IES File

Performance Summary

The performance data in black text is confirmed through third party testing (see the following Light Labratories report for details). The performance data in grey text is calculated by Vode. For reference only.

BoxRail LED - Button board™ with 36° Medium Optic, Standard Output

BoxRail LED, 48", 3500K, Button board with 36° medium optic, standard output
107-BX-X-4-48-X-X-X-X-X-X-B-SO-35-36-X-X-X

	2700K	3000K	3500K	4000K
Efficacy - Lumens per Watt	71	74	78	80
Total Lumens, 4' rail length (1219mm)	1971	2053	2139	2224
Lumens per foot (305mm)	492	513	534	556
Input Power (W), 4' rail length (1219mm)	27.6	27.6	27.6	27.6
Watts per foot (305mm)	6.9	6.9	6.9	6.9
Center Beam Candela	-	-	4328 @ 0°	-
CRI (>80min., 85 avg.)	-	-	83	-

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8165 E Kaiser Blvd. Anaheim, CA 92808
p. 714.282.2270
f. 714.676.5558

Test #: L01141905
Date: 1/8/2014

NVLAP LAB CODE 200927-0

Test Report: **L01141905**

Model Number: **107-BX-48-B-SO-35-36-AL**

Report Prepared For: Vode Lighting
1206 E. MacArthur Street #3 Sonoma, CA 95476

Test: Electrical and Photometric tests as required by the IESNA test standards.

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. Fixture catalog number is 107-BX-48-B-SO-35-36-AL . Received in working and undamaged condition. No modifications were necessary.

Testing Condition: Driver output set to 1050mA.

Sample Arrival Date: 1/3/14

Date of Tests: 1/7/14 - 1/7/14

Seasoning of Sample SSL: 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-S1	01/04/15
Xitron Power Analysis System	2503AH	MT-EL01	01/09/15
Fluke Digital Thermometer	52k/J	MT-TP02-GC	01/04/15
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.

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NVLAP LAB CODE 200927-0

LM-79 Test Summary	
Manufacturer:	Vode Lighting
Model Number:	107-BX-48-B-SO-35-36-AL
LAMPCAT:	N/A
Driver Model Number:	MEAN WELL HLG-40H-30A
Total Lumens:	2139.28
Input Voltage (VAC/60Hz):	120.00
Input Current (Amp):	0.23
Input Power (W):	27.56
Input Power Factor:	0.99
Total Harmonic Distortion @ 120V(%):	9%
Total Harmonic Distortion @ 277V(%):	N/A
Efficacy:	78
Color Rendering Index (CRI):	83
Correlated Color Temperature (K):	3434
Chromaticity Coordinate x:	0.4082
Chromaticity Coordinate y:	0.3903
Ambient Temperature (°F):	77.0
Stabilization Time (Hours):	0:40
Total Operating Time (Hours):	1:40
Off State Power(W):	0.00

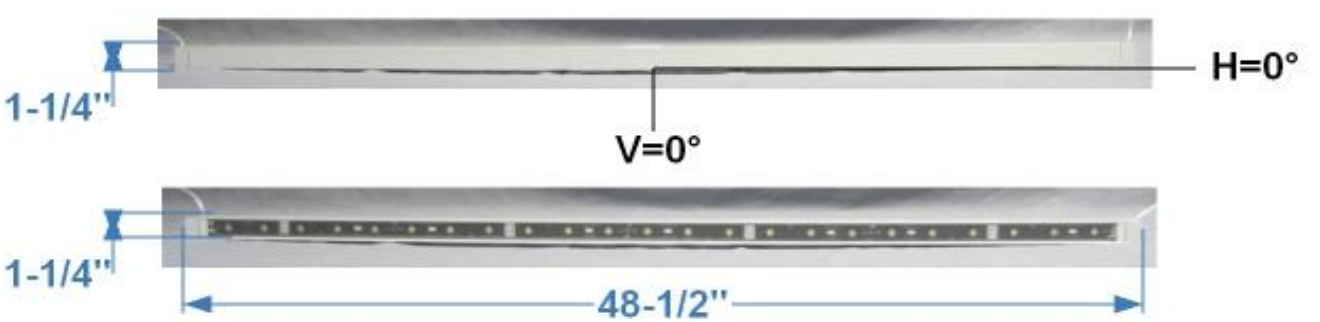

FIG1. LUMINAIRE

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

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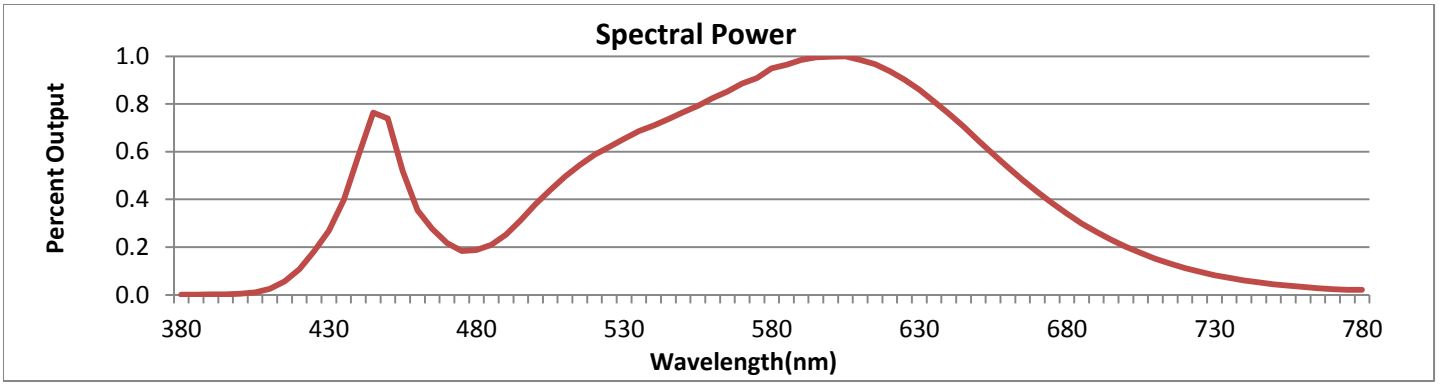


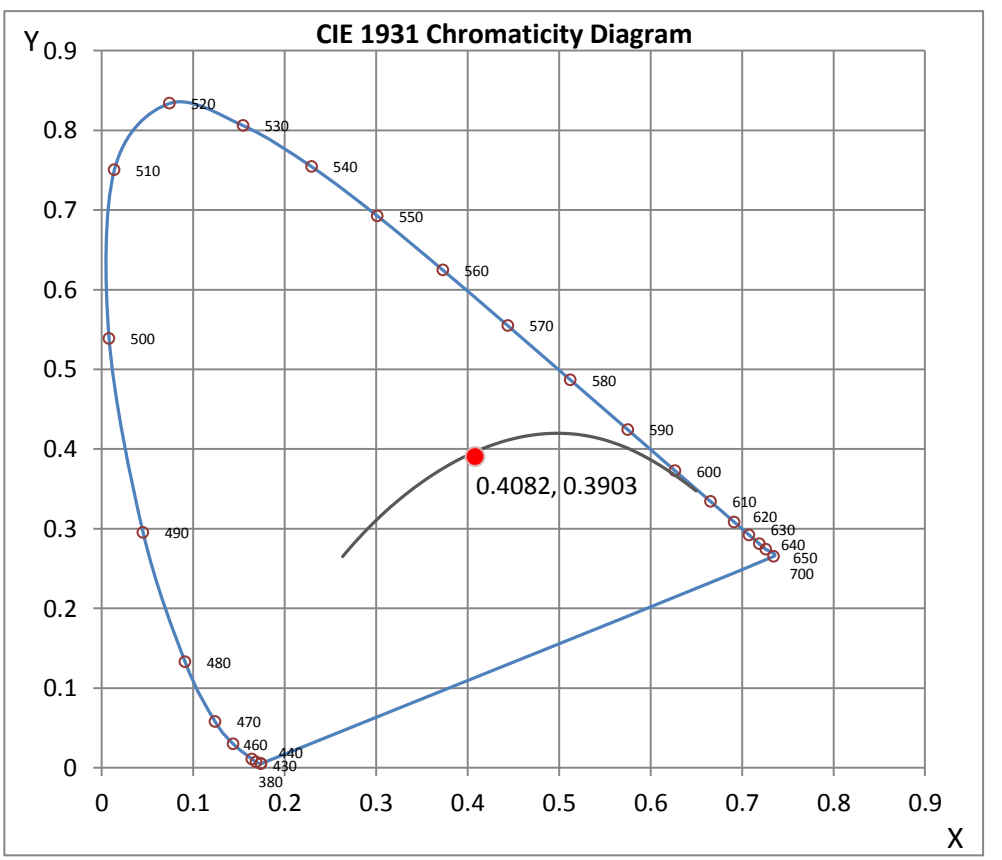
Wavelength	W/m²nm	440	0.0175	510	0.0149	580	0.0286	650	0.0195	720	0.0034
380	0.0000	450	0.0223	520	0.0177	590	0.0297	660	0.0161	730	0.0025
390	0.0001	460	0.0107	530	0.0197	600	0.0301	670	0.0130	740	0.0018
400	0.0001	470	0.0065	540	0.0214	610	0.0296	680	0.0103	750	0.0013
410	0.0007	480	0.0056	550	0.0230	620	0.0282	690	0.0079	760	0.0010
420	0.0033	490	0.0076	560	0.0248	630	0.0259	700	0.0061	770	0.0007
430	0.0081	500	0.0114	570	0.0267	640	0.0229	710	0.0046	780	0.0006

CRI & CCT

x	0.4082
y	0.3903
u'	0.2378
v'	0.5115
CRI	82.70
CCT	3434
Duv	-0.00081

R Values

R1	81.68
R2	87.35
R3	91.81
R4	82.89
R5	81.12
R6	82.62
R7	86.43
R8	67.70
R9	19.70
R10	70.07
R11	81.81
R12	66.10
R13	82.48
R14	94.93



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NVLAP LAB CODE 200927-0

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*

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

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Photometric Test Report

IES INDOOR REPORT
PHOTOMETRIC FILENAME : L01141905.IES

DESCRIPTION INFORMATION (From Photometric File)

IESNA:LM-63-2002
[TEST] L01141905
[TESTLAB] LIGHT LABORATORY, INC.
[ISSUEDATE] 1/8/2013
[MANUFAC] VODE LIGHTING
[LUMCAT] 107-BX-48-B-SO-35-36-AL
[LUMINAIRE] 48-1/2"L. X 1-1/4"W. X 1-1/4"H. LED LUMINAIRE
[MORE] CLEAR LENS
[BALLASTCAT] MEAN WELL HLG-40H-30A
[BALLAST] INPUT: 100-277VAC, 0.23-0.43A, 50/60Hz. OUTPUT: 30VDC, 1.34A
[LAMPPOSITION] 0,0
[LAMPCAT] N/A
[OTHER] INDICATING THE CANDELA VALUES ARE ABSOLUTE AND
[MORE] SHOULD NOT BE FACTORED FOR DIFFERENT LAMP RATINGS.
[OTHER] DRIVER OUTPUT SET TO 1050mA
[_INPUT] 120VAC, 27.56W
[_TEST PROCEDURE] IESNA:LM-79-08

CHARACTERISTICS

Lumens Per Lamp	N.A. (absolute)
Total Lamp Lumens	N.A. (absolute)
Luminaire Lumens	2139
Total Luminaire Efficiency	N.A.
Luminaire Efficacy Rating (LER)	78
Total Luminaire Watts	27.56
Ballast Factor	1.00
CIE Type	Direct
Spacing Criterion (0-180)	0.62
Spacing Criterion (90-270)	0.62
Spacing Criterion (Diagonal)	0.62
Basic Luminous Shape	Rectangular
Luminous Length (0-180)	3.83 ft
Luminous Width (90-270)	0.08 ft
Luminous Height	0.00 ft

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PHOTOMETRIC FILENAME : L01141905.IES

LUMINANCE DATA (cd/sq.m)

Angle In Degrees	Average 0-Deg	Average 45-Deg	Average 90-Deg
45	5857	6750	6130
55	2815	3182	2937
65	1578	1661	1661
75	814	949	814
85	403	0	0

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CANDELA TABULATION

	0	5	10	15	20	25	30	35	40	45
0.0	4328	4328	4328	4328	4328	4328	4328	4328	4328	4328
1.0	4327	4327	4327	4326	4326	4326	4325	4327	4326	4326
3.0	4282	4282	4282	4282	4283	4283	4282	4282	4282	4281
5.0	4180	4181	4181	4181	4181	4182	4181	4182	4182	4182
7.0	4021	4022	4022	4023	4023	4024	4025	4025	4025	4025
9.0	3802	3768	3766	3763	3763	3761	3759	3759	3758	3756
11.0	3525	3524	3525	3527	3529	3532	3533	3535	3536	3536
13.0	3197	3197	3198	3199	3201	3203	3205	3206	3206	3206
15.0	2834	2835	2835	2836	2837	2838	2838	2839	2838	2838
17.0	2460	2460	2460	2460	2460	2461	2460	2459	2458	2457
19.5	2007	2008	2009	2010	2010	2011	2011	2011	2010	2009
22.5	1529	1529	1531	1533	1537	1539	1541	1543	1544	1544
25.5	1123	1123	1126	1130	1135	1140	1145	1149	1152	1153
29.0	744	745	749	753	760	767	773	780	784	786
33.0	445	446	449	453	459	466	474	480	485	487
37.5	255	256	258	262	267	272	278	284	288	290
42.5	146	147	149	151	154	158	161	165	168	169
47.5	90	90	91	92	94	96	98	100	102	103
55.0	46	46	46	47	48	49	50	51	51	52
65.0	19	19	19	19	19	20	20	20	20	20
75.0	6	6	6	6	6	6	6	6	7	7
85.0	1	1	1	1	1	1	1	1	1	0
90.0	0	0	0	0	0	0	0	0	0	0

Vert. Angles	**Horizontal Angles**								
	50	**55**	**60**	**65**	**70**	**75**	**80**	**85**	**90**
0.0	4328	4328	4328	4328	4328	4328	4328	4328	4328
1.0	4326	4326	4326	4325	4326	4326	4326	4326	4326
3.0	4282	4282	4282	4282	4281	4282	4281	4282	4281
5.0	4182	4181	4181	4181	4180	4180	4180	4180	4180
7.0	4025	4025	4024	4023	4022	4021	4020	4020	4019
9.0	3756	3754	3751	3751	3749	3749	3754	3754	3798
11.0	3535	3533	3531	3529	3527	3523	3522	3520	3520
13.0	3205	3203	3201	3198	3195	3193	3190	3190	3188
15.0	2836	2834	2832	2828	2825	2823	2822	2821	2820
17.0	2455	2452	2450	2446	2443	2440	2438	2437	2435
19.5	2007	2003	1999	1994	1990	1986	1982	1981	1979
22.5	1542	1539	1534	1527	1521	1515	1511	1508	1505
25.5	1152	1150	1144	1137	1129	1123	1117	1114	1111
29.0	785	782	777	771	764	757	753	750	748
33.0	487	484	479	474	468	463	459	456	455
37.5	290	288	284	279	275	270	267	265	264
42.5	169	168	166	163	160	157	155	154	153
47.5	103	103	102	100	98	97	95	95	94
55.0	52	52	51	51	50	49	49	49	48
65.0	21	21	21	20	20	20	20	20	20
75.0	7	7	6	6	6	6	6	6	6
85.0	0	0	0	0	0	0	0	0	0
90.0	0	0	0	0	0	0	0	0	0

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IES INDOOR REPORT
PHOTOMETRIC FILENAME : L01141905.IES

ZONAL LUMEN SUMMARY

Zone	Lumens	%Lamp	%Fixt
0-20	1117.72	N.A.	52.20
0-30	1671.29	N.A.	78.10
0-40	1916.19	N.A.	89.60
0-60	2089.2	N.A.	97.70
0-80	2135.54	N.A.	99.80
0-90	2139.28	N.A.	100.00
10-90	1824.66	N.A.	85.30
20-40	798.47	N.A.	37.30
20-50	924.45	N.A.	43.20
40-70	205.90	N.A.	9.60
60-80	46.35	N.A.	2.20
70-80	13.45	N.A.	0.60
80-90	3.74	N.A.	0.20
90-110	0.00	N.A.	0.00
90-120	0.00	N.A.	0.00
90-130	0.00	N.A.	0.00
90-150	0.00	N.A.	0.00
90-180	0.00	N.A.	0.00
110-180	0.00	N.A.	0.00
0-180	2139.28	N.A.	100.00

Total Luminaire Efficiency = N.A.%

ZONAL LUMEN SUMMARY

Zone	Lumens
0-10	314.63
10-20	803.10
20-30	553.57
30-40	244.90
40-50	125.98
50-60	47.02
60-70	32.89
70-80	13.45
80-90	3.74
90-100	0.00
100-110	0.00
110-120	0.00
120-130	0.00
130-140	0.00
140-150	0.00
150-160	0.00
160-170	0.00
170-180	0.00

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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	119	119	119	119	116	116	116	116	111	111	111	106	106	106	102	102	102	100
1	114	111	108	106	111	109	107	105	105	103	101	101	100	98	98	96	95	94
2	108	103	100	96	106	102	98	95	99	96	93	96	93	91	93	91	89	88
3	103	97	92	88	101	96	91	88	93	89	86	91	87	85	88	86	84	82
4	98	91	86	82	97	90	85	81	88	84	80	86	82	79	84	81	79	77
5	94	86	80	76	92	85	80	76	83	79	75	82	78	75	80	77	74	73
6	90	81	76	72	88	80	75	71	79	74	71	78	74	70	76	73	70	69
7	86	77	71	67	84	76	71	67	75	70	67	74	70	67	73	69	66	65
8	82	73	68	64	81	73	67	64	72	67	63	71	66	63	70	66	63	62
9	79	70	64	61	78	69	64	60	68	64	60	68	63	60	67	63	60	59
10	76	67	61	58	75	66	61	58	65	61	57	65	60	57	64	60	57	56

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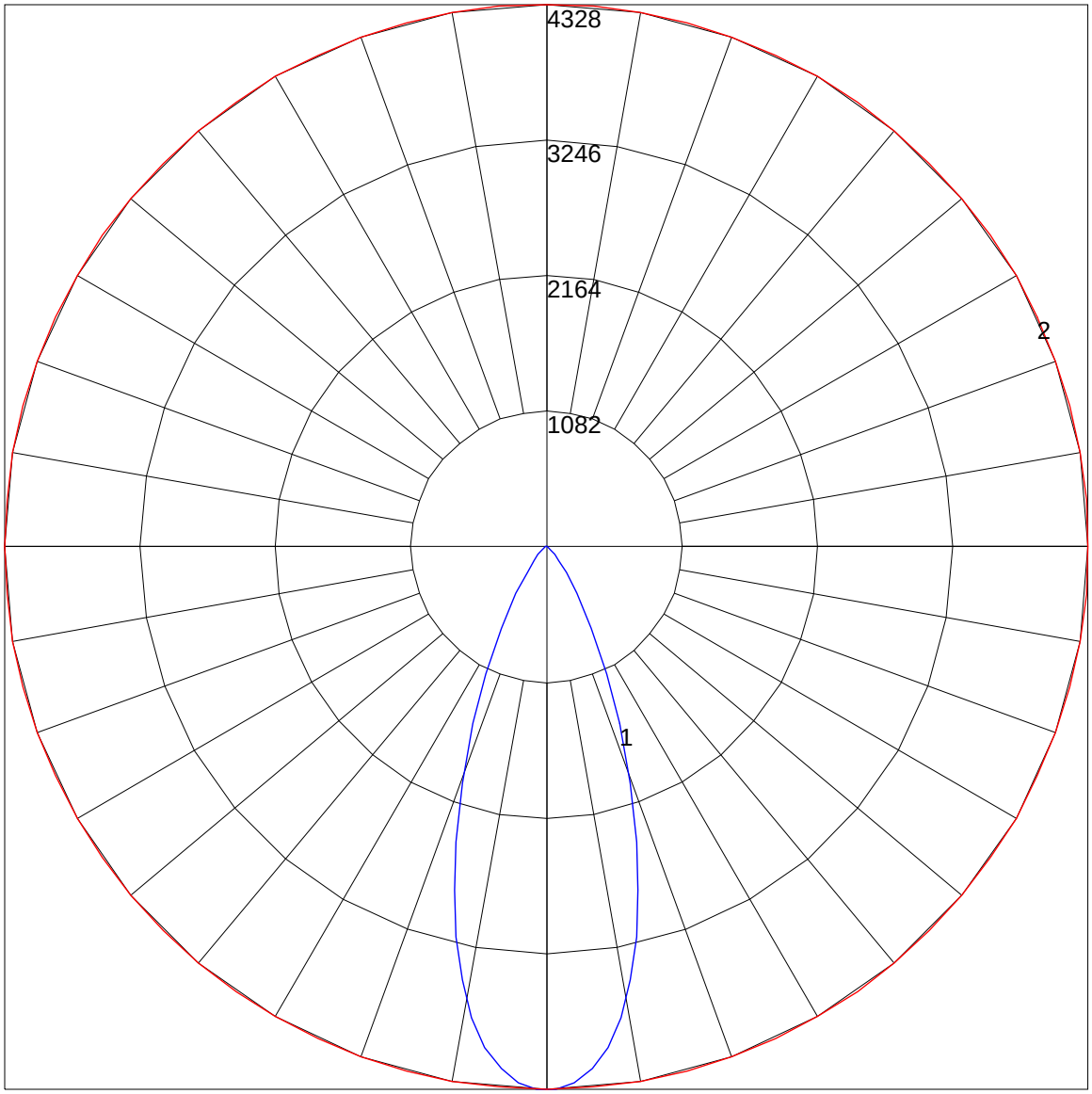
POLAR GRAPH



Maximum Candela = 4328 Located At Horizontal Angle = 0, Vertical Angle = 0
1 - Vertical Plane Through Horizontal Angles (0 - 180) (Through Max. Cd.)
2 - Horizontal Cone Through Vertical Angle (0) (Through Max. Cd.)

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