.98	N.A.	60.70
90-180	2700.89	N.A.	78.00
110-180	2437.89	N.A.	70.40
0-180	3462.93	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	82.11
10-20	196.78
20-30	228.10
30-40	176.36
40-50	51.19
50-60	12.43
60-70	7.52
70-80	5.02
80-90	2.52
90-100	53.38
100-110	209.62
110-120	374.26
120-130	488.95
130-140	516.73
140-150	460.04
150-160	339.84
160-170	195.81
170-180	62.25

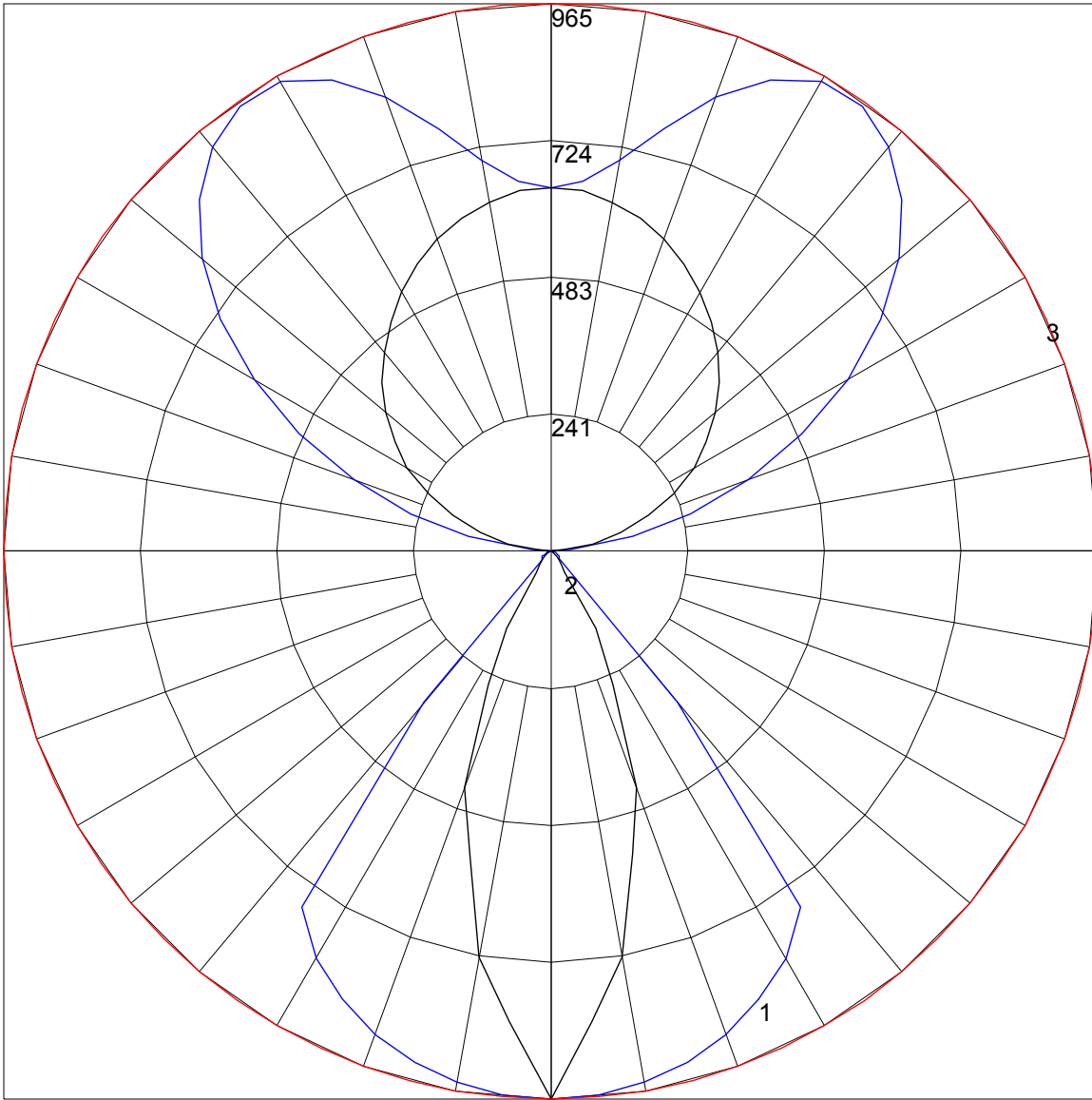
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	100	100	100	100	89	89	89	89	68	68	68	48	48	48	30	30	30	22
1	92	89	85	82	82	79	76	74	61	59	57	44	43	42	28	28	27	20
2	85	79	73	69	75	70	66	62	54	52	49	40	38	37	26	25	25	19
3	78	70	64	59	69	63	58	53	49	46	43	36	34	32	24	23	22	17
4	72	63	56	51	64	56	51	46	44	40	37	33	31	29	23	21	21	16
5	67	57	49	44	59	51	45	41	40	36	33	30	28	26	21	20	19	15
6	62	51	44	39	55	46	40	36	37	33	30	28	25	23	20	18	17	14
7	57	47	40	35	51	42	36	32	34	30	26	26	23	21	18	17	16	13
8	53	43	36	31	48	39	33	29	31	27	24	24	21	19	17	16	15	12
9	50	39	32	28	45	36	30	26	29	25	22	22	20	18	16	15	14	11
10	47	36	30	25	42	33	27	23	27	23	20	21	18	16	15	14	13	11

POLAR GRAPH



Maximum Candela = 965.05 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.)