

## IES Report

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

**107-DB-XX-4-48-XX-XX-XX-XX-X-X-Z-SO-359-G1WB-X-XX-X**

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	80	83	84	86
Total Lumens, 4' rail length (1219mm)	3838	3959	4040	4121
Lumens per foot (305mm)	959	990	1010	1030
Lumens per foot UP (305mm)	620	639	653	666
Lumens per foot DOWN (305mm)	340	351	358	365
Input Power (W), 4' rail length (1219mm)	48.1	48.1	48.1	48.1
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](#).



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Report No: L011800101



**Report No:** L011800101

**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-G1WB

**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

<b>Manufacturer:</b>	Vode Lighting
<b>Model Number:</b>	107-DB-48-Z-SO-359-G1WB
<b>Driver Model Number:</b>	MEAN WELL HLG-40H-36A (2 DRIVERS)
<b>Total Lumens:</b>	4039.89
<b>Input Voltage (VAC/60Hz):</b>	120.00
<b>Input Current (Amp):</b>	0.4
<b>Input Power (W):</b>	48.10
<b>Input Power Factor:</b>	0.99
<b>Current ATHD @ 120V(%):</b>	10%
<b>Current ATHD @ 277V(%):</b>	N/A
<b>Efficacy:</b>	84
<b>Color Rendering Index (CRI):</b>	96
<b>Correlated Color Temperature (K):</b>	3334
<b>Chromaticity Coordinate x:</b>	0.4142
<b>Chromaticity Coordinate y:</b>	0.3933
<b>Ambient Temperature (°C):</b>	25.0
<b>Stabilization Time (Hours):</b>	1:00
<b>Total Operating Time (Hours):</b>	2:35

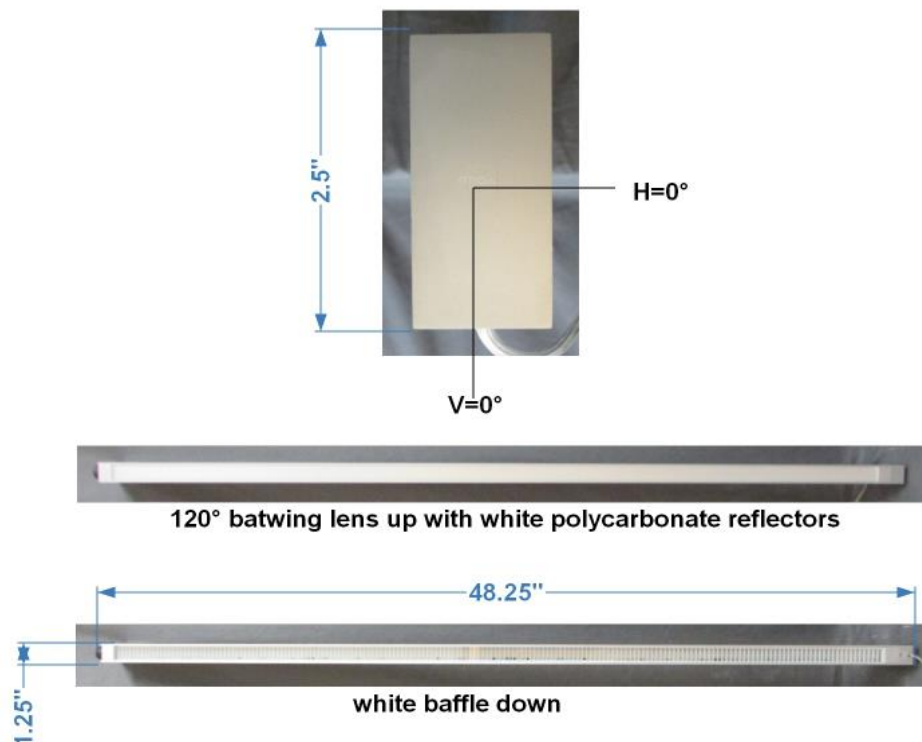
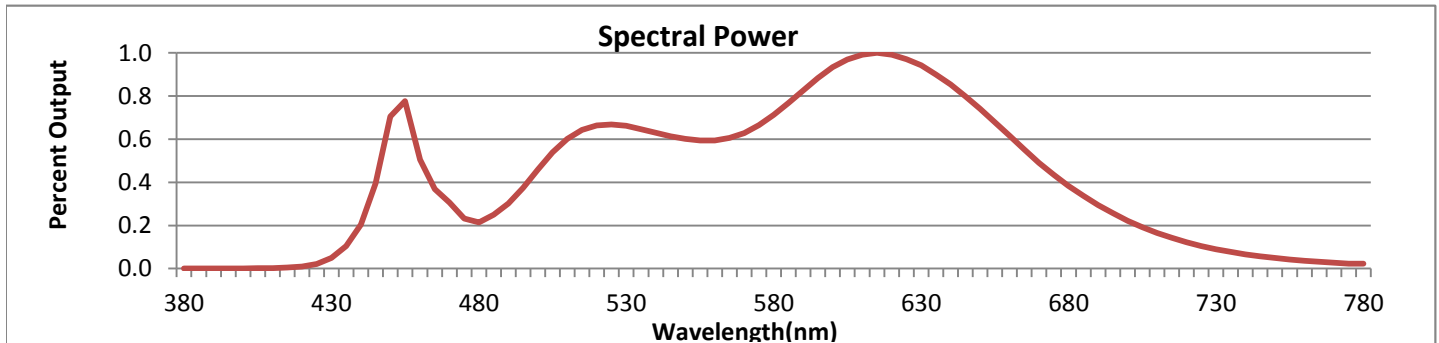


FIG. 1 LUMINAIRE



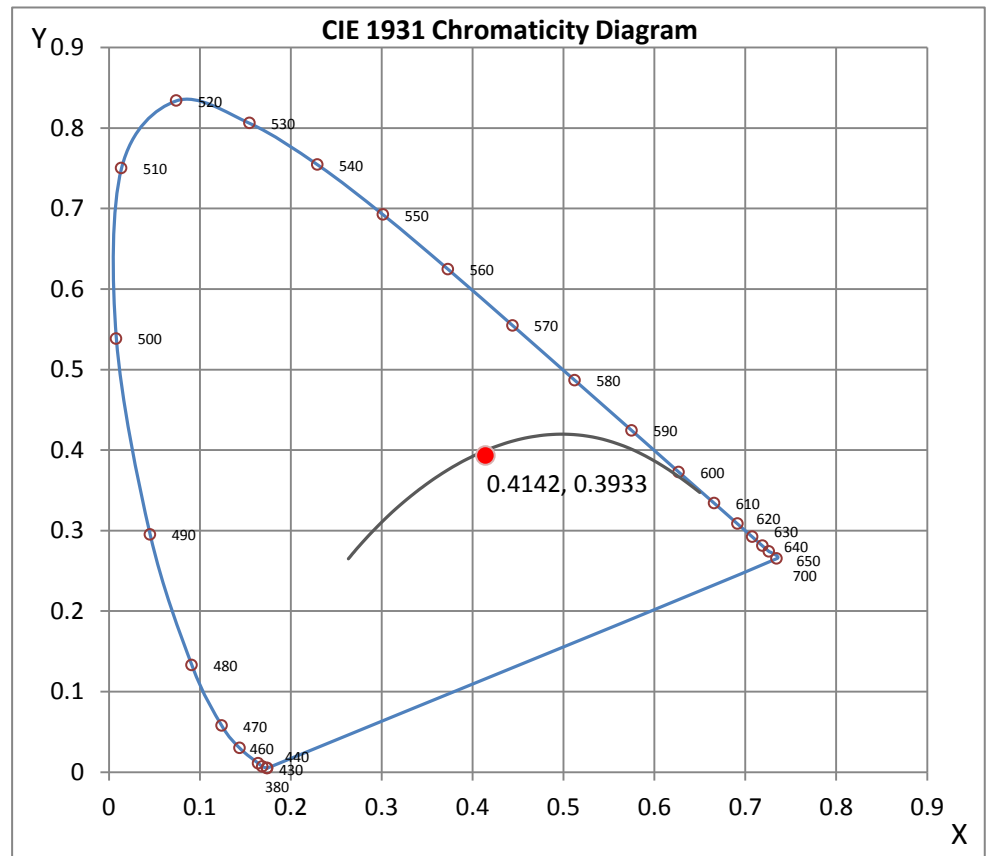
Wavelength	W/m <sup>2</sup> nm	440	0.2039	510	0.6011	580	0.7122	650	0.7410	720	0.1220
380	0.0009	450	0.7049	520	0.6636	590	0.8263	660	0.6159	730	0.0899
390	0.0010	460	0.5053	530	0.6620	600	0.9336	670	0.4908	740	0.0660
400	0.0011	470	0.3058	540	0.6297	610	0.9917	680	0.3840	750	0.0487
410	0.0023	480	0.2145	550	0.6011	620	0.9922	690	0.2943	760	0.0359
420	0.0093	490	0.3017	560	0.5943	630	0.9426	700	0.2218	770	0.0265
430	0.0494	500	0.4590	570	0.6282	640	0.8534	710	0.1657	780	0.0229

**CRI & CCT**

x	0.4142
y	0.3933
u'	0.2404
v'	0.5137
CRI	95.70
CCT	3334
Duv	-0.00072

**R Values**

R1	97.26
R2	98.80
R3	98.94
R4	95.06
R5	97.31
R6	94.24
R7	94.62
R8	89.22
R9	74.14
R10	97.99
R11	87.84
R12	83.17
R13	96.90
R14	98.40



## 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 : L011800101.IES

### DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002  
[TEST] L011800101  
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)  
[ISSUEDATE] 1/9/2018  
[MANUFAC] Vode Lighting  
[LUMCAT] 107-DB-48-Z-SO-359-G1WB  
[LUMINAIRE] DoubleBox LED, 48", 3500K, 90 CRI, zipper board,  
[MORE] 120° batwing lens up with white polycarbonate reflectors/white 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, 48.10W  
[TEST PROCEDURE] IESNA:LM-79-08

### CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4040
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	84
Total Luminaire Watts	48.1
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	1697	4371	9457
55	1348	2230	7371
65	980	1183	5954
75	281	444	3536
85	66	90	1000

**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L011800101.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>
<b>0</b>	1139	1139	1139	1139	1139	1139	1139	1139	1139	1139
<b>5</b>	1136	1131	1126	1121	1116	1111	1106	1102	1098	1094
<b>10</b>	1124	1113	1103	1093	1084	1075	1067	1052	1038	1026
<b>15</b>	1103	1088	1073	1059	1043	1019	996	976	957	938
<b>20</b>	1071	1051	1033	1012	979	949	919	890	863	838
<b>25</b>	1027	1003	980	944	908	871	834	800	761	725
<b>30</b>	975	948	917	871	826	783	739	693	648	605
<b>35</b>	908	878	836	785	734	683	632	578	526	474
<b>40</b>	417	410	412	435	479	527	495	442	395	343
<b>45</b>	122	137	165	185	191	197	265	284	267	251
<b>50</b>	110	114	120	127	136	148	160	174	179	180
<b>55</b>	103	105	108	112	116	123	129	130	132	133
<b>60</b>	96	95	94	93	93	94	96	97	98	99
<b>65</b>	77	76	72	69	67	66	67	67	69	71
<b>70</b>	45	45	44	43	43	42	43	43	44	45
<b>75</b>	22	22	23	23	23	23	23	23	25	26
<b>80</b>	13	13	12	12	12	12	11	11	11	12
<b>85</b>	5	6	6	5	5	5	5	5	5	5
<b>90</b>	1	1	1	1	1	1	1	1	1	1
<b>95</b>	38	42	40	41	41	42	43	45	48	46
<b>100</b>	139	125	129	130	129	129	129	127	125	122
<b>105</b>	244	227	229	230	229	228	226	224	220	211
<b>110</b>	360	353	336	335	337	339	335	325	318	305
<b>115</b>	475	475	462	451	446	445	442	434	423	405
<b>120</b>	588	587	585	576	567	558	551	543	524	497
<b>125</b>	692	691	689	686	681	669	660	638	615	583
<b>130</b>	782	781	777	772	765	754	738	716	685	644
<b>135</b>	854	852	847	840	831	819	797	774	735	695
<b>140</b>	905	903	897	888	876	862	836	806	770	722
<b>145</b>	934	930	923	912	897	878	855	819	781	736
<b>150</b>	931	927	919	906	889	867	843	810	773	732
<b>155</b>	892	888	882	869	852	831	807	781	748	715
<b>160</b>	826	824	817	807	793	777	758	735	711	689
<b>165</b>	746	744	739	733	726	715	702	689	675	658
<b>170</b>	673	672	670	667	664	660	655	649	642	635
<b>175</b>	626	626	625	625	624	623	622	621	620	619
<b>180</b>	611	611	611	611	611	611	611	611	611	611

**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>
<b>0</b>	1139	1139	1139	1139	1139	1139	1139	1139	1139
<b>5</b>	1091	1088	1085	1083	1081	1079	1078	1078	1078
<b>10</b>	1014	1005	996	987	980	974	970	966	966
<b>15</b>	920	903	888	876	866	857	850	845	844
<b>20</b>	813	789	769	750	734	721	711	704	702
<b>25</b>	693	663	636	613	593	577	565	554	551
<b>30</b>	565	527	489	457	431	411	398	382	376
<b>35</b>	423	375	349	331	317	306	298	292	290
<b>40</b>	312	285	271	262	254	247	243	240	240
<b>45</b>	238	227	219	213	208	203	200	198	198
<b>50</b>	183	179	174	171	168	164	162	160	159
<b>55</b>	136	135	135	134	132	131	129	129	128
<b>60</b>	100	101	102	102	102	102	101	101	101

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

65	72	75	75	75	75	77	80	79	79
70	47	48	50	51	51	52	53	52	52
75	27	28	29	30	31	31	32	31	31
80	13	13	14	14	15	15	15	15	15
85	5	5	5	5	5	4	5	4	4
90	1	1	1	1	1	1	1	1	1
95	43	39	34	31	28	26	24	24	24
100	115	103	93	85	80	77	75	74	75
105	196	178	158	142	130	125	124	122	120
110	285	259	230	207	191	182	178	177	176
115	372	335	301	271	250	238	232	229	228
120	462	416	369	330	305	291	283	279	278
125	535	482	430	384	356	339	330	325	324
130	596	538	485	439	405	384	371	365	364
135	639	583	529	484	448	424	411	403	401
140	672	616	565	520	487	461	447	439	435
145	686	638	592	551	520	497	481	473	469
150	690	648	608	575	546	528	511	505	501
155	680	648	618	589	570	553	540	534	530
160	665	641	618	602	587	572	566	561	556
165	643	631	619	608	595	591	586	582	579
170	628	620	613	610	606	603	601	598	595
175	617	616	615	613	612	610	609	608	606
180	611	611	611	611	611	611	611	611	611



**IES INDOOR REPORT**  
**PHOTOMETRIC FILENAME : L011800101.IES**

**ZONAL LUMEN SUMMARY**

Zone	Lumens	%Lamp	%Fixt
0-20	369.68	N.A.	9.20
0-30	713.07	N.A.	17.70
0-40	1029.5	N.A.	25.50
0-60	1322.23	N.A.	32.70
0-80	1423.86	N.A.	35.20
0-90	1430.38	N.A.	35.40
10-90	1327.39	N.A.	32.90
20-40	659.83	N.A.	16.30
20-50	839.19	N.A.	20.80
40-70	364.62	N.A.	9.00
60-80	101.63	N.A.	2.50
70-80	29.74	N.A.	0.70
80-90	6.52	N.A.	0.20
90-110	250.44	N.A.	6.20
90-120	611.31	N.A.	15.10
90-130	1085.63	N.A.	26.90
90-150	2033.36	N.A.	50.30
90-180	2609.51	N.A.	64.60
110-180	2359.06	N.A.	58.40
0-180	4039.89	N.A.	100.00

Total Luminaire Efficiency = N.A. %

**ZONAL LUMEN SUMMARY**

Zone	Lumens
0-10	102.99
10-20	266.68
20-30	343.40
30-40	316.43
40-50	179.36
50-60	113.37
60-70	71.88
70-80	29.74
80-90	6.52
90-100	50.02
100-110	200.43
110-120	360.87
120-130	474.32
130-140	501.56
140-150	446.16
150-160	328.46
160-170	188.19
170-180	59.50

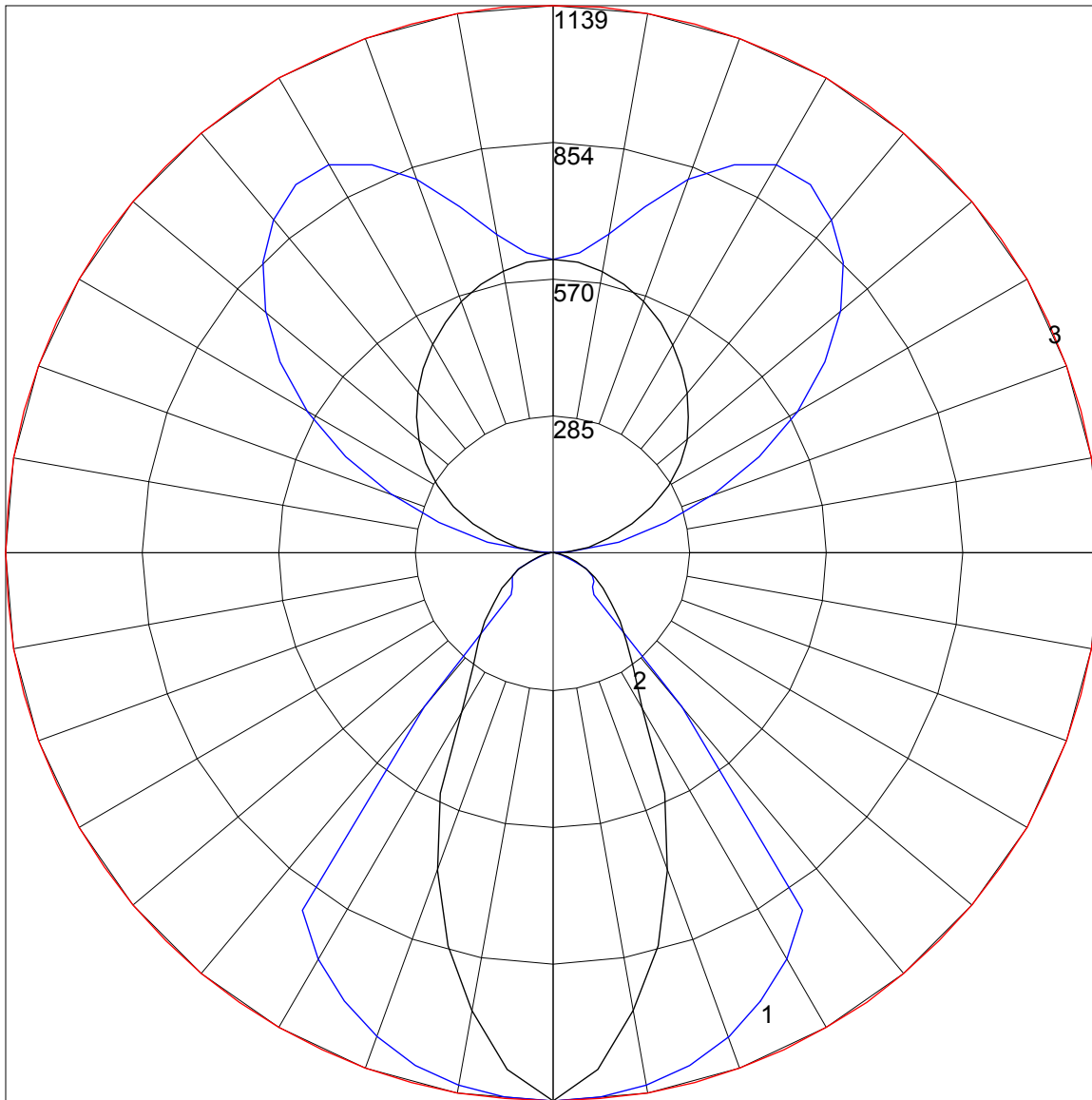
**IES INDOOR REPORT**  
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**COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD**

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	104	104	104	104	94	94	94	94	75	75	75	58	58	58	43	43	43	35
1	95	92	88	85	86	83	80	78	67	65	64	53	52	50	39	39	38	32
2	88	81	76	71	79	74	69	66	60	57	54	48	46	44	36	35	34	28
3	81	72	66	61	73	66	60	56	54	50	47	43	40	38	33	31	30	25
4	74	65	58	52	67	59	53	49	49	45	41	39	36	34	30	28	27	23
5	69	58	51	46	62	53	47	42	44	40	36	36	33	30	28	26	24	21
6	64	53	45	40	58	49	42	37	40	36	32	33	30	27	26	24	22	19
7	59	48	41	36	54	44	38	33	37	32	29	30	27	24	24	22	20	17
8	55	44	37	32	50	40	34	30	34	29	26	28	25	22	22	20	18	16
9	52	40	33	29	47	37	31	27	31	27	24	26	23	20	21	19	17	15
10	48	37	30	26	44	34	29	25	29	25	22	24	21	19	19	17	16	14

POLAR GRAPH



Maximum Candela = 1139 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.)