

IES Report

BoxRail® | 107 | 120° Batwing Lens | 90 CRI | SO

107-BX-XX-4-48-XX-XX-XX-XX-X-X-Z-SO-359-G1-X-AL / WH-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	105	109	111	113
Total Lumens, 4' rail length (1219mm)	2509	2588	2641	2693
Lumens per foot (305mm)	627	647	660	673
Input Power (W), 4' rail length (1219mm)	24.0	24.0	24.0	24.0
Watts per foot (305mm)	6.0	6.0	6.0	6.0
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: L011800114



Report No: L011800114

Issue Date: 1/4/2018

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

Model Number: 107-BX-48-Z-SO-359-G1

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: 1/2/18

Date of Tests: 1/3/18 - 1/4/18

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-BX-48-Z-SO-359-G1
Driver Model Number:	MEAN WELL HLG-40H-36A
Total Lumens:	2640.63
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.2
Input Power (W):	23.95
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):	3376
Chromaticity Coordinate x:	0.4117
Chromaticity Coordinate y:	0.3923
Ambient Temperature (°C):	25.0
Stabilization Time (Hours):	0:30
Total Operating Time (Hours):	1:25

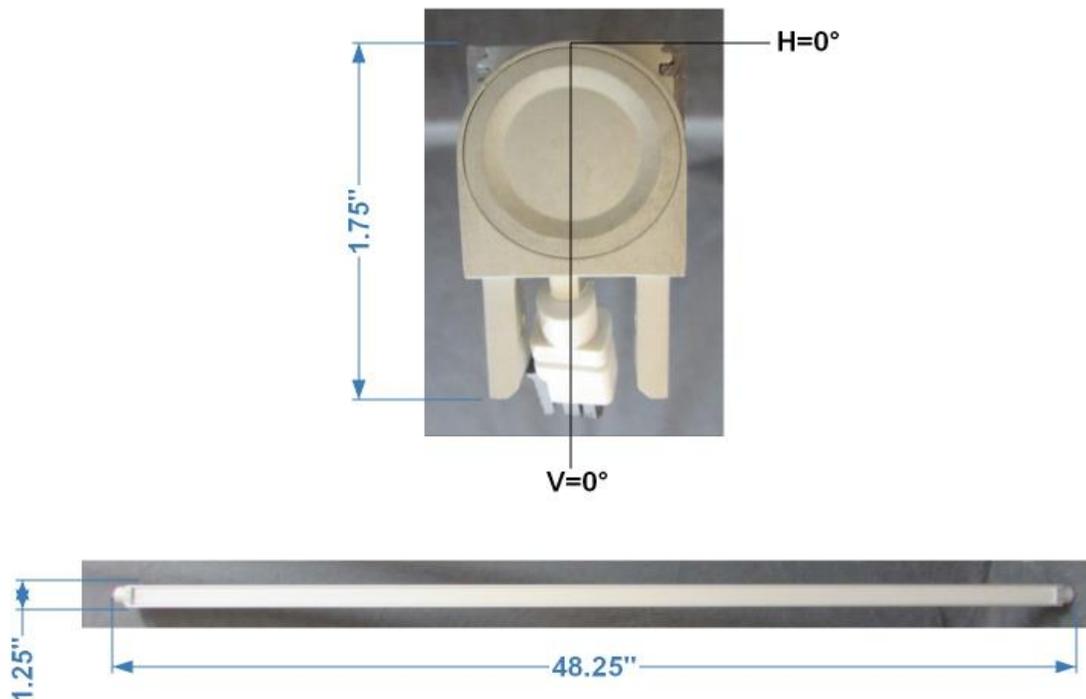
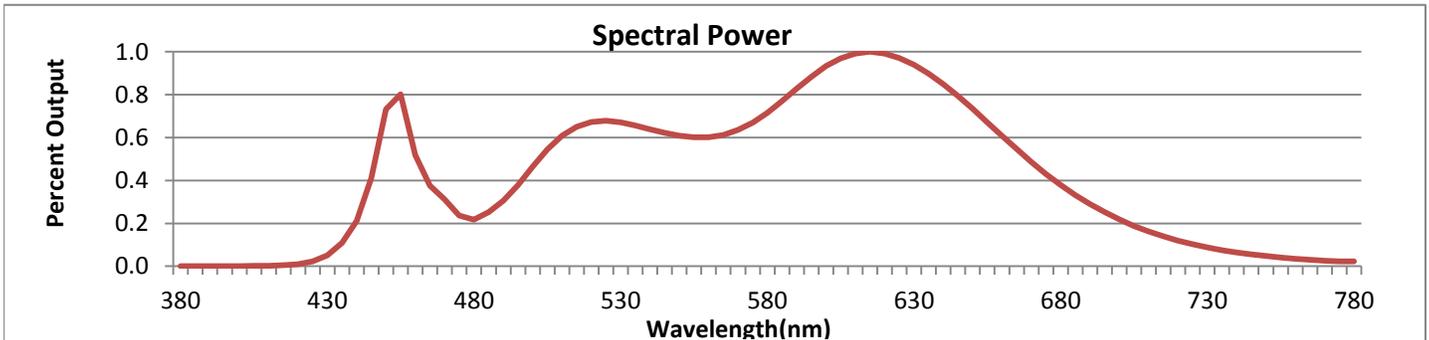


FIG. 1 LUMINAIRE

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



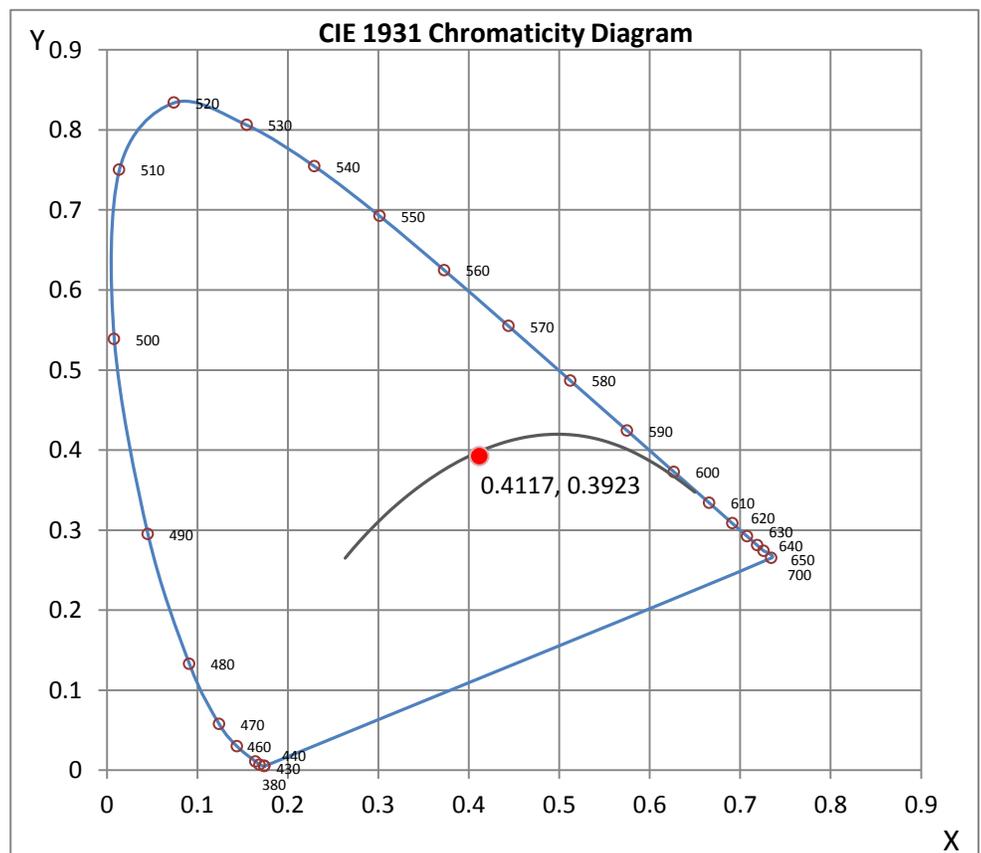
Wavelength	W/m ² nm	440	0.2119	510	0.6089	580	0.7160	650	0.7346	720	0.1199
380	0.0008	450	0.7318	520	0.6726	590	0.8282	660	0.6088	730	0.0878
390	0.0009	460	0.5181	530	0.6709	600	0.9335	670	0.4853	740	0.0643
400	0.0012	470	0.3118	540	0.6385	610	0.9922	680	0.3784	750	0.0475
410	0.0023	480	0.2176	550	0.6088	620	0.9914	690	0.2892	760	0.0350
420	0.0099	490	0.3062	560	0.6018	630	0.9400	700	0.2181	770	0.0258
430	0.0511	500	0.4650	570	0.6349	640	0.8495	710	0.1624	780	0.0222

CRI & CCT

x	0.4117
y	0.3923
u'	0.2392
v'	0.5129
CRI	95.80
CCT	3376
Duv	-0.00066

R Values

R1	97.37
R2	98.97
R3	98.79
R4	95.17
R5	97.54
R6	94.56
R7	94.76
R8	89.32
R9	74.11
R10	98.49
R11	88.09
R12	82.59
R13	97.07
R14	98.28



*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 : L011800114.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L011800114
[TESTLAB] LIGHT LABORATORY, INC. (www.lightlaboratory.com)
[ISSUEDATE] 1/4/2018
[MANUFAC] Vode Lighting
[LUMCAT] 107-BX-48-Z-SO-359-G1
[LUMINAIRE] BoxRail LED, 48", 3500K, 90 CRI, zipper board,
[MORE] 120° batwing lens up with white polycarbonate reflectors, standard output
[BALLASTCAT] MEAN WELL HLG-40H-36A
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[INPUT] 120VAC, 23.95W
[TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2641
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	110
Total Luminaire Watts	23.95
Ballast Factor	1.00
CIE Type	Indirect
Spacing Criterion (0-180)	N.A.
Spacing Criterion (90-270)	N.A.
Spacing Criterion (Diagonal)	N.A.
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	0.08 ft
Luminous Width (90-270)	3.85 ft
Luminous Height	0.00 ft

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	0	0	0
55	0	0	0
65	0	0	0
75	0	0	0
85	0	0	0

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	0	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0	0
65	0	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0	0
75	0	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0	0
95	51	52	53	55	57	59	61	61	60	56
100	151	151	152	153	153	153	152	150	144	136
105	256	256	256	257	257	257	255	250	242	228
110	370	369	370	370	370	368	365	358	346	326
115	485	485	485	485	483	480	474	464	447	421
120	596	596	595	593	591	585	577	562	540	508
125	698	697	695	692	687	679	667	648	621	584
130	785	784	781	776	769	758	742	719	687	646
135	853	852	848	841	832	818	798	771	736	692
140	900	899	894	886	874	857	834	804	766	720
145	924	922	916	906	892	872	847	814	775	730
150	918	916	908	897	881	860	833	801	764	725
155	877	875	867	857	841	821	797	769	738	706
160	810	808	802	793	780	764	745	724	701	678
165	729	728	724	718	710	699	688	675	662	648
170	659	659	656	654	650	646	641	635	629	623
175	616	616	615	615	614	613	612	610	609	608
180	603	603	603	603	603	603	603	603	603	603

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	0	0	0	0	0	0	0	0	0
5	0	0	0	0	0	0	0	0	0
10	0	0	0	0	0	0	0	0	0
15	0	0	0	0	0	0	0	0	0
20	0	0	0	0	0	0	0	0	0
25	0	0	0	0	0	0	0	0	0
30	0	0	0	0	0	0	0	0	0
35	0	0	0	0	0	0	0	0	0
40	0	0	0	0	0	0	0	0	0
45	0	0	0	0	0	0	0	0	0
50	0	0	0	0	0	0	0	0	0
55	0	0	0	0	0	0	0	0	0
60	0	0	0	0	0	0	0	0	0

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CANDELA TABULATION - (Cont.)

65	0	0	0	0	0	0	0	0	0
70	0	0	0	0	0	0	0	0	0
75	0	0	0	0	0	0	0	0	0
80	0	0	0	0	0	0	0	0	0
85	0	0	0	0	0	0	0	0	0
90	0	0	0	0	0	0	0	0	0
95	51	44	38	32	29	27	27	27	26
100	123	109	94	84	77	74	73	73	72
105	208	185	162	145	134	129	127	125	124
110	298	266	234	209	194	186	181	179	179
115	386	345	305	273	253	241	235	232	231
120	467	418	371	333	308	293	285	281	280
125	537	484	432	387	358	340	330	326	325
130	595	538	483	437	405	384	372	366	365
135	639	581	526	480	447	424	410	403	401
140	667	612	561	516	484	461	446	438	436
145	681	632	586	546	516	494	479	471	469
150	682	641	602	568	542	523	509	502	500
155	672	640	610	584	563	548	536	530	528
160	654	632	612	594	579	568	560	555	554
165	634	622	610	599	590	584	579	576	575
170	617	612	606	602	598	595	593	591	591
175	606	605	604	603	602	601	601	601	600
180	603	603	603	603	603	603	603	603	603

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ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	0.00	N.A.	0.00
0-30	0.00	N.A.	0.00
0-40	0.00	N.A.	0.00
0-60	0.00	N.A.	0.00
0-80	0.00	N.A.	0.00
0-90	0.00	N.A.	0.00
10-90	0.00	N.A.	0.00
20-40	0.00	N.A.	0.00
20-50	0.00	N.A.	0.00
40-70	0.00	N.A.	0.00
60-80	0.00	N.A.	0.00
70-80	0.00	N.A.	0.00
80-90	0.00	N.A.	0.00
90-110	273.95	N.A.	10.40
90-120	649.57	N.A.	24.60
90-130	1128.47	N.A.	42.70
90-150	2072.53	N.A.	78.50
90-180	2640.63	N.A.	100.00
110-180	2366.69	N.A.	89.60
0-180	2640.63	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	0.00
10-20	0.00
20-30	0.00
30-40	0.00
40-50	0.00
50-60	0.00
60-70	0.00
70-80	0.00
80-90	0.00
90-100	57.72
100-110	216.22
110-120	375.62
120-130	478.90
130-140	501.08
140-150	442.98
150-160	324.43
160-170	185.13
170-180	58.55

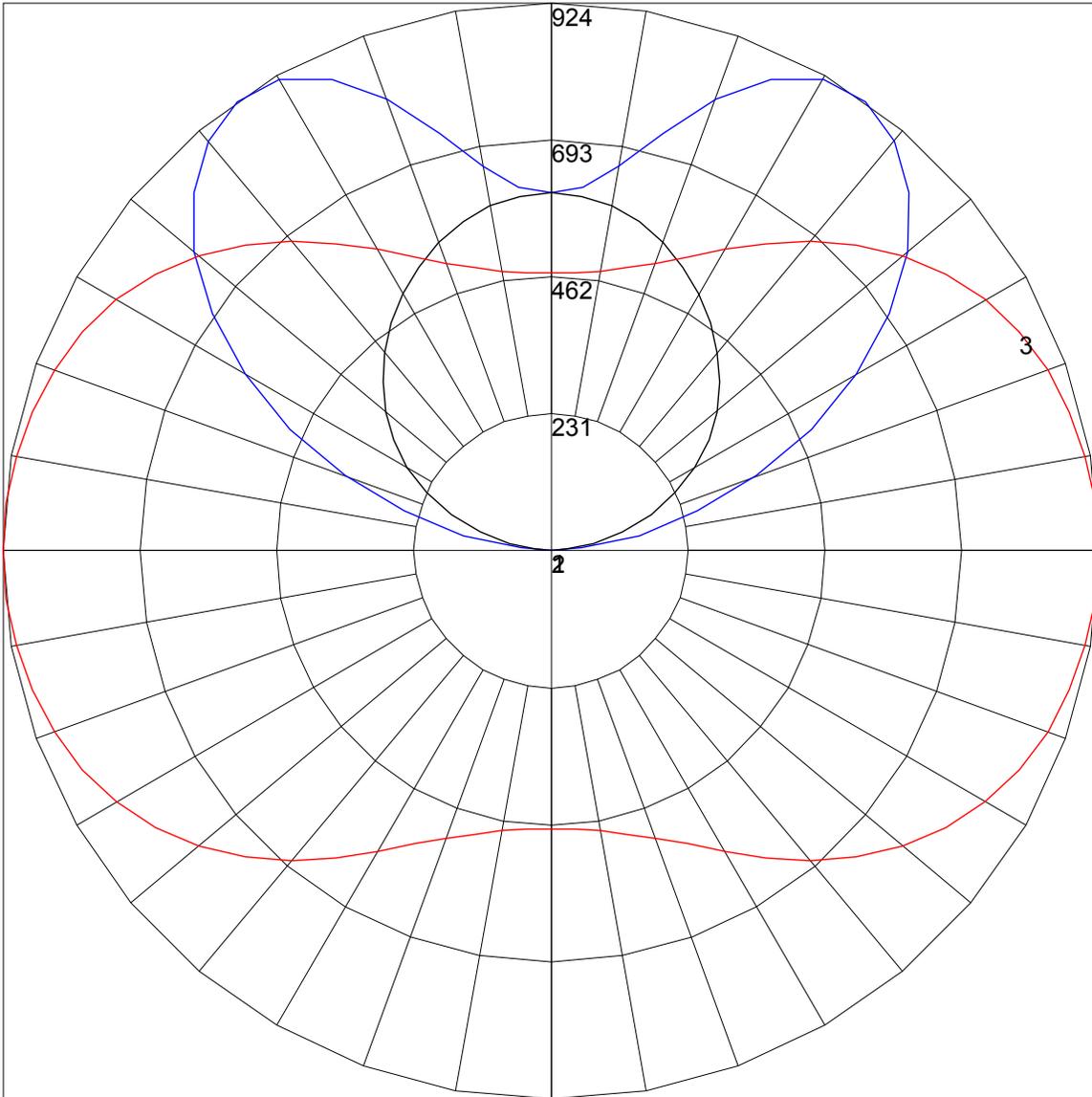
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COEFFICIENTS OF UTILIZATION - ZONAL CAVITY METHOD

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	
0	95	95	95	95	81	81	81	81	56	56	56	32	32	32	10	10	10	0
1	87	83	79	76	74	71	68	65	48	47	45	28	27	26	9	9	8	0
2	79	72	66	62	67	62	57	53	42	40	37	24	23	22	8	7	7	0
3	72	63	56	51	61	54	49	44	37	34	31	21	20	18	7	6	6	0
4	65	56	48	43	56	48	42	37	33	29	26	19	17	16	6	6	5	0
5	60	49	42	36	51	42	36	32	29	25	22	17	15	13	5	5	4	0
6	55	44	36	31	47	38	32	27	26	22	19	15	13	11	5	4	4	0
7	50	39	32	27	43	34	28	23	23	19	17	14	11	10	4	4	3	0
8	47	35	28	23	40	30	24	20	21	17	14	12	10	9	4	3	3	0
9	43	32	25	20	37	27	22	18	19	15	13	11	9	8	4	3	3	0
10	40	29	22	18	34	25	19	16	17	14	11	10	8	7	3	3	2	0

POLAR GRAPH



Maximum Candela = 924 Located At Horizontal Angle = 0, Vertical Angle = 145
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 (145) (Through Max. Cd.)