

IES Report

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

107-DB-XX-4-48-XX-XX-XX-XX-X-X-Z-SO-359-G12-X-XX-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	105	108	110	113
Total Lumens, 4' rail length (1219mm)	5024	5183	5289	5394
Lumens per foot (305mm)	1256	1296	1322	1349
Lumens per foot UP (305mm)	650	671	684	698
Lumens per foot DOWN (305mm)	606	625	638	651
Input Power (W), 4' rail length (1219mm)	48.13	48.13	48.13	48.13
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: L011800110



Report No: L011800110

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-G12

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: 1/7/18 - 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-G12
Driver Model Number:	MEAN WELL HLG-40H-36A (2 DRIVERS)
Total Lumens:	5288.56
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.4
Input Power (W):	48.13
Input Power Factor:	0.99
Current ATHD @ 120V(%):	10%
Current ATHD @ 277V(%):	N/A
Efficacy:	110
Color Rendering Index (CRI):	96
Correlated Color Temperature (K):	3313
Chromaticity Coordinate x:	0.4153
Chromaticity Coordinate y:	0.3936
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:35
Total Operating Time (Hours):	2:10

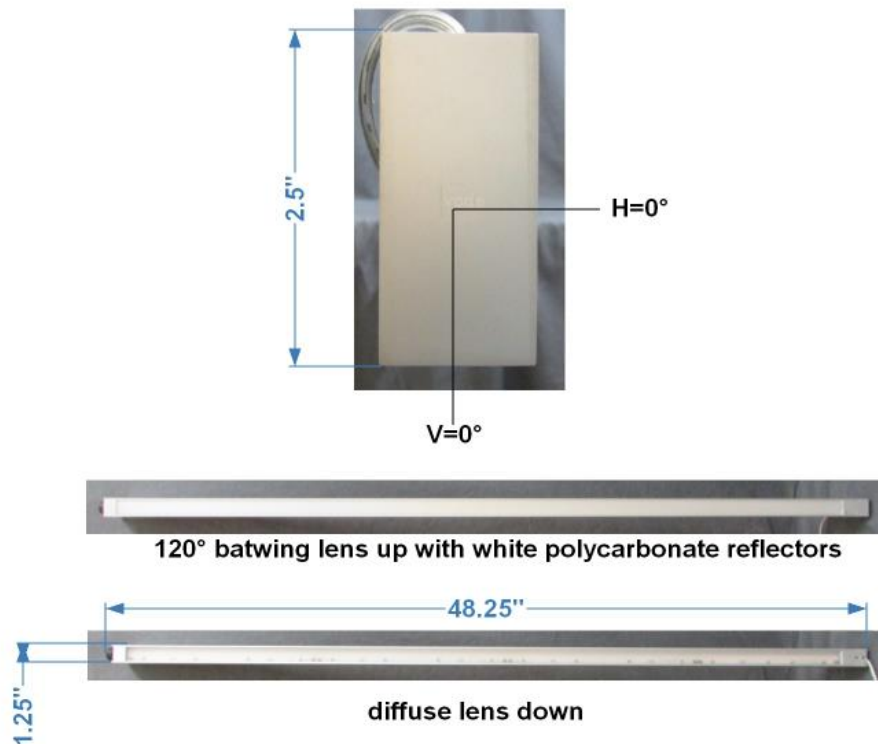
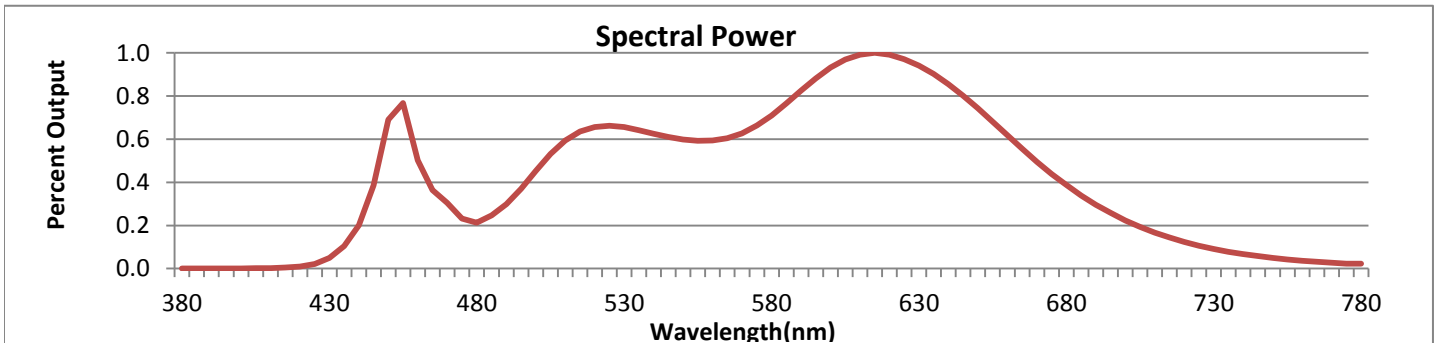


FIG. 1 LUMINAIRE

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



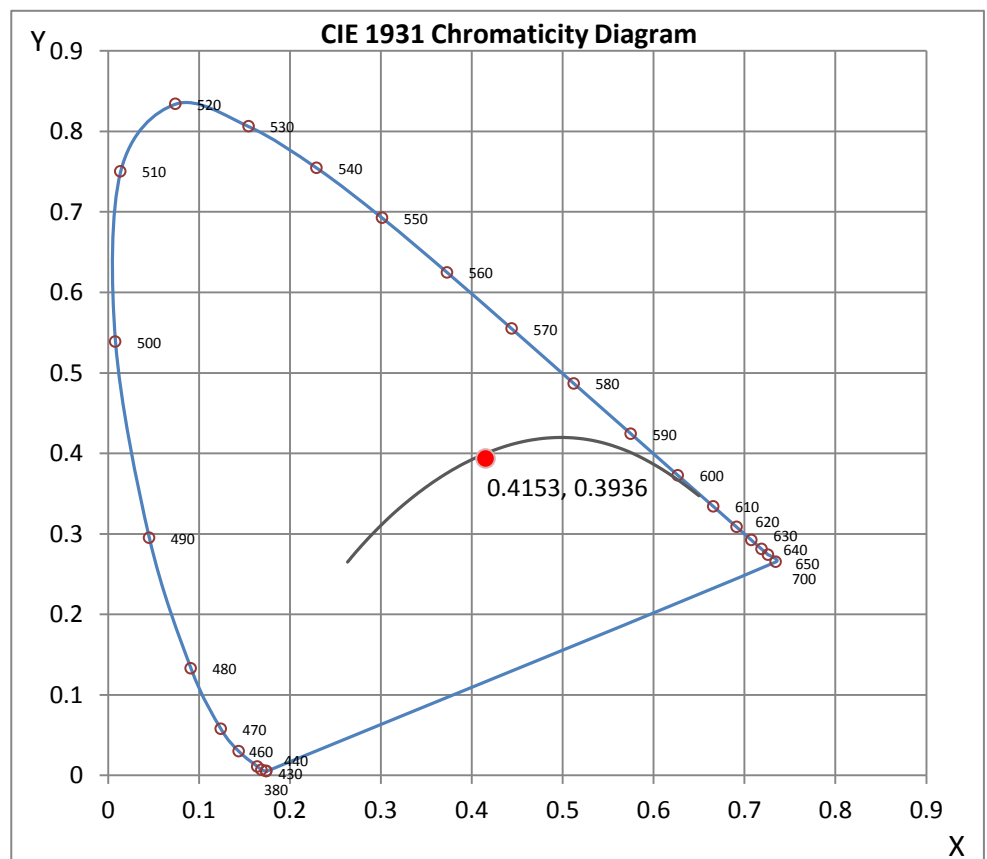
Wavelength	W/m ² nm	440	0.2014	510	0.5943	580	0.7101	650	0.7437	720	0.1236
380	0.0008	450	0.6908	520	0.6566	590	0.8253	660	0.6192	730	0.0911
390	0.0009	460	0.5025	530	0.6559	600	0.9332	670	0.4945	740	0.0668
400	0.0012	470	0.3042	540	0.6254	610	0.9918	680	0.3872	750	0.0495
410	0.0022	480	0.2130	550	0.5990	620	0.9915	690	0.2962	760	0.0365
420	0.0095	490	0.2991	560	0.5936	630	0.9419	700	0.2237	770	0.0269
430	0.0492	500	0.4531	570	0.6274	640	0.8555	710	0.1672	780	0.0233

CRI & CCT

x	0.4153
y	0.3936
u'	0.2410
v'	0.5139
CRI	95.70
CCT	3313
Duv	-0.00081

R Values

R1	97.35
R2	98.80
R3	98.95
R4	95.20
R5	97.39
R6	94.23
R7	94.52
R8	89.07
R9	73.90
R10	98.04
R11	88.05
R12	83.28
R13	96.97
R14	98.42



*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 : L011800110.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L011800110
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 1/9/2018
[MANUFAC] Vode Lighting
[LUMCAT] 107-DB-48-Z-SO-359-G12
[LUMINAIRE] DoubleBox LED, 48", 3500K, 90 CRI, zipper board,
[MORE] 120° batwing lens up with white polycarbonate reflectors/diffuse 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, 48.13W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	5289
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	110
Total Luminaire Watts	48.13
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	8304	10571	29375
55	5419	7211	25106
65	3105	4331	20650
75	1212	2082	16082
85	132	289	9998

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L011800110.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	1065	1065	1065	1065	1065	1065	1065	1065	1065	1065
5	1059	1058	1058	1057	1057	1057	1057	1056	1056	1056
10	1040	1039	1039	1038	1038	1039	1039	1038	1038	1038
15	1009	1008	1007	1008	1008	1007	1007	1007	1009	1009
20	966	964	965	965	964	964	965	965	966	967
25	911	909	910	909	910	910	910	913	912	912
30	845	844	844	844	844	845	847	847	847	848
35	770	769	768	769	769	770	772	771	773	774
40	686	686	686	686	687	688	689	690	691	693
45	597	598	598	598	599	600	602	605	604	607
50	506	506	506	507	509	510	513	514	516	518
55	414	414	416	417	418	419	422	424	427	430
60	328	328	328	326	326	326	329	331	337	342
65	244	245	241	239	240	242	246	251	256	260
70	167	164	161	162	167	170	173	177	182	187
75	95	90	94	96	99	102	106	111	116	122
80	39	38	39	41	42	44	48	53	57	65
85	10	11	11	11	11	11	11	12	14	16
90	1	1	1	1	1	1	1	1	1	1
95	37	42	43	44	46	47	49	53	50	50
100	150	137	140	141	141	140	139	138	135	129
105	260	242	245	246	245	244	241	237	232	222
110	377	369	355	354	356	352	346	344	335	321
115	497	497	484	473	469	466	462	454	443	423
120	614	613	610	601	592	584	576	567	546	518
125	720	719	717	713	708	696	687	664	639	605
130	812	810	806	800	794	782	766	743	711	669
135	884	883	878	870	860	848	826	804	764	724
140	937	935	929	920	908	893	869	838	802	754
145	968	964	957	947	931	912	890	853	814	769
150	967	963	955	942	925	903	878	845	807	766
155	929	925	918	905	889	868	844	818	784	750
160	863	861	854	845	830	813	794	771	747	725
165	782	780	775	770	762	751	738	725	710	694
170	708	707	705	702	699	695	690	684	678	671
175	661	661	660	659	659	658	657	656	655	654
180	646	646	646	646	646	646	646	646	646	646

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	1065	1065	1065	1065	1065	1065	1065	1065	1065
5	1056	1057	1057	1057	1057	1058	1058	1058	1059
10	1038	1039	1040	1039	1039	1039	1039	1040	1041
15	1009	1009	1009	1009	1011	1010	1010	1011	1012
20	967	967	968	967	968	970	969	969	971
25	914	914	914	915	915	916	916	915	916
30	849	849	850	850	853	853	855	852	853
35	775	777	776	777	778	779	780	779	781
40	694	695	696	697	697	697	697	698	700
45	607	608	609	610	612	611	611	612	615
50	521	521	521	522	524	523	523	523	522
55	432	433	433	435	435	435	434	435	436
60	347	344	347	351	352	350	347	344	343

**IES INDOOR REPORT
PHOTOMETRIC FILENAME : L011800110.IES**

CANDELA TABULATION - (Cont.)

65	267	270	272	274	274	274	274	273	274
70	192	196	200	202	203	204	204	204	205
75	127	132	136	138	140	140	141	142	141
80	69	74	83	86	86	85	86	87	86
85	19	22	26	32	35	36	39	40	40
90	1	1	1	1	1	1	1	1	1
95	48	42	37	34	29	27	26	26	25
100	121	110	97	89	84	80	79	79	78
105	206	187	167	150	139	133	131	130	130
110	299	271	242	219	202	194	191	188	187
115	392	349	314	286	265	253	247	244	243
120	481	435	386	350	326	310	301	298	298
125	555	502	450	407	379	356	341	337	335
130	620	562	508	462	428	407	395	389	387
135	666	610	555	510	475	451	438	430	427
140	702	646	595	549	516	490	476	468	465
145	719	671	624	583	551	528	512	504	500
150	724	682	642	609	579	560	544	538	534
155	716	683	653	624	604	587	574	568	564
160	701	677	653	637	622	606	601	596	592
165	679	667	655	643	631	626	622	618	615
170	663	656	648	645	642	639	637	634	631
175	653	651	650	649	648	646	645	644	643
180	646	646	646	646	646	646	646	646	646

IES INDOOR REPORT
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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	384.62	N.A.	7.30
0-30	804.57	N.A.	15.20
0-40	1288.08	N.A.	24.40
0-60	2136.91	N.A.	40.40
0-80	2523.1	N.A.	47.70
0-90	2552.24	N.A.	48.30
10-90	2451.89	N.A.	46.40
20-40	903.47	N.A.	17.10
20-50	1370.36	N.A.	25.90
40-70	1106.39	N.A.	20.90
60-80	386.18	N.A.	7.30
70-80	128.62	N.A.	2.40
80-90	29.14	N.A.	0.60
90-110	266.28	N.A.	5.00
90-120	645.19	N.A.	12.20
90-130	1140.17	N.A.	21.60
90-150	2130.29	N.A.	40.30
90-180	2736.32	N.A.	51.70
110-180	2470.03	N.A.	46.70
0-180	5288.56	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	100.35
10-20	284.27
20-30	419.95
30-40	483.52
40-50	466.89
50-60	381.94
60-70	257.56
70-80	128.62
80-90	29.14
90-100	53.81
100-110	212.47
110-120	378.91
120-130	494.98
130-140	523.41
140-150	466.71
150-160	344.82
160-170	198.33
170-180	62.87

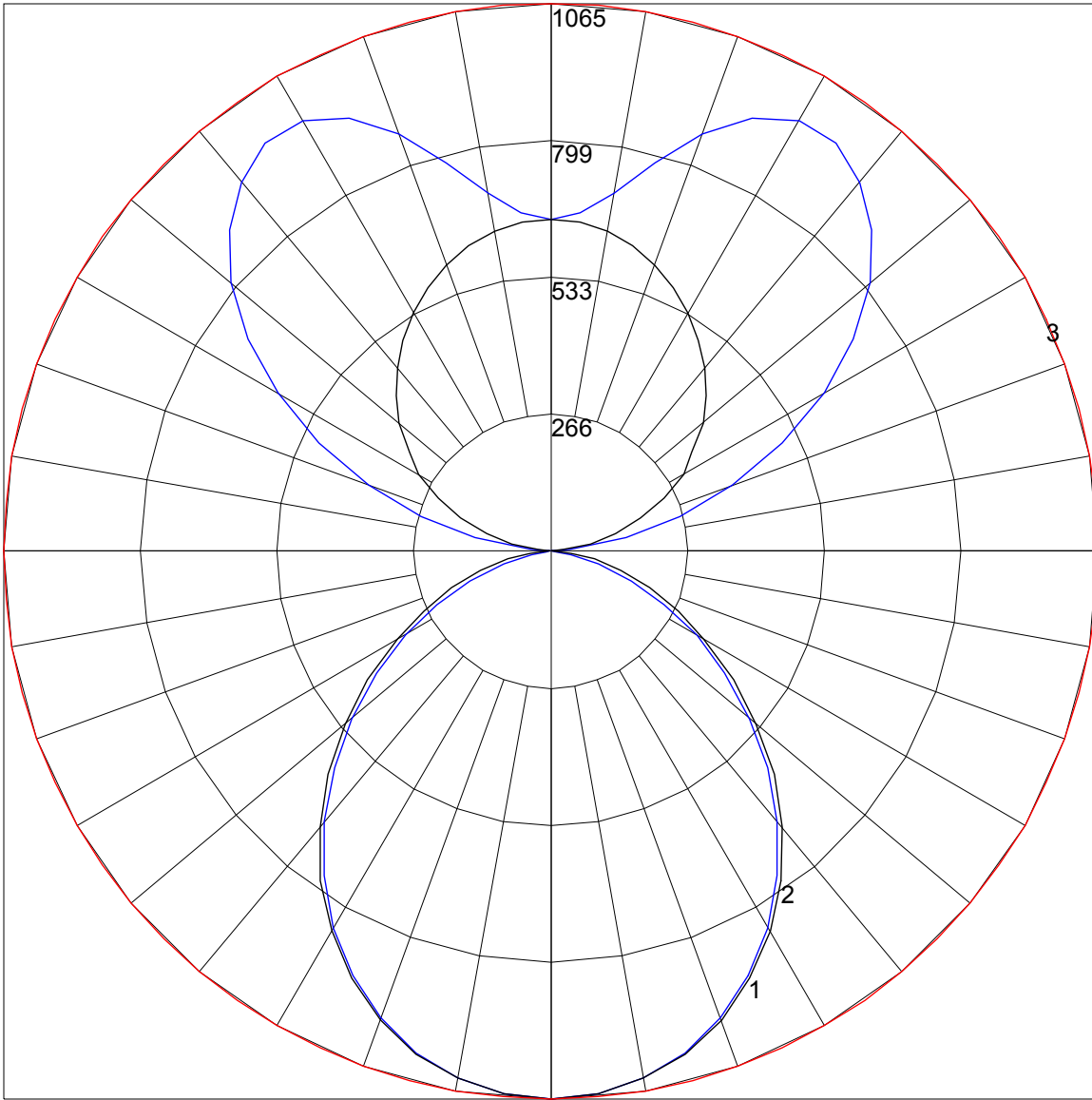
IES INDOOR REPORT
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	107	107	107	107	98	98	98	98	82	82	82	68	68	68	55	55	55	48
1	98	94	90	86	90	86	83	80	73	70	68	60	59	57	49	48	47	41
2	89	82	76	71	82	76	71	66	64	60	57	53	51	48	43	41	40	35
3	82	72	65	59	75	67	61	56	57	52	48	47	44	41	38	36	34	30
4	75	64	56	50	69	59	53	47	50	45	41	42	38	35	35	32	30	26
5	69	57	49	43	63	53	46	41	45	40	36	38	34	31	31	28	26	23
6	63	51	43	38	58	48	41	35	41	35	31	34	30	27	28	25	23	20
7	58	46	39	33	54	43	36	31	37	32	28	31	27	24	26	23	20	18
8	54	42	35	29	50	39	32	28	34	28	25	29	24	21	24	21	18	16
9	51	38	31	26	47	36	29	25	31	26	22	26	22	19	22	19	17	14
10	47	35	28	23	44	33	27	22	29	23	20	24	20	17	20	17	15	13

POLAR GRAPH



Maximum Candela = 1065 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.)