

**IES Report**

**DoubleBox™ | 107 | 120° Batwing, up | 40° Symmetric down | 90 CRI | SO**

**107-DB-XX-4-48-XX-XX-XX-XX-X-X-Z-SO-359-G1S1-X-BL-X**

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	69	72	73	75
Total Lumens, 4' rail length (1219mm)	3319	3423	3493	3563
Lumens per foot (305mm)	830	856	873	891
Lumens per foot UP (305mm)	602	621	634	646
Lumens per foot DOWN (305mm)	228	235	240	245
Input Power (W), 4' rail length (1219mm)	48.14	48.14	48.14	48.14
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: L011800107



**Report No:** L011800107

**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-G1S1-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.

**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**

<b>Manufacturer:</b>	Vode Lighting
<b>Model Number:</b>	107-DB-48-Z-SO-359-G1S1-BL
<b>Driver Model Number:</b>	MEAN WELL HLG-40H-36A (2 DRIVERS)
<b>Total Lumens:</b>	3493.30
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	0.4
<b>Input Power (W):</b>	48.14
<b>Input Power Factor:</b>	0.99
<b>Current ATHD @ 120V(%):</b>	10%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	73
<b>Color Rendering Index (CRI):</b>	96
<b>Correlated Color Temperature (K):</b>	3336
<b>Chromaticity Coordinate x:</b>	0.4134
<b>Chromaticity Coordinate y:</b>	0.3918
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	0:50
<b>Total Operating Time (Hours):</b>	2:25

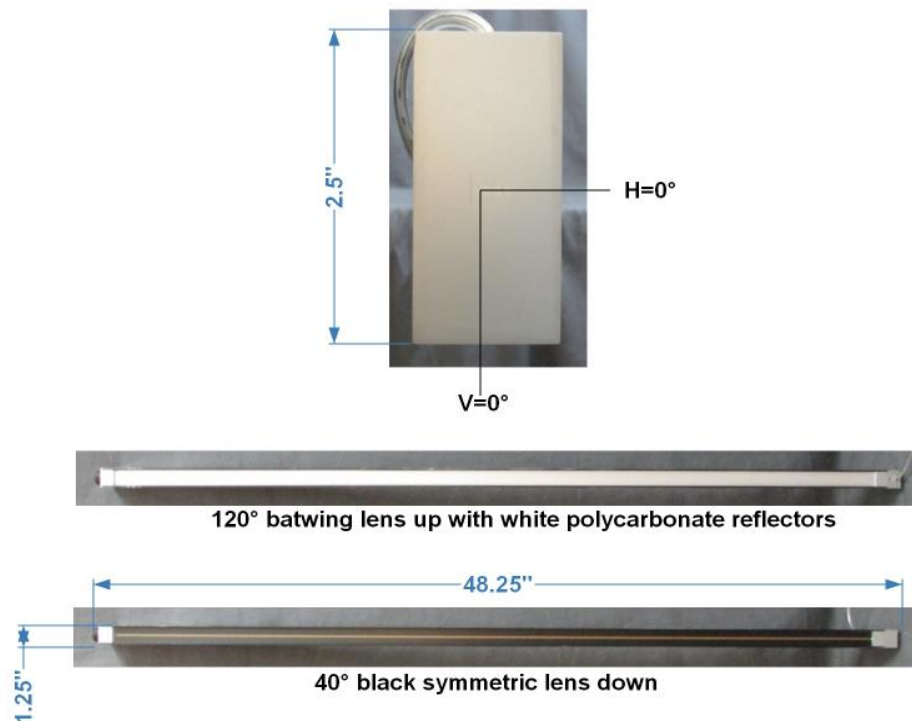
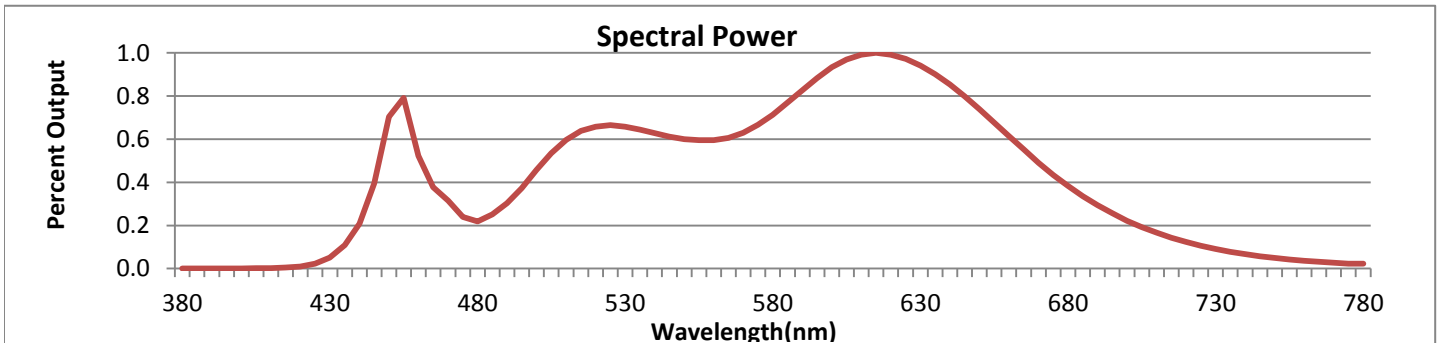


FIG. 1 LUMINAIRE

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



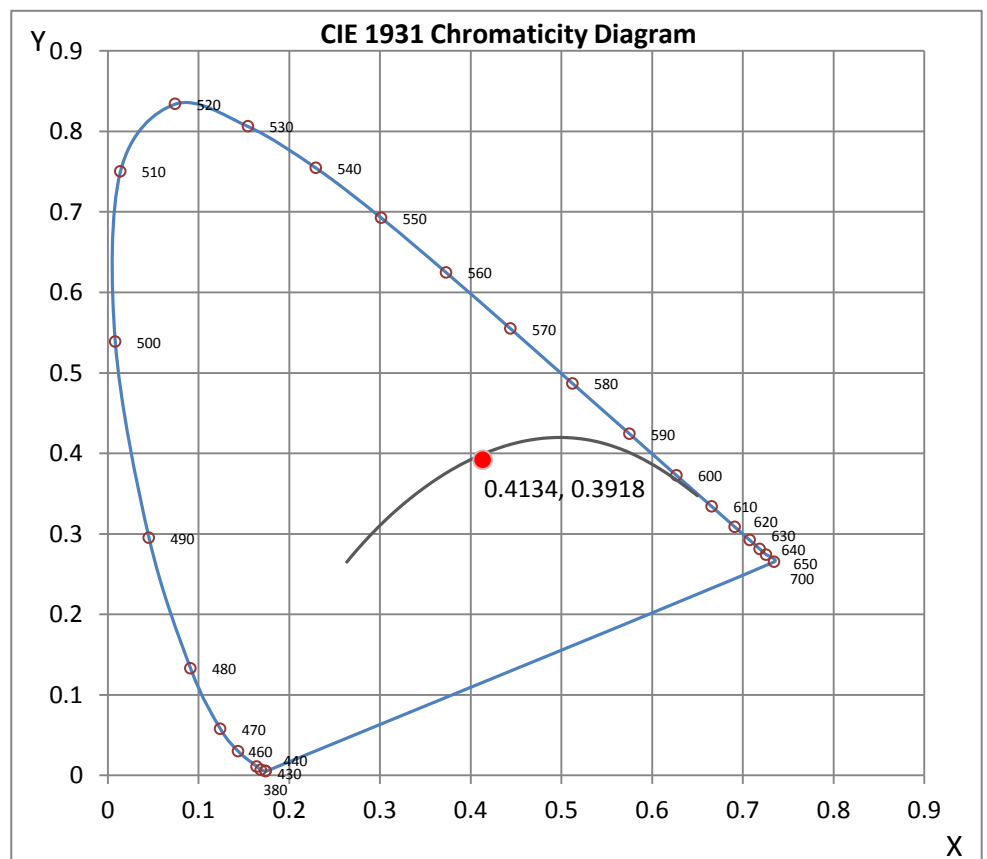
Wavelength	W/m <sup>2</sup> nm	440	0.2076	510	0.5970	580	0.7130	650	0.7398	720	0.1230
380	0.0008	450	0.7032	520	0.6581	590	0.8269	660	0.6151	730	0.0907
390	0.0009	460	0.5235	530	0.6575	600	0.9333	670	0.4904	740	0.0666
400	0.0012	470	0.3147	540	0.6278	610	0.9917	680	0.3836	750	0.0495
410	0.0022	480	0.2190	550	0.6004	620	0.9922	690	0.2940	760	0.0364
420	0.0101	490	0.3034	560	0.5956	630	0.9413	700	0.2222	770	0.0269
430	0.0517	500	0.4569	570	0.6296	640	0.8533	710	0.1664	780	0.0233

**CRI & CCT**

x	0.4134
y	0.3918
u'	0.2405
v'	0.5129
CRI	95.60
CCT	3336
Duv	-0.00121

**R Values**

R1	97.19
R2	98.57
R3	98.96
R4	95.26
R5	97.24
R6	93.95
R7	94.37
R8	89.13
R9	74.30
R10	97.61
R11	88.13
R12	83.12
R13	96.78
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 : L011800107.IES**

## DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L011800107  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 1/12/2018  
[MANUFAC] Vode Lighting  
[LUMCAT] 107-DB-48-Z-SO-359-G1S1-BL  
[LUMINAIRE] DoubleBox LED, 48", 3500K, 90 CRI, zipper board,  
[MORE] 120° batwing lens up with white polycarbonate reflectors/40° black symmetric 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, 48.14W  
[TEST PROCEDURE] IESNA:LM-79-08

## CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	3493
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	73
Total Luminaire Watts	48.14
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	459	1567	16956
55	196	587	8983
65	102	250	4296
75	51	119	2167
85	13	18	1000

**IES INDOOR REPORT**  
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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>
<b>0</b>	1019	1019	1019	1019	1019	1019	1019	1019	1019	1019
<b>5</b>	975	974	974	975	975	976	978	980	982	984
<b>10</b>	846	846	848	853	859	867	876	887	899	912
<b>15</b>	667	667	673	683	696	713	734	758	785	812
<b>20</b>	460	460	469	484	506	534	566	597	631	666
<b>25</b>	286	290	302	319	343	367	393	425	463	507
<b>30</b>	168	170	178	196	214	232	252	281	319	357
<b>35</b>	96	97	103	114	126	138	152	178	203	237
<b>40</b>	53	55	59	65	72	79	92	108	127	153
<b>45</b>	33	34	36	39	42	46	56	65	78	90
<b>50</b>	22	22	23	25	26	30	35	40	47	57
<b>55</b>	15	15	16	17	18	20	22	25	30	35
<b>60</b>	11	11	11	12	13	14	15	17	20	23
<b>65</b>	8	8	8	9	9	10	11	12	13	15
<b>70</b>	6	6	6	7	7	7	8	8	9	10
<b>75</b>	4	4	4	5	5	5	5	6	6	7
<b>80</b>	1	2	2	2	2	2	3	3	3	4
<b>85</b>	1	1	1	1	1	1	1	1	1	1
<b>90</b>	1	1	1	1	1	1	1	1	1	1
<b>95</b>	38	40	40	41	42	44	47	47	46	45
<b>100</b>	136	126	128	128	128	127	127	128	123	118
<b>105</b>	239	223	224	226	225	225	223	219	215	206
<b>110</b>	351	345	330	329	331	330	328	322	311	295
<b>115</b>	465	464	453	441	437	434	432	424	414	395
<b>120</b>	576	575	573	567	558	550	543	534	515	487
<b>125</b>	683	681	679	676	671	660	651	628	604	570
<b>130</b>	770	769	765	760	753	743	727	703	671	629
<b>135</b>	840	838	834	826	816	804	783	760	720	679
<b>140</b>	889	886	880	871	860	845	820	789	752	704
<b>145</b>	914	911	904	894	878	859	836	799	760	715
<b>150</b>	910	906	898	885	868	846	821	788	750	708
<b>155</b>	867	864	857	844	828	807	782	756	723	688
<b>160</b>	798	796	789	780	765	749	730	707	683	660
<b>165</b>	714	712	708	702	694	683	671	658	644	627
<b>170</b>	638	637	635	633	630	626	621	615	609	602
<b>175</b>	591	590	590	589	588	588	587	586	585	584
<b>180</b>	575	575	575	575	575	575	575	575	575	575

**Vert. 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>
<b>0</b>	1019	1019	1019	1019	1019	1019	1019	1019	1019
<b>5</b>	986	989	992	996	999	1003	1007	1010	1014
<b>10</b>	927	942	959	965	971	978	985	993	1001
<b>15</b>	835	855	877	901	928	937	947	957	969
<b>20</b>	702	741	782	811	844	879	891	904	920
<b>25</b>	555	603	653	707	747	787	818	833	850
<b>30</b>	405	463	520	578	637	680	726	742	762
<b>35</b>	282	332	387	442	503	556	603	626	645
<b>40</b>	181	225	268	315	369	422	465	493	510
<b>45</b>	113	139	173	214	256	301	332	349	355
<b>50</b>	69	86	109	136	165	197	223	242	254
<b>55</b>	43	53	66	83	102	122	140	152	156
<b>60</b>	27	33	41	51	63	76	87	91	95

**IES INDOOR REPORT  
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**CANDELA TABULATION - (Cont.)**

<b>65</b>	18	21	26	32	38	45	51	55	57
<b>70</b>	12	14	16	20	23	28	31	33	35
<b>75</b>	8	9	10	12	14	16	18	19	19
<b>80</b>	4	5	6	6	7	8	9	10	10
<b>85</b>	1	2	2	2	2	3	3	3	4
<b>90</b>	1	1	1	1	1	1	1	1	1
<b>95</b>	44	39	33	29	25	24	22	23	23
<b>100</b>	112	101	89	82	77	75	73	73	73
<b>105</b>	190	172	153	136	126	119	117	116	115
<b>110</b>	277	252	224	199	184	175	170	168	168
<b>115</b>	365	330	294	262	241	228	221	218	219
<b>120</b>	450	404	359	320	295	280	271	267	266
<b>125</b>	520	467	417	371	344	326	315	310	309
<b>130</b>	581	523	469	423	388	365	350	342	340
<b>135</b>	622	566	511	465	429	406	392	384	381
<b>140</b>	652	596	545	499	466	440	426	417	414
<b>145</b>	664	616	569	529	497	473	457	449	445
<b>150</b>	665	623	583	550	520	502	485	480	476
<b>155</b>	653	621	591	562	542	525	512	506	502
<b>160</b>	637	612	589	573	557	542	536	531	526
<b>165</b>	612	600	588	576	564	559	555	551	548
<b>170</b>	595	587	579	577	574	571	568	565	563
<b>175</b>	582	581	580	579	577	576	575	573	572
<b>180</b>	575	575	575	575	575	575	575	575	575



**IES INDOOR REPORT**  
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**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	316.86	N.A.	9.10
0-30	564.29	N.A.	16.20
0-40	755.54	N.A.	21.60
0-60	923.34	N.A.	26.40
0-80	957.29	N.A.	27.40
0-90	959.72	N.A.	27.50
10-90	867.64	N.A.	24.80
20-40	438.68	N.A.	12.60
20-50	551.82	N.A.	15.80
40-70	191.82	N.A.	5.50
60-80	33.95	N.A.	1.00
70-80	9.93	N.A.	0.30
80-90	2.43	N.A.	0.10
90-110	244.70	N.A.	7.00
90-120	596.59	N.A.	17.10
90-130	1059.87	N.A.	30.30
90-150	1981.53	N.A.	56.70
90-180	2533.58	N.A.	72.50
110-180	2288.88	N.A.	65.50
0-180	3493.3	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	92.08
10-20	224.78
20-30	247.43
30-40	191.25
40-50	113.15
50-60	54.65
60-70	24.02
70-80	9.93
80-90	2.43
90-100	49.30
100-110	195.40
110-120	351.89
120-130	463.27
130-140	488.73
140-150	432.93
150-160	316.44
160-170	179.40
170-180	56.21

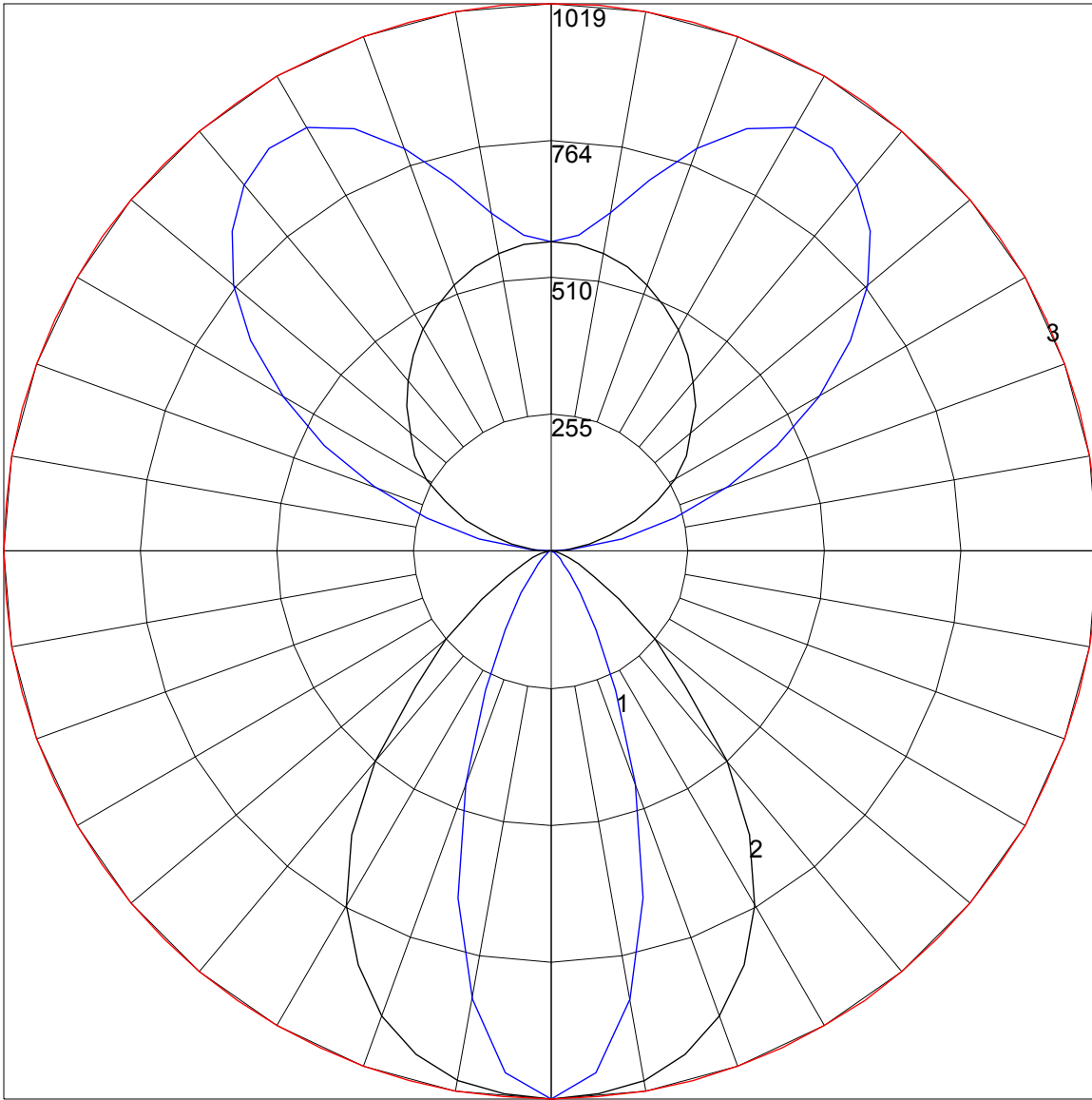
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	102	102	102	102	91	91	91	91	71	71	71	52	52	52	35	35	35	27
1	94	90	87	84	84	81	78	75	63	62	60	47	46	45	33	32	32	25
2	86	80	75	70	77	72	67	64	57	54	51	43	41	40	30	29	29	23
3	79	71	65	60	71	64	59	55	51	48	45	39	37	35	28	27	26	21
4	73	64	57	52	66	58	52	47	46	42	39	36	33	31	26	24	23	19
5	68	57	50	45	61	52	46	41	42	38	35	33	30	28	24	22	21	18
6	63	52	45	40	56	47	41	37	38	34	31	30	27	25	22	21	19	16
7	58	47	40	35	52	43	37	33	35	31	28	28	25	23	21	19	18	15
8	54	43	36	32	49	40	34	29	32	28	25	26	23	21	19	18	16	14
9	51	40	33	28	46	36	31	27	30	26	23	24	21	19	18	17	15	13
10	48	37	30	26	43	34	28	24	28	24	21	22	19	17	17	15	14	12

POLAR GRAPH



Maximum Candela = 1019 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.)