

IES Report

DoubleBox™ | 107 | 120° Batwing, up | 60° Symmetric, down | 90 CRI |SO

107-DB-XX-4-48-XX-XX-XX-XX-X-X-Z-SO-359-G1S2-X-AL / WH-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	82	85	86	88
Total Lumens, 4' rail length (1219mm)	3924	4048	4131	4213
Lumens per foot (305mm)	981	1012	1033	1053
Lumens per foot UP (305mm)	641	661	674	688
Lumens per foot DOWN (305mm)	341	352	359	366
Input Power (W), 4' rail length (1219mm)	48.15	48.15	48.15	48.15
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](#).

Report No: L011800104 **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-G1S2

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-G1S2
Driver Model Number:	MEAN WELL HLG-40H-36A (2 DRIVERS)
Total Lumens:	4130.74
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.4
Input Power (W):	48.15
Input Power Factor:	0.99
Current ATHD @ 120V(%):	10%
Current ATHD @ 277V(%):	N/A
Efficacy:	86
Color Rendering Index (CRI):	96
Correlated Color Temperature (K):	3308
Chromaticity Coordinate x:	0.4155
Chromaticity Coordinate y:	0.3934
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:55
Total Operating Time (Hours):	2:30

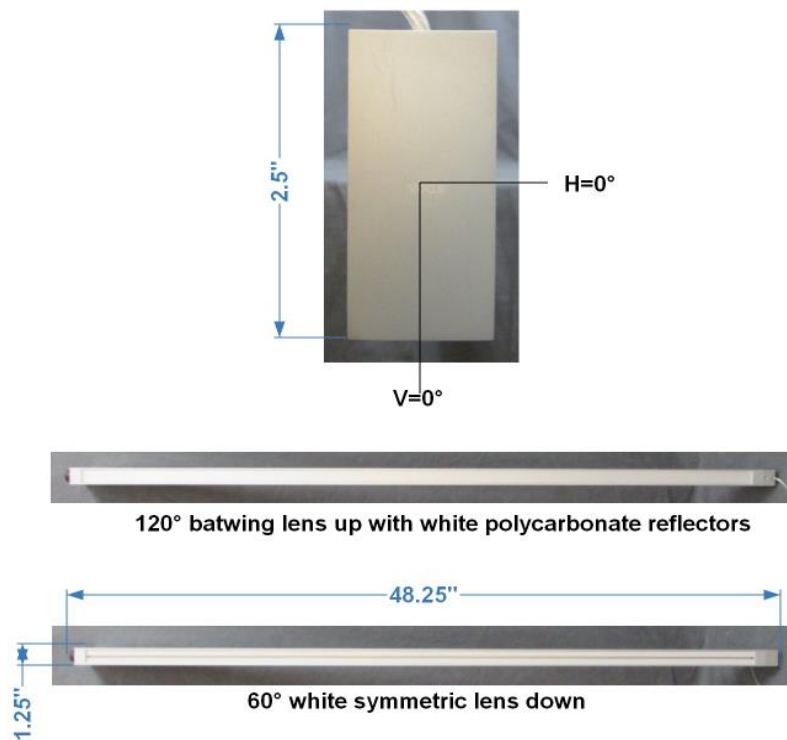
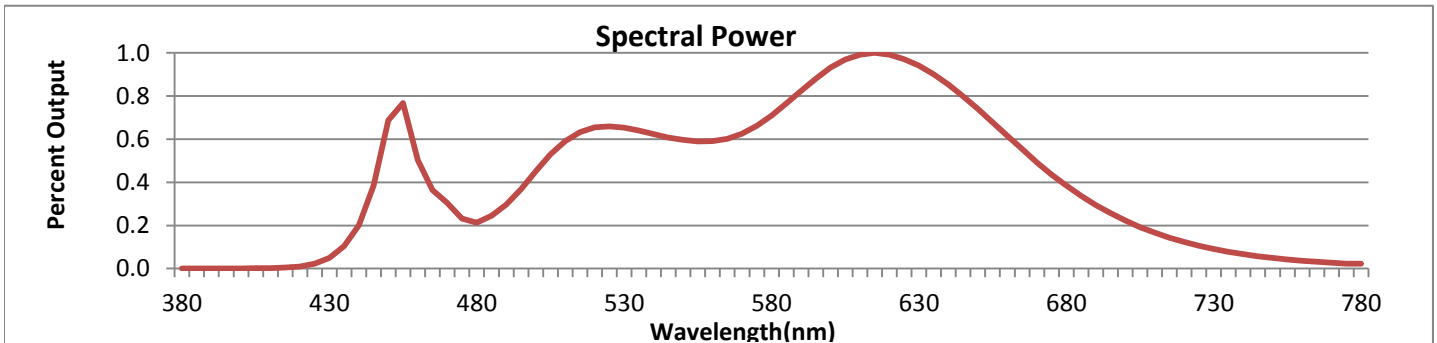


FIG. 1 LUMINAIRE

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



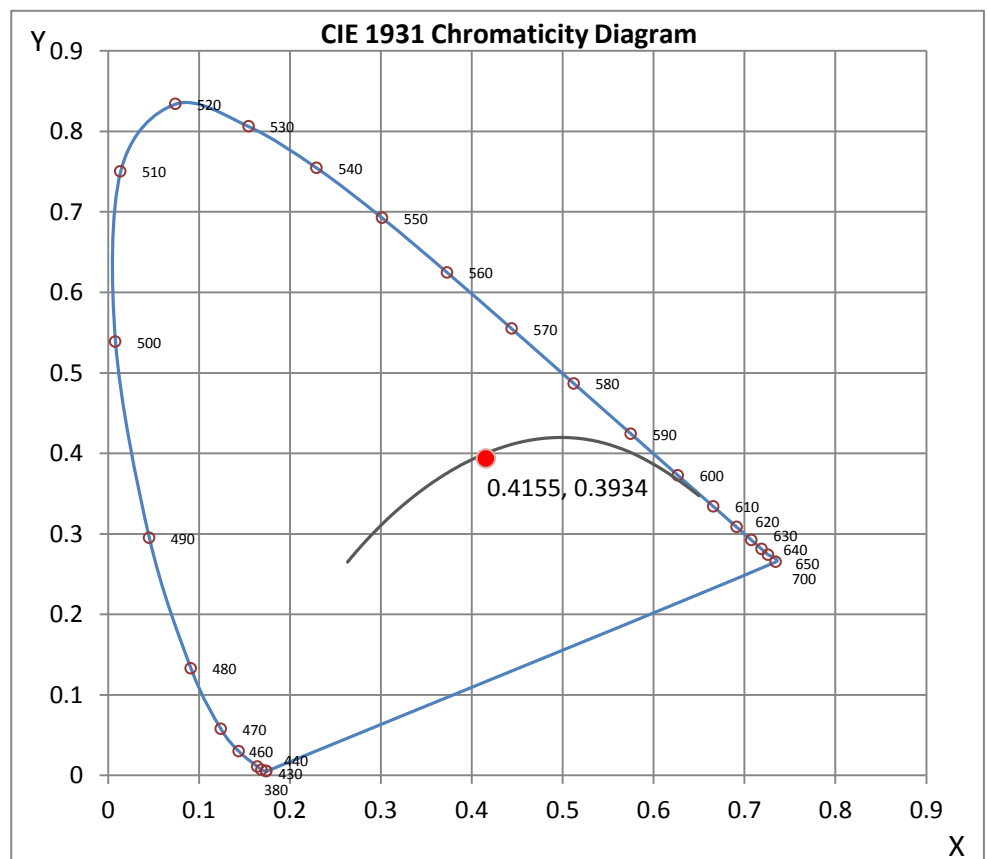
Wavelength	W/m ² nm	440	0.2014	510	0.5915	580	0.7096	650	0.7411	720	0.1232
380	0.0007	450	0.6873	520	0.6542	590	0.8241	660	0.6165	730	0.0908
390	0.0009	460	0.5041	530	0.6533	600	0.9320	670	0.4923	740	0.0667
400	0.0011	470	0.3040	540	0.6232	610	0.9913	680	0.3851	750	0.0492
410	0.0022	480	0.2127	550	0.5964	620	0.9918	690	0.2947	760	0.0364
420	0.0096	490	0.2979	560	0.5915	630	0.9415	700	0.2229	770	0.0269
430	0.0495	500	0.4517	570	0.6257	640	0.8540	710	0.1667	780	0.0232

CRI & CCT

x	0.4155
y	0.3934
u'	0.2412
v'	0.5139
CRI	95.60
CCT	3308
Duv	-0.00093

R Values

R1	97.29
R2	98.71
R3	98.97
R4	95.18
R5	97.31
R6	94.09
R7	94.43
R8	89.00
R9	73.85
R10	97.86
R11	87.99
R12	83.38
R13	96.90
R14	98.45



*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
www.lightlaboratory.com

Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L011800104.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L011800104
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 1/9/2018
[MANUFAC] Vode Lighting
[LUMCAT] 107-DB-48-Z-SO-359-G1S2
[LUMINAIRE] DoubleBox LED, 48", 3500K, 90 CRI, zipper board,
[MORE] 120° batwing lens up with white polycarbonate reflectors/60° white 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, 48.15W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	4131
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	86
Total Luminaire Watts	48.15
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	1739	4214	19822
55	956	2029	13532
65	585	1033	9119
75	319	495	5817
85	13	54	2250

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	1035	1035	1035	1035	1035	1035	1035	1035	1035	1035
5	1021	1021	1020	1021	1021	1021	1021	1021	1022	1022
10	974	973	973	975	976	979	982	984	986	989
15	881	881	885	890	896	900	907	915	925	936
20	745	744	751	759	767	780	797	816	838	853
25	581	579	585	597	614	635	662	693	716	741
30	411	413	423	439	460	486	515	545	579	612
35	272	277	289	306	326	346	370	403	438	474
40	180	185	195	208	224	237	259	285	311	348
45	125	130	136	145	153	162	181	196	220	242
50	94	96	99	105	109	116	126	138	153	171
55	73	74	77	80	82	86	91	100	109	121
60	58	59	61	62	63	65	68	72	79	87
65	46	47	47	47	48	49	51	54	58	62
70	35	36	35	35	36	37	38	39	41	44
75	25	24	25	25	25	26	26	27	28	29
80	11	10	12	12	12	12	13	14	15	16
85	1	2	2	2	2	2	2	2	3	3
90	1	1	1	1	1	1	1	1	1	1
95	34	44	43	44	45	47	51	52	50	51
100	147	137	139	139	140	139	139	138	135	130
105	256	243	243	245	244	243	240	236	231	220
110	371	367	355	353	354	351	346	345	332	317
115	491	492	483	474	469	468	462	454	442	419
120	608	608	607	600	592	584	575	565	544	513
125	716	715	714	711	706	694	684	660	635	598
130	808	807	803	797	790	778	760	736	702	658
135	879	878	873	865	855	841	817	793	752	710
140	929	927	920	910	897	881	855	824	786	737
145	955	952	944	933	916	896	872	835	796	751
150	951	946	939	925	907	885	859	827	789	749
155	911	907	901	887	870	849	825	799	767	733
160	846	844	837	828	813	796	777	755	732	710
165	767	765	760	755	747	736	724	710	696	680
170	696	695	693	690	687	683	679	673	666	659
175	651	651	651	650	649	648	647	646	645	644
180	637	637	637	637	637	637	637	637	637	637

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>
0	1035	1035	1035	1035	1035	1035	1035	1035	1035
5	1023	1024	1024	1025	1026	1027	1028	1029	1031
10	993	998	1003	1003	1004	1006	1007	1009	1012
15	944	949	955	961	969	970	972	975	978
20	867	881	895	901	908	917	919	921	925
25	770	790	805	823	831	839	846	847	852
30	644	675	701	717	736	742	752	753	759
35	512	548	577	601	618	631	639	642	647
40	383	419	450	478	498	515	521	525	527
45	275	305	334	360	381	401	409	413	415
50	191	218	245	267	282	292	299	304	304
55	136	153	172	192	206	218	227	232	235
60	97	106	121	135	147	157	164	168	170

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

65	69	77	85	95	104	110	115	118	121
70	48	53	58	64	70	75	79	85	88
75	31	34	37	40	44	47	49	50	51
80	17	19	20	22	23	25	25	26	26
85	4	5	6	6	8	9	9	9	9
90	1	1	1	1	1	1	1	1	1
95	47	42	37	32	29	27	24	25	25
100	120	108	95	86	81	78	77	75	76
105	204	185	164	146	136	130	128	126	126
110	296	268	238	214	198	191	185	183	184
115	387	346	311	281	260	248	240	237	238
120	474	427	381	342	316	302	295	291	289
125	547	493	442	397	366	349	340	336	333
130	608	552	498	452	418	397	385	379	377
135	653	598	543	498	464	440	427	419	417
140	686	632	581	536	504	479	464	456	453
145	702	655	609	569	538	515	500	492	488
150	707	666	626	594	565	548	532	526	522
155	700	668	638	610	590	574	562	556	552
160	686	662	639	624	609	594	589	584	580
165	665	654	642	630	619	614	610	607	604
170	652	644	637	634	631	628	625	623	620
175	643	642	640	639	638	637	635	634	633
180	637	637	637	637	637	637	637	637	637

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	356.76	N.A.	8.60
0-30	689.09	N.A.	16.70
0-40	984.09	N.A.	23.80
0-60	1316.72	N.A.	31.90
0-80	1426.87	N.A.	34.50
0-90	1434.3	N.A.	34.70
10-90	1337.64	N.A.	32.40
20-40	627.34	N.A.	15.20
20-50	832.78	N.A.	20.20
40-70	406.80	N.A.	9.80
60-80	110.16	N.A.	2.70
70-80	35.98	N.A.	0.90
80-90	7.43	N.A.	0.20
90-110	263.58	N.A.	6.40
90-120	639.16	N.A.	15.50
90-130	1129.09	N.A.	27.30
90-150	2102.53	N.A.	50.90
90-180	2696.44	N.A.	65.30
110-180	2432.86	N.A.	58.90
0-180	4130.74	N.A.	100.00

Total Luminaire Efficiency = N.A. %

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	96.66
10-20	260.10
20-30	332.33
30-40	295.00
40-50	205.45
50-60	127.18
60-70	74.18
70-80	35.98
80-90	7.43
90-100	53.29
100-110	210.28
110-120	375.58
120-130	489.94
130-140	515.81
140-150	457.63
150-160	337.53
160-170	194.49
170-180	61.89

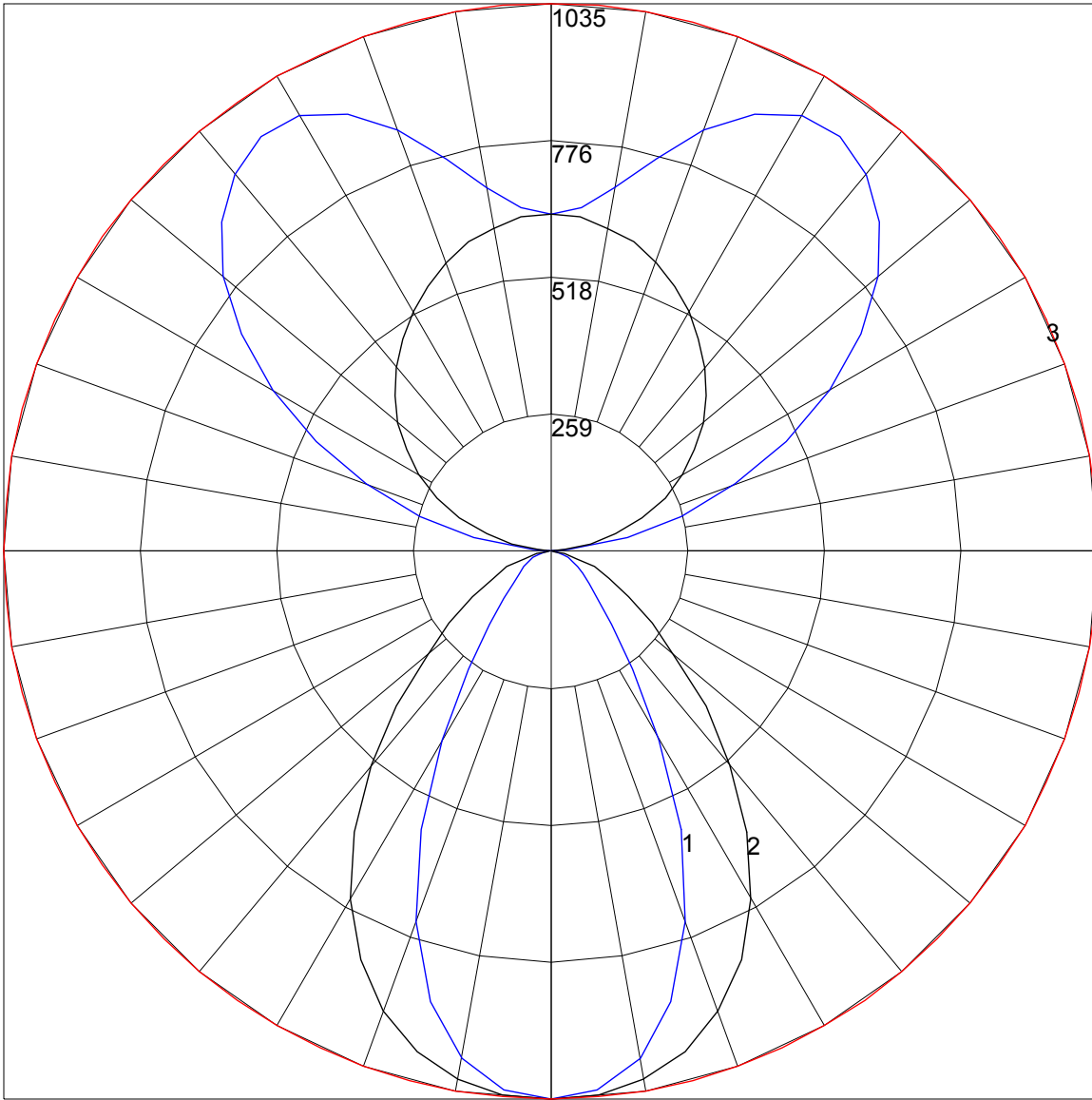
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	103	103	103	103	94	94	94	94	75	75	75	58	58	58	42	42	42	35
1	95	91	88	85	86	83	80	77	67	65	63	52	51	50	39	38	37	31
2	87	81	75	71	79	73	69	65	60	56	54	47	45	43	35	34	33	28
3	80	72	65	60	73	66	60	55	53	50	46	42	40	38	32	30	29	25
4	74	64	57	52	67	59	53	48	48	44	40	38	35	33	29	27	26	22
5	68	58	50	45	62	53	47	42	44	39	36	35	32	29	27	25	23	20
6	63	52	45	40	57	48	41	37	40	35	31	32	29	26	25	23	21	18
7	59	47	40	35	53	44	37	33	36	32	28	29	26	24	23	21	19	17
8	55	43	36	31	50	40	34	29	33	29	25	27	24	21	21	19	18	15
9	51	40	33	28	46	37	31	26	31	26	23	25	22	20	20	18	16	14
10	48	37	30	25	44	34	28	24	28	24	21	23	20	18	19	17	15	13

POLAR GRAPH



Maximum Candela = 1035 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.)